MOTOR PROTECTION & CONTROL TECHNOLOGY

NewFeed
Modbus/TCP
Communication Module

User Manual

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Modbus TCP

MOTOR PROTECTION & CONTROL TECHNOLOGY

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1 Definitions, Conventions and Terminology

LED	Light emitting diode (It is used as visual indicators)
Motor protection relay	It is an intelligent (computerized) unit monitoring an electric motor's current and voltage supply. In case of overloading, phase lost etc. the power supply of the motor will be interrupted by the protection relay to prevent damage to the motor.
PLC	Programmable Logic Controller.
Modbus/TCP	Modbus over transmission control protocol.
NC-MK2	NewCode-MK2
Heart Beat	A counter that increments on each Modbus message being transmitted to the PLC. This counter can be used by the PLC to determine if the connection to the slave is still healthy.

2 Overview

The NewFeed Modbus/TCP acts as a translator between the Modbus SCADA and the NewFeed. It is advisable to read the NewFeed user manual, as some of the topics will require knowledge on the NewFeed. It is also advisable to have knowledge on Modbus. Modbus specification document can be found on the web from http://www.modbus.org/.

The communication protocol between the NewFeed and SCADA is Modbus/TCP. Communication protocol between the NewFeed Modbus/TCP and the NewFeed is a NewElec proprietary protocol. Enabling the PLC to communicate with the NewCode via Modbus/TCP.

When NewFeed communication module Modbus/TCP is selected, the PLC bits will then be controlled from the internal communication module unless the external module is selected then the PLC bits are controlled via external module and no longer from the internal communication module.

3 Technical Specifications

3.1 Technical Specifications of NewFeed Modbus/TCP

Modbus/TCP	Protocol	• Modbus-RTU over TCP
	Switch	• 2 ports • Switch DOES NOT allow traffic through when auxiliary supply is off
	Baud Rate	• 10Mbps • 100Mbps
	Slave Port	• 502
	Assignable Input Registers	• 21 x Words • 32 x Bits
Indication Lights	Type	• Light Emitting Diode (LED)
	LED Indications	• **ADDRESS LED** ◦ Green Flash = 1 ◦ Red Flash = 10 ◦ Orange Flash = 100 ◦ Red Solid = No communication with NC • **DATA LED** ◦ Red = No communication. ◦ Green = Communication with PLC. ◦ Orange = Setup mode active. • MAC Read Error ◦ Both Addr Red & Data Red LED will Flash.

4 Dimension

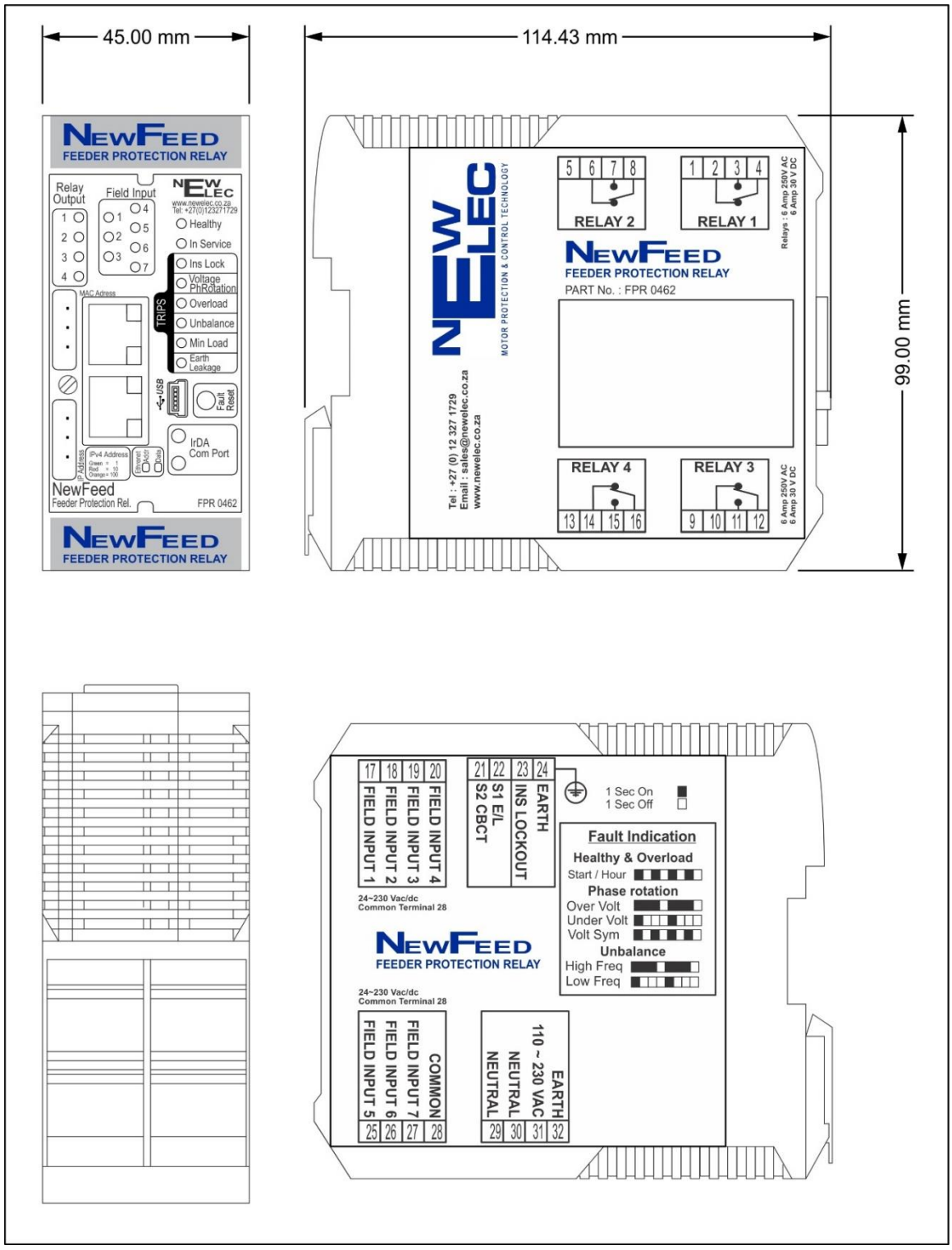


Figure 4.a: NewFeed dimensional drawing

5 Features

5.1 Functions Supported

Following Modbus functions are supported:

Function		Function Name
Hex	Dec	
0x03	03	Read Holding Registers. (See Chapter 5.4) (Address 0x40000)
0x06	06	Write Single Register. (See Chapter 5.4) (Address 0x40000)
0x10	16	Write Multiple Registers. (See Chapter 5.4) (Address 0x40000)

Table 5.1.a: Modbus functions supported.

6 Read/Write Holding Registers

- Write/Read a Maximum of 125 Registers.
- Read Holding Register (03) Supported.
- Write Single Register (06) Supported.
- Write Multiple Registers (16) Supported.

6.1 Relay fixed data

Addr	Name	Type / Format	Unit	R/W	Range
00001	Modbus address	Word / F2		R	0 - 255
00002	A 16-bit count generated by a free running counter. The PLC must read a unique count on every read cycle to indicate that the communication between the slave device and PLC are healthy. (Heart Beat)	Word / F2		R	0 - 65535
00003	Status code lowest number indicates highest priority	Word / F4		R	0 - 65535
00004	Warning codes lowest number indicates highest priority	Word / F5		R	0 - 65535

6.2 User Configurable

Table 1: User Configurable

Addr	Name	Type / Format	Unit	R/W	Range
00005	User Config Word 00 bit assignable 0 - 15	Word		R	0 - 65535
00006	User Config Word 01 bit assignable 16 - 31	Word		R	0 - 65535
00007	User Config Word 02 bit assignable 32 - 47	Word		R	0 - 65535
00008	User Config Word 03	Word		R	0 - 65535
00009	User Config Word 04	Word		R	0 - 65535
00010	User Config Word 05	Word		R	0 - 65535
00011	User Config Word 06	Word		R	0 - 65535
00012	User Config Word 07	Word		R	0 - 65535
00013	User Config Word 08	Word		R	0 - 65535
00014	User Config Word 09	Word		R	0 - 65535
00015	User Config Word 10	Word		R	0 - 65535
00016	User Config Word 11	Word		R	0 - 65535
00017	User Config Word 12	Word		R	0 - 65535

6.3 General Actual Values

Table 1: General Actual Values

Addr	Name	Type / Format	Unit	R/W	Range
00018	% I RMS level on CTMB x %MLC	Word / F2	%	R	0 - 1000
00019	% IL1 Current level on CTMB x %MLC	Word / F2	%	R	0 - 1000
00020	% IL2 Current level on CTMB x %MLC	Word / F2	%	R	0 - 1000
00021	% IL3 Current level on CTMB x %MLC	Word / F2	%	R	0 - 1000
00022	% I unbalance RMS on CTMB x %MLC	Word / F2	%	R	0 - 100
00023	Thermal Capacity (TC) % level remaining of thermal curve selected	Word / F2	%	R	0 - 100
00024	% I neutral RMS level on CTMB x %MLC	Word / F2	%	R	0 - 1000
00025	Active Thermal Curve Class (x0.1 sec / Curve Time Multiplier)	Word / F2	x 0.1sec	R	1 - 450
00026	Set % of MLC (range 10% to 100% on CTMB)	Word / F2	%	R	10 - 100
00027	CT module number selected 0 = CTMB 1 1 = CTMB 5 2 = CTMB 25 3 = CTMB 50 4 = CTMB 100 5 = CTMB 300	Word / F37		R	0 - 5
00028	CT secondary ratio input (1 to 9 amp)	Word / F2		R	1 - 9
00029	CT primary ratio input (1 to 10 000 amp)	Word / F2		R	0 – 10000
00030	% I Positive phase sequence	Word / F2	%	R	0 - 100
00031	% I Negative phase sequence	Word / F2	%	R	0 - 100
00032	% I Zero sequence	Word / F2	%	R	0 - 100
00033	IL1 to IL2 angle in degrees	Word / F2	Degr.	R	0 – 359
00034	IL2 to IL3 angle in degrees	Word / F2	Degr.	R	0 – 359
00035	IL3 to IL1 angle in degrees	Word / F2	Degr.	R	0 – 359
00036	VL1 to IL1 angle in degrees	Word / F2	Degr.	R	0 - 359
00037	VL2 to IL2 angle in degrees	Word / F2	Degr.	R	0 - 359
00038	VL3 to IL3 angle in degrees	Word / F2	Degr.	R	0 - 359
00039	Reserved.	Word / F2		R	
00040	Reserved.	Word / F2		R	
00041	Reserved.	Word / F2		R	
00042	Reserved.	Word / F2		R	
00043	Reserved.	Word / F2		R	
00044	Reserved.	Word / F2		R	
00045	Reserved.	Word / F2		R	
00046	Reserved.	Word / F2		R	
00047	Reserved.	Word / F2		R	
00048	Reserved.	Word / F2		R	
00049	Reserved.	Word / F2		R	
00050	Reserved.	Word / F2		R	
00051	Reserved.	Word / F37		R	
00052	Reserved.	Word / F2		R	
00053	Reserved.	Word / F2		R	
00054	Reserved.	Word / F2		R	
00055	Reserved.	Word / F2		R	
00056	Reserved.	Word / F2		R	

Table 2: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00057	Reserved.	Word / F2		R	
00058	Reserved.	Word / F2		R	
00059	Reserved.	Word / F2		R	
00060	Reserved.	Word / F2		R	
00061	Reserved.	Word / F2		R	
00062	Reserved.	Word / F2		R	
00063	Phase voltage max. level	Word / F2	Vac	R	10 - 11000
00064	Phase voltage of L1	Word / F2	Vac	R	10 - 11000
00065	Phase voltage of L2	Word / F2	Vac	R	10 - 11000
00066	Phase voltage of L3	Word / F2	Vac	R	10 - 11000
00067	Phase voltage of Neutral	Word / F2	Vac	R	10 - 11000
00068	Voltage symmetry	Word / F2	%	R	0 - 100
00069	Line frequency (x0.1)	Word / F2	x 0.1 Hz	R	0 - 1000
00070	Line voltage selection	Word / F2	Vac	R	10 - 11000
00071	VL1 to VL2 angle in degrees	Word / F2	Degr.	R	0 - 359
00072	VL2 to VL3 angle in degrees	Word / F2	Degr.	R	0 - 359
00073	VL3 to VL1 angle in degrees	Word / F2	Degr.	R	0 - 359
00074	Positive phase sequence voltage measured as % of MLC	Word / F2	%	R	0 - 100
00075	Negative phase sequence voltage measured as % of MLC	Word / F2	%	R	0 - 100
00076	Zero phase sequence voltage measured as % of MLC	Word / F2	%	R	0 - 100
00077	Volts per Hertz (x 0.1)	Word / F2	x 0.1 V/Hz	R	0 - 4000
00078	Rate of frequency change (x 0.1)	Word / F2	x 0.1 dF/dT	R	0 - 500
00079	Reserved.	Word / F2		R	
00080	Reserved.	Word / F2		R	
00081	Reserved.	Word / F2		R	
00082	Reserved.	Word / F2		R	
00083	Reserved.	Word / F2		R	
00084	Reserved.	Word / F2		R	
00085	Reserved.	Word / F2		R	
00086	Reserved.	Word / F2		R	
00087	Reserved.	Word / F2		R	
00088	Reserved.	Word / F2		R	
00089	Reserved.	Word / F2		R	
00090	Reserved.	Word / F2		R	
00091	Reserved.	Word / F2		R	
00092	Reserved.	Word / F2		R	
00093	Reserved.	Word / F2		R	
00094	Reserved.	Word / F2		R	
00095	Reserved.	Word / F2		R	
00096	Reserved.	Word / F2		R	
00097	Reserved.	Word / F2		R	
00098	Power factor (CosPI) level measured (x 0.01)	Word / F2	x 0.01	R	0 - 10000
00099	Reserved.	Word / F2		R	
00100	Earth leakage level measured on core balance current transformer CBCT01 in mA	Word / F2	mA	R	0 - 3000
00101	Reserved.	Word / F2		R	
00102	Insulation level any one of 3 phase conductors to earth if < 255 K ohm	Word / F2	kΩ	R	0 - 255

Table 2: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00103	Warning flags 00	Word		R	0 - 65535
	b00 = If IL Current > 10% .				
	b01 = If VL > 40% of selected Vac Voltage present measured .				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Record memory full.				
	b05 = Breaker Fault				
	b06 = Pre start warning				
	b07 = Feedback Forward Signal active				
	b08 = Feedback Reverse Signal active				
	b09 = Run forward fast.				
	b10 = Run forward slow.				
	b11 = Run reverse slow.				
	b12 = Run reverse fast.				
	b13 = Stop active.				
	b14 = Interlock active.				
	b15 = Starter ready.				
00104	Warning flags 01	Word		R	0 - 65535
	b00 = 4 - 20mA in 1 high				
	b01 = 4 - 20mA in 1 low				
	b02 = 4 - 20mA in 2 high				
	b03 = 4 - 20mA in 2 low				
	b04 = 4 - 20mA out 1 high				
	b05 = 4 - 20mA out 1 low				
	b06 = 4 - 20mA out 2 high				
	b07 = 4 - 20mA out 2 low				
	b08 = RTD 1 temperature high				
	b09 = RTD 1 temperature low				
	b10 = RTD 2 temperature high				
	b11 = RTD 2 temperature low				
	b12 = RTD 3 temperature high				
	b13 = RTD 3 temperature low				
	b14 = RTD 4 temperature high				
	b15 = RTD 4 temperature low				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00105	Warning flags 02	Word		R	0 - 65535
	b00 = RTD 5 temperature high				
	b01 = RTD 5 temperature low				
	b02 = RTD 6 temperature high				
	b03 = RTD 6 temperature low				
	b04 = RTD 7 temperature high				
	b05 = RTD 7 temperature low				
	b06 = RTD 8 temperature high				
	b07 = RTD 8 temperature low				
	b08 = RTD 9 temperature high				
	b09 = RTD 9 temperature low				
	b10 = RTD 10 temperature high				
	b11 = RTD 10 temperature low				
	b12 = RTD 11 temperature high				
	b13 = RTD 11 temperature low				
	b14 = RTD 12 temperature high				
	b15 = RTD 12 temperature low				
00106	Warning flags 03	Word		R	0 - 65535
	b00 = V lead I				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Motor start-up.				
	b04 = Motor running.				
	b05 = Motor stopped.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00107	Warning flags 04	Word		R	0 - 65535
	b00 = IL1 Sub-harmonics high.				
	b01 = IL1 1st Harmonic high.				
	b02 = IL1 2nd Harmonic high.				
	b03 = IL1 3rd Harmonic high.				
	b04 = IL1 4th Harmonic high.				
	b05 = IL1 5th Harmonic high.				
	b06 = IL1 6th Harmonic high.				
	b07 = IL1 7th Harmonic high.				
	b08 = IL1 8th Harmonic high.				
	b09 = IL1 9th Harmonic high.				
	b10 = IL1 10th Harmonic high.				
	b11 = IL1 11th Harmonic high.				
	b12 = IL1 12th Harmonic high.				
	b13 = IL1 13th Harmonic high.				
	b14 = IL1 14th Harmonic high.				
	b15 = IL1 15th Harmonic high.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00108	Warning flags 05	Word		R	0 - 65535
	b00 = IL1 16th Harmonic high.				
	b01 = IL1 17th Harmonic high.				
	b02 = IL1 18th Harmonic high.				
	b03 = IL1 19th Harmonic high.				
	b04 = IL1 20th Harmonic high.				
	b05 = IL1 21st Harmonic high.				
	b06 = IL1 22nd Harmonic high.				
	b07 = IL1 23rd Harmonic high.				
	b08 = IL1 24th Harmonic high.				
	b09 = IL1 25th Harmonic high.				
	b10 = IL1 26th Harmonic high.				
	b11 = IL1 27th Harmonic high.				
	b12 = IL1 28th Harmonic high.				
	b13 = IL1 29th Harmonic high.				
	b14 = IL1 30th Harmonic high.				
	b15 = IL1 31st Harmonic high.				
00109	Warning flags 06	Word		R	0 - 65535
	b00 = IL2 Sub-harmonics high.				
	b01 = IL2 1st Harmonic high.				
	b02 = IL2 2nd Harmonic high.				
	b03 = IL2 3rd Harmonic high.				
	b04 = IL2 4th Harmonic high.				
	b05 = IL2 5th Harmonic high.				
	b06 = IL2 6th Harmonic high.				
	b07 = IL2 7th Harmonic high.				
	b08 = IL2 8th Harmonic high.				
	b09 = IL2 9th Harmonic high.				
	b10 = IL2 10th Harmonic high.				
	b11 = IL2 11th Harmonic high.				
	b12 = IL2 12th Harmonic high.				
	b13 = IL2 13th Harmonic high.				
	b14 = IL2 14th Harmonic high.				
	b15 = IL2 15th Harmonic high.				
00110	Warning flags 7	Word		R	0 - 65535
	b00 = IL2 16th Harmonic high.				
	b01 = IL2 17th Harmonic high.				
	b02 = IL2 18th Harmonic high.				
	b03 = IL2 19th Harmonic high.				
	b04 = IL2 20th Harmonic high.				
	b05 = IL2 21st Harmonic high.				
	b06 = IL2 22nd Harmonic high.				
	b07 = IL2 23rd Harmonic high.				
	b08 = IL2 24th Harmonic high.				
	b09 = IL2 25th Harmonic high.				
	b10 = IL2 26th Harmonic high.				
	b11 = IL2 27th Harmonic high.				
	b12 = IL2 28th Harmonic high.				
	b13 = IL2 29th Harmonic high.				
	b14 = IL2 30th Harmonic high.				
	b15 = IL2 31st Harmonic high.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00111	Warning flags 8	Word		R	0 - 65535
	b00 = IL3 Sub-harmonics high.				
	b01 = IL3 1st Harmonic high.				
	b02 = IL3 2nd Harmonic high.				
	b03 = IL3 3rd Harmonic high.				
	b04 = IL3 4th Harmonic high.				
	b05 = IL3 5th Harmonic high.				
	b06 = IL3 6th Harmonic high.				
	b07 = IL3 7th Harmonic high.				
	b08 = IL3 8th Harmonic high.				
	b09 = IL3 9th Harmonic high.				
	b10 = IL3 10th Harmonic high.				
	b11 = IL3 11th Harmonic high.				
	b12 = IL3 12th Harmonic high.				
	b13 = IL3 13th Harmonic high.				
	b14 = IL3 14th Harmonic high.				
	b15 = IL3 15th Harmonic high.				
00112	Warning flags 9	Word		R	0 - 65535
	b00 = IL3 16th Harmonic high.				
	b01 = IL3 17th Harmonic high.				
	b02 = IL3 18th Harmonic high.				
	b03 = IL3 19th Harmonic high.				
	b04 = IL3 20th Harmonic high.				
	b05 = IL3 21st Harmonic high.				
	b06 = IL3 22nd Harmonic high.				
	b07 = IL3 23rd Harmonic high.				
	b08 = IL3 24th Harmonic high.				
	b09 = IL3 25th Harmonic high.				
	b10 = IL3 26th Harmonic high.				
	b11 = IL3 27th Harmonic high.				
	b12 = IL3 28th Harmonic high.				
	b13 = IL3 29th Harmonic high.				
	b14 = IL3 30th Harmonic high.				
	b15 = IL3 31st Harmonic high.				
00113	Warning flags 10	Word		R	0 - 65535
	b00 = VL1 Sub-harmonics high.				
	b01 = VL1 1st Harmonic high.				
	b02 = VL1 2nd Harmonic high.				
	b03 = VL1 3rd Harmonic high.				
	b04 = VL1 4th Harmonic high.				
	b05 = VL1 5th Harmonic high.				
	b06 = VL1 6th Harmonic high.				
	b07 = VL1 7th Harmonic high.				
	b08 = VL1 8th Harmonic high.				
	b09 = VL1 9th Harmonic high.				
	b10 = VL1 10th Harmonic high.				
	b11 = VL1 11th Harmonic high.				
	b12 = VL1 12th Harmonic high.				
	b13 = VL1 13th Harmonic high.				
	b14 = VL1 14th Harmonic high.				
	b15 = VL1 15th Harmonic high.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00114	Warning flags 11	Word		R	0 - 65535
	b00 = VL1 16th Harmonic high.				
	b01 = VL1 17th Harmonic high.				
	b02 = VL1 18th Harmonic high.				
	b03 = VL1 19th Harmonic high.				
	b04 = VL1 20th Harmonic high.				
	b05 = VL1 21st Harmonic high.				
	b06 = VL1 22nd Harmonic high.				
	b07 = VL1 23rd Harmonic high.				
	b08 = VL1 24th Harmonic high.				
	b09 = VL1 25th Harmonic high.				
	b10 = VL1 26th Harmonic high.				
	b11 = VL1 27th Harmonic high.				
	b12 = VL1 28th Harmonic high.				
	b13 = VL1 29th Harmonic high.				
	b14 = VL1 30th Harmonic high.				
	b15 = VL1 31st Harmonic high.				
00115	Warning flags 12	Word		R	0 - 65535
	b00 = VL2 Sub-harmonics high.				
	b01 = VL2 1st Harmonic high.				
	b02 = VL2 2nd Harmonic high.				
	b03 = VL2 3rd Harmonic high.				
	b04 = VL2 4th Harmonic high.				
	b05 = VL2 5th Harmonic high.				
	b06 = VL2 6th Harmonic high.				
	b07 = VL2 7th Harmonic high.				
	b08 = VL2 8th Harmonic high.				
	b09 = VL2 9th Harmonic high.				
	b10 = VL2 10th Harmonic high.				
	b11 = VL2 11th Harmonic high.				
	b12 = VL2 12th Harmonic high.				
	b13 = VL2 13th Harmonic high.				
	b14 = VL2 14th Harmonic high.				
	b15 = VL2 15th Harmonic high.				
00116	Warning flags 13	Word		R	0 - 65535
	b00 = VL2 16th Harmonic high.				
	b01 = VL2 17th Harmonic high.				
	b02 = VL2 18th Harmonic high.				
	b03 = VL2 19th Harmonic high.				
	b04 = VL2 20th Harmonic high.				
	b05 = VL2 21st Harmonic high.				
	b06 = VL2 22nd Harmonic high.				
	b07 = VL2 23rd Harmonic high.				
	b08 = VL2 24th Harmonic high.				
	b09 = VL2 25th Harmonic high.				
	b10 = VL2 26th Harmonic high.				
	b11 = VL2 27th Harmonic high.				
	b12 = VL2 28th Harmonic high.				
	b13 = VL2 29th Harmonic high.				
	b14 = VL2 30th Harmonic high.				
	b15 = VL2 31st Harmonic high.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00117	Warning flags 14	Word		R	0 - 65535
	b00 = VL3 Sub-harmonics high.				
	b01 = VL3 1st Harmonic high.				
	b02 = VL3 2nd Harmonic high.				
	b03 = VL3 3rd Harmonic high.				
	b04 = VL3 4th Harmonic high.				
	b05 = VL3 5th Harmonic high.				
	b06 = VL3 6th Harmonic high.				
	b07 = VL3 7th Harmonic high.				
	b08 = VL3 8th Harmonic high.				
	b09 = VL3 9th Harmonic high.				
	b10 = VL3 10th Harmonic high.				
	b11 = VL3 11th Harmonic high.				
	b12 = VL3 12th Harmonic high.				
	b13 = VL3 13th Harmonic high.				
	b14 = VL3 14th Harmonic high.				
	b15 = VL3 15th Harmonic high.				
00118	Warning flags 15	Word		R	0 - 65535
	b00 = VL3 16th Harmonic high.				
	b01 = VL3 17th Harmonic high.				
	b02 = VL3 18th Harmonic high.				
	b03 = VL3 19th Harmonic high.				
	b04 = VL3 20th Harmonic high.				
	b05 = VL3 21st Harmonic high.				
	b06 = VL3 22nd Harmonic high.				
	b07 = VL3 23rd Harmonic high.				
	b08 = VL3 24th Harmonic high.				
	b09 = VL3 25th Harmonic high.				
	b10 = VL3 26th Harmonic high.				
	b11 = VL3 27th Harmonic high.				
	b12 = VL3 28th Harmonic high.				
	b13 = VL3 29th Harmonic high.				
	b14 = VL3 30th Harmonic high.				
	b15 = VL3 31st Harmonic high.				
00119	Warning flags 16	Word		R	0 - 65535
	b00 = Over current warning Load Current > 100%.				
	b01 = Current unbalance > setting.				
	b02 = Current single phase .				
	b03 = I Positive sequence .				
	b04 = I Negative sequence .				
	b05 = I Zero sequence warning .				
	b06 = Neutral monitor .				
	b07 = THD magnitude current .				
	b08 = Min. load > setting.				
	b09 = Short circuit.				
	b10 = Running stall condition.				
	b11 = % THD current > setting.				
	b12 = Vectorial stall, rate of change of PF During start up low.				
	b13 = Unauthorised current.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00120	Warning flags 17	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Watt demand exceeded.				
	b13 = VAr demand exceeded.				
	b14 = VA demand exceeded.				
	b15 = Current demand exceeded.				
00121	Warning flags 18	Word		R	0 - 65535
	b00 = Overvoltage .				
	b01 = Undervoltage .				
	b02 = Voltage symmetry .				
	b03 = Low line voltage frequency .				
	b04 = High line voltage frequency .				
	b05 = Min. Volts/Hz .				
	b06 = Max. Volts/Hz .				
	b07 = Rate of frequency change .				
	b08 = Voltage phase rotation.				
	b09 = V Positive sequence .				
	b10 = V Negative sequence .				
	b11 = V Zero sequence .				
	b12 = % V THD high				
	b13 = V THD magnitude high				
	b14 = Reserved.				
	b15 = Reserved.				
00122	Warning flags 19	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved..				
	b08 = Reserved.				
	b09 = Voltage not present .				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 3: General Actual Values (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00123	Warning flags 20	Word		R	0 - 65535
	b00 = Auxiliary undervoltage.				
	b01 = Auxiliary overvoltage.				
	b02 = Earth leakage >setpoint.				
	b03 = Earth fault > setpoint.				
	b04 = Insulation lockout < 20kOhm.				
	b05 = Reserved.				
	b06 = Earth detector.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Forward Direction active power.				
	b12 = Forward Direction reactive power.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00124	Warning flags 21	Word		R	0 - 65535
	b00 = Speed switch 01 running or standstill				
	b01 = Speed switch 02 running or standstill				
	b02 = Overspeed pulse count high 01.				
	b03 = Underspeed pulse count low 01.				
	b04 = Overspeed pulse count high 02.				
	b05 = Underspeed pulse count low 02.				
	b06 = Overspeed 4-20mA input on Ch 01.				
	b07 = Underspeed 4-20mA input on Ch 01.				
	b08 = Overspeed 4-20mA input on Ch 02.				
	b09 = Underspeed 4-20mA input on Ch 02.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00125	Warning flags 22	Word		R	0 - 65535
	b00 = Main Contactor Trip Coil continous.				
	b01 = Breaker Fail warning.				
	b02 = IO Expander I2C communication lost.				
	b03 = RTD 4 module I2C communication lost.				
	b04 = Internal communication module I2C communication lost.				
	b05 = 4 - 20mAmodule I2C communication lost.				
	b06 = MMI I2C communication lost.				
	b07 = Ext. communication module I2C communication lost.				
	b08 = CT and VT connection failed.				
	b09 = EL CBCT connection failed.				
	b10 = Reserved.				
	b11 = Frozen contact (Main Contactor failed to open to clear fault).				
	b12 = Breaker operation near end of life.				
	b13 = Safety Maintenance Interlock active.				
	b14 = Emergency stop active.				
	b15 = RTD 8 module I2C communication lost.				

Table 4: General Actual Values (Continue)

Name	Type / Format	Unit	Unit	R/W	Range
00126	Warning flags 23	Word		R	0 - 65535
	b00 = 4 - 20mA input channel 1 high.				
	b01 = 4 - 20mA input channel 1 low.				
	b02 = 4 - 20mA input channel 2 high.				
	b03 = 4 - 20mA input channel 2 low.				
	b04 = 4 - 20mA output channel 1 high.				
	b05 = 4 - 20mA output channel 1 low.				
	b06 = 4 - 20mA output channel 2 high.				
	b07 = 4 - 20mA output channel 2 low.				
	b08 = RTD 1 temperature level high.				
	b09 = RTD 1 temperature level low.				
	b10 = RTD 2 temperature level high.				
	b11 = RTD 2 temperature level low.				
	b12 = RTD 3 temperature level high.				
	b13 = RTD 3 temperature level low.				
	b14 = RTD 4 temperature level high.				
	b15 = RTD 4 temperature level low.				
00127	Warning flags 24	Word		R	0 - 65535
	b00 = RTD 5 temperature level high.				
	b01 = RTD 5 temperature level low.				
	b02 = RTD 6 temperature level high.				
	b03 = RTD 6 temperature level low.				
	b04 = RTD 7 temperature level high.				
	b05 = RTD 7 temperature level low.				
	b06 = RTD 8 temperature level high.				
	b07 = RTD 8 temperature level low.				
	b08 = RTD 9 temperature level high.				
	b09 = RTD 9 temperature level low.				
	b10 = RTD 10 temperature level high.				
	b11 = RTD 10 temperature level low.				
	b12 = RTD 11 temperature level high.				
	b13 = RTD 11 temperature level low.				
	b14 = RTD 12 temperature level high.				
	b15 = RTD 12 temperature level low.				
00128	Warning flags 25	Word		R	0 - 65535
	b00 = Starts per hour, only One start left.				
	b01 = Execution fault, failure of Main Contactor to close within Execution time.				
	b02 = Feedback fault, Main contactor latching circuit failure within Feedback time.				
	b03 = Load settings corruption error.				
	b04 = Ext. configurable trip 01 active.				
	b05 = Ext. configurable trip 02 active.				
	b06 = Ext. configurable trip 03 active.				
	b07 = Ext. configurable trip 04 active.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 5: General Actual Values (Continue)

Name	Type / Format	Unit	Unit	R/W	Range
00129	Warning flags 26	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00130	Warning flags 27	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00131	Alarm flags 00	Word		R	0 - 65535
	b00 = Over current alarm , Load Current > 100% of setpoint.				
	b01 = Current unbalance .				
	b02 = Current single phase .				
	b03 = I Positive sequence .				
	b04 = I Negative sequence .				
	b05 = I Zero sequence alarm .				
	b06 = I Neutral monitor .				
	b07 = THD magnitude current .				
	b08 = Min. load < setpoint.				
	b09 = Short circuit.				
	b10 = Running stall condition.				
	b11 = THD % current > setpoint.				
	b12 = Vectorial stall, rate of change of Power Factor during start up too low.				
	b13 = Unauthorised current				
	b14 = Reserved.				
	b15 = Reserved.				

Table 6: General Actual Values (Continue)

Name	Type / Format	Unit	Unit	R/W	Range
00132	Alarm flags 01	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Watt demand exceeded.				
	b13 = VAr demand exceeded.				
	b14 = VA demand exceeded.				
	b15 = Current demand exceeded.				
00133	Alarm flags 02	Word		R	0 - 65535
	b00 = Overvoltage .				
	b01 = Undervoltage .				
	b02 = Voltage symmetry .				
	b03 = Low line voltage frequency .				
	b04 = High line voltage frequency .				
	b05 = Min. Volts/Hz .				
	b06 = Max. Volts/Hz .				
	b07 = Rate of frequency change .				
	b08 = Voltage phase on rotation .				
	b09 = V Positive sequence .				
	b10 = V Negative sequence .				
	b11 = V Zero sequence .				
	b12 = % V THD high				
	b13 = V THD magnitude high				
	b14 = Reserved.				
	b15 = Reserved.				
00134	Alarm flags 03	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Voltage not present .				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 7: General Actual Values (Continue)

Name	Type / Format	Unit	Unit	R/W	Range
00135	Alarm flags 04	Word		R	0 - 65535
	b00 = Auxiliary undervoltage.				
	b01 = Auxiliary overvoltage.				
	b02 = Earth leakage > setpoint.				
	b03 = Earth fault > setpoint.				
	b04 = Insulation lockout < 20kOhm.				
	b05 = Reserved.				
	b06 = Earth detector.				
	b07 = Reserved.				
	b08 = Apparent power limit .				
	b09 = Reserved.				
	b10 = Power factor limit .				
	b11 = Forward Direction active power.				
	b12 = Forward Direction reactive power.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00136	Alarm flags 05	Word		R	0 - 65535
	b00 = Speed switch 01 running or standstill.				
	b01 = Speed switch 02 running or standstill.				
	b02 = Overspeed pulse count high 01.				
	b03 = Underspeed pulse count low 01.				
	b04 = Overspeed pulse count high 02.				
	b05 = Underspeed pulse count low 02.				
	b06 = Overspeed 4-20mA input on Ch 01.				
	b07 = Underspeed 4-20mA input on Ch 01.				
	b08 = Overspeed 4-20mA input on Ch 02.				
	b09 = Underspeed 4-20mA input on Ch 02.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00137	Alarm flags 06	Word		R	0 - 65535
	b00 = Main Contactor Trip Coil continous.				
	b01 = Breaker Fail warning.				
	b02 = IO Expander I2C communication lost.				
	b03 = RTD module I2C communication lost.				
	b04 = Internal communication module I2C communication lost.				
	b05 = 4 - 20mAmodule I2C communication module lost.				
	b06 = MMI I2C communication lost.				
	b07 = Ext. communication module I2C communication lost.				
	b08 = CT and VT connection failed.				
	b09 = EL CBCT connection failed.				
	b10 = Reserved.				
	b11 = Frozen contact (Main Contactor failed to open to clear fault).				
	b12 = Breaker operation near end of life.				
	b13 = Safety Maintenance Interlock active.				
	b14 = Emergency stop active.				
	b15 = RTD 08 module I2C communication lost.				

Table 8: General Actual Values (Continue)

Name	Type / Format	Unit	Unit	R/W	Range
00138	Alarm flags 07	Word		R	0 - 65535
	b00 = 4 - 20mA input channel 1 high.				
	b01 = 4 - 20mA input channel 1 low.				
	b02 = 4 - 20mA input channel 2 high.				
	b03 = 4 - 20mA input channel 2 low.				
	b04 = 4 - 20mA output channel 1 high.				
	b05 = 4 - 20mA output channel 1 low.				
	b06 = 4 - 20mA output channel 2 high.				
	b07 = 4 - 20mA output channel 2 low.				
	b08 = RTD 1 temperature level high.				
	b09 = RTD 1 temperature level low.				
	b10 = RTD 2 temperature level high.				
	b11 = RTD 2 temperature level low.				
	b12 = RTD 3 temperature level high.				
	b13 = RTD 3 temperature level low.				
	b14 = RTD 4 temperature level high.				
	b15 = RTD 4 temperature level low.				
00139	Alarm flags 08	Word		R	0 - 65535
	b00 = RTD 5 temperature level high.				
	b01 = RTD 5 temperature level low.				
	b02 = RTD 6 temperature level high.				
	b03 = RTD 6 temperature level low.				
	b04 = RTD 7 temperature level high.				
	b05 = RTD 7 temperature level low.				
	b06 = RTD 8 temperature level high.				
	b07 = RTD 8 temperature level low.				
	b08 = RTD 9 temperature level high.				
	b09 = RTD 9 temperature level low.				
	b10 = RTD 10 temperature level high.				
	b11 = RTD 10 temperature level low.				
	b12 = RTD 11 temperature level high.				
	b13 = RTD 11 temperature level low.				
	b14 = RTD 12 temperature level high.				
	b15 = RTD 12 temperature level low.				
00140	Alarm flags 09	Word		R	0 - 65535
	b00 = Starts per hour, only One start left.				
	b01 = Execution fault, failure of Main Contactor to close within Execution time.				
	b02 = Feedback fault, Main contactor latching circuit failure within Feedback time.				
	b03 = Load settings corruption error.				
	b04 = Ext. configurable trip 01 active.				
	b05 = Ext. configurable trip 02 active.				
	b06 = Ext. configurable trip 03 active.				
	b07 = Ext. configurable trip 04 active.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00141	Alarm flags 10	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00142	Alarm flags 11	Word		R	0 - 65535
	b00 = ANSI77O channel 1 high, high.				
	b01 = ANSI77U channel 1 low, low.				
	b02 = ANSI77O channel 2 high, high.				
	b03 = ANSI77U channel 2 low, low.				
	b04 = ANSI77O channel 3 high, high.				
	b05 = ANSI77U channel 3 low, low.				
	b06 = ANSI77O channel 4 high, high.				
	b07 = ANSI77U channel 4 low, low.				
	b08 = ANSI77O channel 5 high, high.				
	b09 = ANSI77U channel 5 low, low.				
	b10 = ANSI77O channel 6 high, high.				
	b11 = ANSI77U channel 6 low, low.				
	b12 = ANSI77O channel 7 high, high.				
	b13 = ANSI77U channel 7 low, low.				
	b14 = ANSI77O channel 8 high, high.				
	b15 = ANSI77U channel 8 low, low.				
00143	Trip flags 00	Word		R	0 - 65535
	b00 = Over current alarm , Load Current > 100% of setpoint.				
	b01 = Current unbalance .				
	b02 = Current single phase .				
	b03 = I Positive sequence .				
	b04 = I Negative sequence .				
	b05 = I Zero sequence alarm .				
	b06 = I Neutral monitor .				
	b07 = THD magnitude current .				
	b08 = Min. load < setpoint.				
	b09 = Short circuit.				
	b10 = Running stall condition.				
	b11 = % THD current > setpoint.				
	b12 = Vectorial stall, rate of change of Power Factor during start up too low.				
	b13 = Unauthorised current				
	b14 = Reserved.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00144	Trip flags 01	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Watt demand exceeded.				
	b13 = VAr demand exceeded.				
	b14 = VA demand exceeded.				
	b15 = Current demand exceeded.				
00145	Trip flags 02	Word		R	0 - 65535
	b00 = Overvoltage .				
	b01 = Undervoltage .				
	b02 = Voltage symmetry .				
	b03 = Low line voltage frequency .				
	b04 = High line voltage frequency .				
	b05 = Min. Volts/Hz .				
	b06 = Max. Volts/Hz .				
	b07 = Rate of frequency change .				
	b08 = Voltage phase rotation.				
	b09 = V Positive sequence .				
	b10 = V Negative sequence .				
	b11 = V Zero sequence .				
	b12 = % V THD high				
	b13 = V THD magnitude high				
	b14 = Reserved.				
	b15 = Reserved.				
00146	Trip flags 03	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Voltage not present .				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00147	Trip flags 04	Word		R	0 - 65535
	b00 = Auxiliary undervoltage.				
	b01 = Auxiliary overvoltage.				
	b02 = Earth leakage > setpoint.				
	b03 = Earth fault > setpoint.				
	b04 = Insulation lockout < 20kOhm.				
	b05 = Reserved.				
	b06 = Earth detector.				
	b07 = Reserved.				
	b08 = Apparent power limit .				
	b09 = Reserved.				
	b10 = Power factor limit .				
	b11 = Forward Direction active power.				
	b12 = Forward Direction reactive power.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00148	Trip flags 05	Word		R	0 - 65535
	b00 = Speed switch 01 running or standstill.				
	b01 = Speed switch 02 running or standstill.				
	b02 = Overspeed pulse count high 01.				
	b03 = Underspeed pulse count low 01.				
	b04 = Overspeed pulse count high 02.				
	b05 = Underspeed pulse count low 02.				
	b06 = Overspeed 4-20mA input on Ch 01.				
	b07 = Underspeed 4-20mA input on Ch 01.				
	b08 = Overspeed 4-20mA input on Ch 02.				
	b09 = Underspeed 4-20mA input on Ch 02.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00149	Trip flags 06	Word		R	0 - 65535
	b00 = Main Contactor Trip Coil continous.				
	b01 = Breaker Fail warning.				
	b02 = IO Expander I2C communication lost.				
	b03 = RTD module I2C communication lost.				
	b04 = Internal communication module I2C communication lost.				
	b05 = 4 - 20mAmodule I2C communication module lost.				
	b06 = MMI I2C communication lost.				
	b07 = Ext. communication module I2C communication lost.				
	b08 = CT and VT 01 connection failed.				
	b09 = EL CBCT connection failed.				
	b10 = CT and VT 02 connection failed.				
	b11 = Frozen contact (Main Contactor failed to open to clear fault).				
	b12 = Breaker operation near end of life.				
	b13 = Safety Maintenance Interlock active.				
	b14 = Emergency stop active.				
	b15 = RTD 08 module I2C communication lost.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00150	Trip flags 07	Word		R	0 - 65535
	b00 = 4 - 20mA input channel 1 high.				
	b01 = 4 - 20mA input channel 1 low.				
	b02 = 4 - 20mA input channel 2 high.				
	b03 = 4 - 20mA input channel 2 low.				
	b04 = 4 - 20mA output channel 1 high.				
	b05 = 4 - 20mA output channel 1 low.				
	b06 = 4 - 20mA output channel 2 high.				
	b07 = 4 - 20mA output channel 2 low.				
	b08 = RTD 1 temperature level high.				
	b09 = RTD 1 temperature level low.				
	b10 = RTD 2 temperature level high.				
	b11 = RTD 2 temperature level low.				
	b12 = RTD 3 temperature level high.				
	b13 = RTD 3 temperature level low.				
	b14 = RTD 4 temperature level high.				
	b15 = RTD 4 temperature level low.				
00151	Trip flags 08	Word		R	0 - 65535
	b00 = RTD 5 temperature level high.				
	b01 = RTD 5 temperature level low.				
	b02 = RTD 6 temperature level high.				
	b03 = RTD 6 temperature level low.				
	b04 = RTD 7 temperature level high.				
	b05 = RTD 7 temperature level low.				
	b06 = RTD 8 temperature level high.				
	b07 = RTD 8 temperature level low.				
	b08 = RTD 9 temperature level high.				
	b09 = RTD 9 temperature level low.				
	b10 = RTD 10 temperature level high.				
	b11 = RTD 10 temperature level low.				
	b12 = RTD 11 temperature level high.				
	b13 = RTD 11 temperature level low.				
	b14 = RTD 12 temperature level high.				
	b15 = RTD 12 temperature level low.				
00152	Trip flags 09	Word		R	0 - 65535
	b00 = Starts per hour finished.				
	b01 = Execution fault, failure of Main Contactor to close within Execution time.				
	b02 = Feedback fault, Main contactor latching circuit failure within Feedback time.				
	b03 = Load settings corruption error.				
	b04 = Ext. configurable trip 01 active.				
	b05 = Ext. configurable trip 02 active.				
	b06 = Ext. configurable trip 03 active.				
	b07 = Ext. configurable trip 04 active.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00153	Trip flags 10	Word		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00154	Trip flags 11	Word		R	0 - 65535
	b00 = ANSI77O channel 1 high, high.				
	b01 = ANSI77U channel 1 low, low.				
	b02 = ANSI77O channel 2 high, high.				
	b03 = ANSI77U channel 2 low, low.				
	b04 = ANSI77O channel 3 high, high.				
	b05 = ANSI77U channel 3 low, low.				
	b06 = ANSI77O channel 4 high, high.				
	b07 = ANSI77U channel 4 low, low.				
	b08 = ANSI77O channel 5 high, high.				
	b09 = ANSI77U channel 5 low, low.				
	B10 = ANSI77O channel 6 high, high.				
	B11 = ANSI77U channel 6 low, low.				
	B12 = ANSI77O channel 7 high, high.				
	B13 = ANSI77U channel 7 low, low.				
	B14 = ANSI77O channel 8 high, high.				
	B15 = ANSI77U channel 8 low, low.				
00155	Release time of Main contactor	Word / F2	ms	R	0 - 10000
00156	Release time of Shunt trip	Word / F2	ms	R	0 - 10000
00157	Release total time to clear fault	Word / F2	ms	R	0 - 10000
00158	Auxillary Voltage level	Word / F2	Vac	R	0 - 300
00159	Reserved	Word / F2		R	
00160 00161	Breaker wear max. number of operations	DWord / F3		R	2000000000
00162	Reserved	Word / F2		R	
00163	Reserved	Word / F2		R	
00164	Reserved	Word / F2		R	
00165	Reserved	Word / F2		R	
00166	Reserved	Word / F2		R	
00167	Reserved	Word / F2		R	
00168	Reserved	Word / F2		R	
00169	Reserved	Word / F2		R	
00170	Reserved	Word / F2		R	
00171	Reserved	Word / F2		R	
00172	Reserved	Word / F2		R	
00173	Reserved	Word / F2		R	
00174	4 - 20mA input channel 1 level (x 0.1)	Word / F38	x 0.1mA	R	0 – 250

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00175	4 - 20mA input channel 2 level (x 0.1)	Word / F38	x 0.1mA	R	0 – 250
00176	4 - 20mA output channel 1 level (x 0.1)	Word / F38	x 0.1mA	R	0 – 250
00177	4 - 20mA output channel 2 level (x 0.1)	Word / F38	x 0.1mA	R	0 – 250
00178	RTD 1 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 – 250
00179	RTD 2 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 – 250
00180	RTD 3 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00181	RTD 4 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00182	RTD 5 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00183	RTD 6 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00184	RTD 7 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00185	RTD 8 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00186	RTD 9 temperature level. (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00187	RTD 10 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00188	RTD 11 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00189	RTD 12 temperature level (PT100/PT1000 = Level – 30 ^{0}C, PTC/NTC = Level x 10 Ohm)	Word / F39	^{0}C/Ω	R	0 - 250
00190	Speed Switch 01 RPM	Word / F2	RPM	R	0 - 6000
00191	Speed Switch 02 RPM	Word / F2	RPM	R	0 - 6000
00192	4 - 20mA input channel 01 (x 0.1) speed measurement	Word / F2	x 0.1mA	R	0 - 250
00193	4 - 20mA input channel 02 (x 0.1) speed measurement	Word / F2	x 0.1mA	R	0 - 250
00194	Reserved.	Word / F2		R	0 - 65535
00195	Reserved.	Word / F2		R	0 - 65535
00196	Reserved.	Word / F2		R	0 - 65535
00197	PLC Control Word 03 - Bits (Int Comms) (Only int. comm. module can write to this register)	Word / F2		R	0 - 65535
00198	PLC Control Word 04 - Word (Int Comms) (Only int. comm. module can write to this register)	Word / F2		R	0 - 65535
00199	PLC Control Word 05 - Word (Int Comms) (Only int. comm. module can write to this register)	Word / F2		R	0 - 65535
00200	PLC Control Word 06 (Ext Comms) (Only ext. comm. module can write to this register)	Word / F2		R	0 - 65535
00201	PLC Control Word 07 (Ext Comms) (Only ext. comm. module can write to this register)	Word / F2		R	0 - 65535
00202	PLC Control Word 08 (Ext Comms) (Only ext. comm. module can write to this register)	Word / F2		R	0 - 65535

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00203	Logic function 00	Word / F40		R	0 - 65535
	b00 = Dig. input 01.				
	b01 = Dig. input 02.				
	b02 = Dig. input 03.				
	b03 = Dig. input 04.				
	b04 = Dig. input 05.				
	b05 = Dig. input 06.				
	b06 = Dig. input 07.				
	b07 = Ext. Dig. input 08.				
	b08 = Ext. Dig. input 09.				
	b09 = Ext. Dig. input 10.				
	b10 = Ext. Dig. input 11.				
	b11 = Ext. Dig. input 12.				
	b12 = Ext. Dig. input 13.				
	b13 = Ext. Dig. input 14.				
	b14 = Ext. Dig. input 15.				
	b15 = Simulation active.				
00204	Logic function 01	Word / F41		R	0 - 65535
	b00 = Relay output 01.				
	b01 = Relay output 02.				
	b02 = Relay output 03.				
	b03 = Relay output 04.				
	b04 = Ext. relay output 05.				
	b05 = Ext. relay output 06.				
	b06 = Ext. relay output 07.				
	b07 = Ext. relay output 08.				
	b08 = Logic function 1 output.				
	b09 = Logic function 2 output.				
	b10 = Logic function 3 output.				
	b11 = Logic function 4 output.				
	b12 = Logic function 5 output.				
	b13 = Logic function 6 output.				
	b14 = Latch A.				
	b15 = Latch B.				
00205	Logic function 02	Word / F42		R	0 - 65535
	b00 = Counter A output.				
	b01 = Counter B output.				
	b02 = RTC output.				
	b03 = Status reporter.				
	b04 = Reserved.				
	b05 = Pulse generator output.				
	b06 = Timer A output.				
	b07 = Reserved.				
	b08 = Timer B output.				
	b09 = Reserved.				
	b10 = Ext. reset.				
	b11 = Internal reset.				
	b12 = Field reset.				
	b13 = Min. Load restart flag.				
	b14 = Reserved.				
	b15 = GOT reset.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00206	Logic function 03	Word / F43		R	0 - 65535
	b00 = Comparator 1 high high.				
	b01 = Comparator 1 high.				
	b02 = Comparator 1 high low.				
	b03 = Comparator 1 between.				
	b04 = Comparator 1 low high.				
	b05 = Comparator 1 low.				
	b06 = Comparator 1 low low.				
	b07 = Thermal Capacity (TC) high.				
	b08 = Comparator 2 high high.				
	b09 = Comparator 2 high.				
	b10 = Comparator 2 high low.				
	b11 = Comparator 2 between.				
	b12 = Comparator 2 low high.				
	b13 = Comparator 2 low.				
	b14 = Comparator 2 low low.				
	b15 = TC high high				
00207	Logic function 04	Word / F44		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00208	Counter A	Word/ F2		R	0 - 65535
00209	Counter B	Word/ F2		R	0 - 65535
00210	Starter function 00	Word / F45		R	0 - 65535
	b00 = Local selection bit lsb.				
	b01 = Local selection bit msb.				
	b02 = Feedback Forward signal active.				
	b03 = Feedback Reverse signal active.				
	b04 = Starter ready.				
	b05 = Pre start warning active.				
	b06 = Backspin timer active.				
	b07 = Transition timer active.				
	b08 = DC brake timer active.				
	b09 = Any stop active.				
	b10 = Any interlock active.				
	b11 = Emergency stop active.				
	b12 = Lockout active.				
	b13 = Pre start warning complete.				
	b14 = Star timer active.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00211	Starter function 01	Word / F46		R	0 - 65535
	b00 = Local forward fast.				
	b01 = Local forward slow.				
	b02 = Local interlock.				
	b03 = Local stop.				
	b04 = Local reverse slow.				
	b05 = Local reverse fast.				
	b06 = Remote forward fast.				
	b07 = Remote forward slow.				
	b08 = Remote interlock.				
	b09 = Remote stop.				
	b10 = Remote reverse slow.				
	b11 = Remote reverse fast.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00212	Starter function 02	Word / F47		R	0 - 65535
	b00 = Auto forward fast.				
	b01 = Auto forward slow.				
	b02 = Auto interlock.				
	b03 = Auto stop.				
	b04 = Auto reverse slow.				
	b05 = Auto reverse fast.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00213	Starter function 03	Word / F48		R	0 - 65535
	b00 = Starter Flag MotorRun00				
	b01 = Starter Flag MotorRun01.				
	b02 = Starter Flag MotorRun02.				
	b03 = Starter Flag MotorRun03.				
	b04 = Starter Flag MotorRun04.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00214	Starter function 04	Word / F49		R	0 - 65535
	b00 = Reserved.				
	b01 = Reserved.				
	b02 = Reserved.				
	b03 = Reserved.				
	b04 = Reserved.				
	b05 = Reserved.				
	b06 = Reserved.				
	b07 = Reserved.				
	b08 = Reserved.				
	b09 = Reserved.				
	b10 = Reserved.				
	b11 = Reserved.				
	b12 = Reserved.				
	b13 = Reserved.				
	b14 = Reserved.				
	b15 = Reserved.				
00215	Product Identification Number	Word F76		R	19 - 24
	19 = MEprotect Core,				
	20 = MEprotect Essence,				
	21 = MEprotect Pro,				
	22 = MEprotect Core ADE9078,				
	23 = MEprotect Essence ADE9078,				
	24 = MEprotect Pro ADE9078				
00216	Product Software Revision	Word F2		R	0 - 65535
	Lower Byte Bit00–Bit03 = Minor revisions 0=A, 1=B.., Higher Byte Bit04–Bit07 = Major revision is decimal number. 01, 02 etc. Together makes up revision number 01A				
00217	Real Time Clock Day	Word / F2		R	1 - 31
00218	Real Time Clock Month	Word / F2		R	1 - 12
00219	Real Time Clock Year	Word / F2		R	0 - 99
00220	Real Time Clock Second	Word / F2		R	0 - 59
00221	Real Time Clock Minute	Word / F2		R	0 - 59
00222	Real Time Clock Hour	Word / F2		R	0 - 23
00223	Warning flags 28	Word		R	0 - 65535
	b00 = ANSI77 Channel 1 High High Warn Flag.				
	b01 = ANSI77 Channel 1 High Warn Flag.				
	b02 = ANSI77 Channel 1 Low Warn Flag.				
	b03 = ANSI77 Channel 1 Low Low Warn Flag.				
	b04 = ANSI77 Channel 2 High High Warn Flag.				
	b05 = ANSI77 Channel 2 High Warn Flag.				
	b06 = ANSI77 Channel 2 Low Warn Flag.				
	b07 = ANSI77 Channel 2 Low Low Warn Flag.				
	b08 = ANSI77 Channel 3 High High Warn Flag.				
	b09 = ANSI77 Channel 3 High Warn Flag.				
	B10 = ANSI77 Channel 3 Low Warn Flag.				
	B11 = ANSI77 Channel 3 Low Low Warn Flag.				
	B12 = ANSI77 Channel 4 High High Warn Flag.				
	B13 = ANSI77 Channel 4 High Warn Flag.				
	B14 = ANSI77 Channel 4 Low Warn Flag.				
	B15 = ANSI77 Channel 4 Low Low Warn Flag.				

Table 1: General Actual Values (continued)

Addr	Name	Type / Format	Unit	R/W	Range
00224	Warning flags 29	Word		R	0 - 65535
	b00 = ANSI77 Channel 5 High High Warn Flag.				
	b01 = ANSI77 Channel 5 High Warn Flag.				
	b02 = ANSI77 Channel 5 Low Warn Flag.				
	b03 = ANSI77 Channel 5 Low Low Warn Flag.				
	b04 = ANSI77 Channel 6 High High Warn Flag.				
	b05 = ANSI77 Channel 6 High Warn Flag.				
	b06 = ANSI77 Channel 6 Low Warn Flag.				
	b07 = ANSI77 Channel 6 Low Low Warn Flag.				
	b08 = ANSI77 Channel 7 High High Warn Flag.				
	b09 = ANSI77 Channel 7 High Warn Flag.				
	B10 = ANSI77 Channel 7 Low Warn Flag.				
	B11 = ANSI77 Channel 7 Low Low Warn Flag.				
	B12 = ANSI77 Channel 8 High High Warn Flag.				
	B13 = ANSI77 Channel 8 High Warn Flag.				
	B14 = ANSI77 Channel 8 Low Warn Flag.				
	B15 = ANSI77 Channel 8 Low Low Warn Flag.				
00225	Telemeter Value Out 1	Word / F2		R	0 - 65535
00226	Telemeter Value Out 2	Word / F2		R	0 - 65535
00227	Telemeter Value Out 3	Word / F2		R	0 - 65535
00228	Telemeter Value Out 4	Word / F2		R	0 - 65535
00229	Telemeter Value Out 5	Word / F2		R	0 - 65535
00230	Telemeter Value Out 6	Word / F2		R	0 - 65535
00231	Telemeter Value Out 7	Word / F2		R	0 - 65535
00232	Telemeter Value Out 8	Word / F2		R	0 - 65535

6.4 Total Harmonic Distortion (THD) Actual Values

Table 3: Total Harmonic Distortion (THD) Actual Values

Addr	Name	Type / Format	Unit	R/W	Range
00250	% IL1 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00251	% IL2 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00252	% IL3 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00253	% I Total Harmonic Distortion	Word / F2	%	R	0 - 100
00254 00255	I Total Harmonic Distortion magnitude	DWord / F2	A	R	0 - 2000
00256	% VL1 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00257	% VL2 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00258	% VL3 Total Harmonic Distortion	Word / F2	%	R	0 - 100
00259	% V Total Harmonic Distortion	Word / F2	%	R	0 - 100
00260 00261	V Total Harmonic Distortion magnitude	DWord / F2	Vac	R	0 - 3000
00262	IL1 THD Fundamental 0	Word / F2	%	R	0 - 100
00263	IL1 THD Fundamental 1	Word / F2	%	R	0 - 100
00264	IL1 THD Fundamental 2	Word / F2	%	R	0 - 100
00265	IL1 THD Fundamental 3	Word / F2	%	R	0 - 100
00266	IL1 THD Fundamental 4	Word / F2	%	R	0 - 100
00267	IL1 THD Fundamental 5	Word / F2	%	R	0 - 100
00268	IL1 THD Fundamental 6	Word / F2	%	R	0 - 100
00269	IL1 THD Fundamental 7	Word / F2	%	R	0 - 100

Table 3: Total Harmonic Distortion (THD) Actual Values (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00270	IL1 THD Fundamental 8	Word / F2	%	R	0 - 100
00271	IL1 THD Fundamental 9	Word / F2	%	R	0 - 100
00272	IL1 THD Fundamental 10	Word / F2	%	R	0 - 100
00273	IL1 THD Fundamental 11	Word / F2	%	R	0 - 100
00274	IL1 THD Fundamental 12	Word / F2	%	R	0 - 100
00275	IL1 THD Fundamental 13	Word / F2	%	R	0 - 100
00276	IL1 THD Fundamental 14	Word / F2	%	R	0 - 100
00277	IL1 THD Fundamental 15	Word / F2	%	R	0 - 100
00278	IL1 THD Fundamental 16	Word / F2	%	R	0 - 100
00279	IL1 THD Fundamental 17	Word / F2	%	R	0 - 100
00280	IL1 THD Fundamental 18	Word / F2	%	R	0 - 100
00281	IL1 THD Fundamental 19	Word / F2	%	R	0 - 100
00282	IL1 THD Fundamental 20	Word / F2	%	R	0 - 100
00283	IL1 THD Fundamental 21	Word / F2	%	R	0 - 100
00284	IL1 THD Fundamental 22	Word / F2	%	R	0 - 100
00285	IL1 THD Fundamental 23	Word / F2	%	R	0 - 100
00286	IL1 THD Fundamental 24	Word / F2	%	R	0 - 100
00287	IL1 THD Fundamental 25	Word / F2	%	R	0 - 100
00288	IL1 THD Fundamental 26	Word / F2	%	R	0 - 100
00289	IL1 THD Fundamental 27	Word / F2	%	R	0 - 100
00290	IL1 THD Fundamental 28	Word / F2	%	R	0 - 100
00291	IL1 THD Fundamental 29	Word / F2	%	R	0 - 100
00292	IL1 THD Fundamental 30	Word / F2	%	R	0 - 100
00293	IL1 THD Fundamental 31	Word / F2	%	R	0 - 100
00294	IL2 THD Fundamental 0	Word / F2	%	R	0 - 100
00295	IL2 THD Fundamental 1	Word / F2	%	R	0 - 100
00296	IL2 THD Fundamental 2	Word / F2	%	R	0 - 100
00297	IL2 THD Fundamental 3	Word / F2	%	R	0 - 100
00298	IL2 THD Fundamental 4	Word / F2	%	R	0 - 100
00299	IL2 THD Fundamental 5	Word / F2	%	R	0 - 100
00300	IL2 THD Fundamental 6	Word / F2	%	R	0 - 100
00301	IL2 THD Fundamental 7	Word / F2	%	R	0 - 100
00302	IL2 THD Fundamental 8	Word / F2	%	R	0 - 100
00303	IL2 THD Fundamental 9	Word / F2	%	R	0 - 100
00304	IL2 THD Fundamental 10	Word / F2	%	R	0 - 100
00305	IL2 THD Fundamental 11	Word / F2	%	R	0 - 100
00306	IL2 THD Fundamental 12	Word / F2	%	R	0 - 100
00307	IL2 THD Fundamental 13	Word / F2	%	R	0 - 100
00308	IL2 THD Fundamental 14	Word / F2	%	R	0 - 100
00309	IL2 THD Fundamental 15	Word / F2	%	R	0 - 100
00310	IL2 THD Fundamental 16	Word / F2	%	R	0 - 100
00311	IL2 THD Fundamental 17	Word / F2	%	R	0 - 100
00312	IL2 THD Fundamental 18	Word / F2	%	R	0 - 100
00313	IL2 THD Fundamental 19	Word / F2	%	R	0 - 100
00314	IL2 THD Fundamental 20	Word / F2	%	R	0 - 100
00315	IL2 THD Fundamental 21	Word / F2	%	R	0 - 100
00316	IL2 THD Fundamental 22	Word / F2	%	R	0 - 100
00317	IL2 THD Fundamental 23	Word / F2	%	R	0 - 100
00318	IL2 THD Fundamental 24	Word / F2	%	R	0 - 100

Table 3: Total Harmonic Distortion (THD) Actual Values (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00319	IL2 THD Fundamental 25	Word / F2	%	R	0 - 100
00320	IL2 THD Fundamental 26	Word / F2	%	R	0 - 100
00321	IL2 THD Fundamental 27	Word / F2	%	R	0 - 100
00322	IL2 THD Fundamental 28	Word / F2	%	R	0 - 100
00323	IL2 THD Fundamental 29	Word / F2	%	R	0 - 100
00324	IL2 THD Fundamental 30	Word / F2	%	R	0 - 100
00325	IL2 THD Fundamental 31	Word / F2	%	R	0 - 100
00326	IL3 THD Fundamental 0	Word / F2	%	R	0 - 100
00327	IL3 THD Fundamental 1	Word / F2	%	R	0 - 100
00328	IL3 THD Fundamental 2	Word / F2	%	R	0 - 100
00329	IL3 THD Fundamental 3	Word / F2	%	R	0 - 100
00330	IL3 THD Fundamental 4	Word / F2	%	R	0 - 100
00331	IL3 THD Fundamental 5	Word / F2	%	R	0 - 100
00332	IL3 THD Fundamental 6	Word / F2	%	R	0 - 100
00333	IL3 THD Fundamental 7	Word / F2	%	R	0 - 100
00334	IL3 THD Fundamental 8	Word / F2	%	R	0 - 100
00335	IL3 THD Fundamental 9	Word / F2	%	R	0 - 100
00336	IL3 THD Fundamental 10	Word / F2	%	R	0 - 100
00337	IL3 THD Fundamental 11	Word / F2	%	R	0 - 100
00338	IL3 THD Fundamental 12	Word / F2	%	R	0 - 100
00339	IL3 THD Fundamental 13	Word / F2	%	R	0 - 100
00340	IL3 THD Fundamental 14	Word / F2	%	R	0 - 100
00341	IL3 THD Fundamental 15	Word / F2	%	R	0 - 100
00342	IL3 THD Fundamental 16	Word / F2	%	R	0 - 100
00343	IL3 THD Fundamental 17	Word / F2	%	R	0 - 100
00344	IL3 THD Fundamental 18	Word / F2	%	R	0 - 100
00345	IL3 THD Fundamental 19	Word / F2	%	R	0 - 100
00346	IL3 THD Fundamental 20	Word / F2	%	R	0 - 100
00347	IL3 THD Fundamental 21	Word / F2	%	R	0 - 100
00348	IL3 THD Fundamental 22	Word / F2	%	R	0 - 100
00349	IL3 THD Fundamental 23	Word / F2	%	R	0 - 100
00350	IL3 THD Fundamental 24	Word / F2	%	R	0 - 100
00351	IL3 THD Fundamental 25	Word / F2	%	R	0 - 100
00352	IL3 THD Fundamental 26	Word / F2	%	R	0 - 100
00353	IL3 THD Fundamental 27	Word / F2	%	R	0 - 100
00354	IL3 THD Fundamental 28	Word / F2	%	R	0 - 100
00355	IL3 THD Fundamental 29	Word / F2	%	R	0 - 100
00356	IL3 THD Fundamental 30	Word / F2	%	R	0 - 100
00357	IL3 THD Fundamental 31	Word / F2	%	R	0 - 100
00358	VL1 THD Fundamental 0	Word / F2	%	R	0 - 100
00359	VL1 THD Fundamental 1	Word / F2	%	R	0 - 100
00360	VL1 THD Fundamental 2	Word / F2	%	R	0 - 100
00361	VL1 THD Fundamental 3	Word / F2	%	R	0 - 100
00362	VL1 THD Fundamental 4	Word / F2	%	R	0 - 100
00363	VL1 THD Fundamental 5	Word / F2	%	R	0 - 100
00364	VL1 THD Fundamental 6	Word / F2	%	R	0 - 100
00365	VL1 THD Fundamental 7	Word / F2	%	R	0 - 100
00366	VL1 THD Fundamental 8	Word / F2	%	R	0 - 100
00367	VL1 THD Fundamental 9	Word / F2	%	R	0 - 100
00368	VL1 THD Fundamental 10	Word / F2	%	R	0 - 100

Table 3: Total Harmonic Distortion (THD) Actual Values (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00369	VL1 THD Fundamental 11	Word / F2	%	R	0 - 100
00370	VL1 THD Fundamental 12	Word / F2	%	R	0 - 100
00371	VL1 THD Fundamental 13	Word / F2	%	R	0 - 100
00372	VL1 THD Fundamental 14	Word / F2	%	R	0 - 100
00373	VL1 THD Fundamental 15	Word / F2	%	R	0 - 100
00374	VL1 THD Fundamental 16	Word / F2	%	R	0 - 100
00375	VL1 THD Fundamental 17	Word / F2	%	R	0 - 100
00376	VL1 THD Fundamental 18	Word / F2	%	R	0 - 100
00377	VL1 THD Fundamental 19	Word / F2	%	R	0 - 100
00378	VL1 THD Fundamental 20	Word / F2	%	R	0 - 100
00379	VL1 THD Fundamental 21	Word / F2	%	R	0 - 100
00380	VL1 THD Fundamental 22	Word / F2	%	R	0 - 100
00381	VL1 THD Fundamental 23	Word / F2	%	R	0 - 100
00382	VL1 THD Fundamental 24	Word / F2	%	R	0 - 100
00383	VL1 THD Fundamental 25	Word / F2	%	R	0 - 100
00384	VL1 THD Fundamental 26	Word / F2	%	R	0 - 100
00385	VL1 THD Fundamental 27	Word / F2	%	R	0 - 100
00386	VL1 THD Fundamental 28	Word / F2	%	R	0 - 100
00387	VL1 THD Fundamental 29	Word / F2	%	R	0 - 100
00388	VL1 THD Fundamental 30	Word / F2	%	R	0 - 100
00389	VL1 THD Fundamental 31	Word / F2	%	R	0 - 100
00390	VL2 THD Fundamental 0	Word / F2	%	R	0 - 100
00391	VL2 THD Fundamental 1	Word / F2	%	R	0 - 100
00392	VL2 THD Fundamental 2	Word / F2	%	R	0 - 100
00393	VL2 THD Fundamental 3	Word / F2	%	R	0 - 100
00394	VL2 THD Fundamental 4	Word / F2	%	R	0 - 100
00395	VL2 THD Fundamental 5	Word / F2	%	R	0 - 100
00396	VL2 THD Fundamental 6	Word / F2	%	R	0 - 100
00397	VL2 THD Fundamental 7	Word / F2	%	R	0 - 100
00398	VL2 THD Fundamental 8	Word / F2	%	R	0 - 100
00399	VL2 THD Fundamental 9	Word / F2	%	R	0 - 100
00400	VL2 THD Fundamental 10	Word / F2	%	R	0 - 100
00401	VL2 THD Fundamental 11	Word / F2	%	R	0 - 100
00402	VL2 THD Fundamental 12	Word / F2	%	R	0 - 100
00403	VL2 THD Fundamental 13	Word / F2	%	R	0 - 100
00404	VL2 THD Fundamental 14	Word / F2	%	R	0 - 100
00405	VL2 THD Fundamental 15	Word / F2	%	R	0 - 100
00406	VL2 THD Fundamental 16	Word / F2	%	R	0 - 100
00407	VL2 THD Fundamental 17	Word / F2	%	R	0 - 100
00408	VL2 THD Fundamental 18	Word / F2	%	R	0 - 100
00409	VL2 THD Fundamental 19	Word / F2	%	R	0 - 100
00410	VL2 THD Fundamental 20	Word / F2	%	R	0 - 100
00411	VL2 THD Fundamental 21	Word / F2	%	R	0 - 100
00412	VL2 THD Fundamental 22	Word / F2	%	R	0 - 100
00413	VL2 THD Fundamental 23	Word / F2	%	R	0 - 100
00414	VL2 THD Fundamental 24	Word / F2	%	R	0 - 100
00415	VL2 THD Fundamental 25	Word / F2	%	R	0 - 100
00416	VL2 THD Fundamental 26	Word / F2	%	R	0 - 100
00417	VL2 THD Fundamental 27	Word / F2	%	R	0 - 100
00418	VL2 THD Fundamental 28	Word / F2	%	R	0 - 100

Table 3: Total Harmonic Distortion (THD) Actual Values (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00419	VL2 THD Fundamental 29	Word / F2	%	R	0 - 100
00420	VL2 THD Fundamental 30	Word / F2	%	R	0 - 100
00421	VL2 THD Fundamental 31	Word / F2	%	R	0 - 100
00422	VL3 THD Fundamental 0	Word / F2	%	R	0 - 100
00423	VL3 THD Fundamental 1	Word / F2	%	R	0 - 100
00424	VL3 THD Fundamental 2	Word / F2	%	R	0 - 100
00425	VL3 THD Fundamental 3	Word / F2	%	R	0 - 100
00426	VL3 THD Fundamental 4	Word / F2	%	R	0 - 100
00427	VL3 THD Fundamental 5	Word / F2	%	R	0 - 100
00428	VL3 THD Fundamental 6	Word / F2	%	R	0 - 100
00429	VL3 THD Fundamental 7	Word / F2	%	R	0 - 100
00430	VL3 THD Fundamental 8	Word / F2	%	R	0 - 100
00431	VL3 THD Fundamental 9	Word / F2	%	R	0 - 100
00432	VL3 THD Fundamental 10	Word / F2	%	R	0 - 100
00433	VL3 THD Fundamental 11	Word / F2	%	R	0 - 100
00434	VL3 THD Fundamental 12	Word / F2	%	R	0 - 100
00435	VL3 THD Fundamental 13	Word / F2	%	R	0 - 100
00436	VL3 THD Fundamental 14	Word / F2	%	R	0 - 100
00437	VL3 THD Fundamental 15	Word / F2	%	R	0 - 100
00438	VL3 THD Fundamental 16	Word / F2	%	R	0 - 100
00439	VL3 THD Fundamental 17	Word / F2	%	R	0 - 100
00440	VL3 THD Fundamental 18	Word / F2	%	R	0 - 100
00441	VL3 THD Fundamental 19	Word / F2	%	R	0 - 100
00442	VL3 THD Fundamental 20	Word / F2	%	R	0 - 100
00443	VL3 THD Fundamental 21	Word / F2	%	R	0 - 100
00444	VL3 THD Fundamental 22	Word / F2	%	R	0 - 100
00445	VL3 THD Fundamental 23	Word / F2	%	R	0 - 100
00446	VL3 THD Fundamental 24	Word / F2	%	R	0 - 100
00447	VL3 THD Fundamental 25	Word / F2	%	R	0 - 100
00448	VL3 THD Fundamental 26	Word / F2	%	R	0 - 100
00449	VL3 THD Fundamental 27	Word / F2	%	R	0 - 100
00450	VL3 THD Fundamental 28	Word / F2	%	R	0 - 100
00451	VL3 THD Fundamental 29	Word / F2	%	R	0 - 100
00452	VL3 THD Fundamental 30	Word / F2	%	R	0 - 100
00453	VL3 THD Fundamental 31	Word / F2	%	R	0 - 100

6.5 General Settings

To Write to General Settings, password 0xA55A must be written to register 600.

Table 4: General Settings

Addr	Name	Type / Format	Unit	R/W	Range
00600	Settings Password (0xA55A)	Word / F2		R/W	
00601	% Max. Load Current (MLC 1)	Word / F2	%	R/W	10 - 100
00602	% Max. Load Current (MLC 2)	Word / F2	%	R/W	10 - 100
00603	MEprotect CT model 0 = CTMB 1 1 = CTMB 5 2 = CTMB 25 3 = CTMB 50 4 = CTMB 100 5 = CTMB 300	Word / F37		R/W	0 - 5
00604	Current transformer secondary (1 – 9 Amps)	Word / F2		R/W	1 - 9
00605	Current transformer primary (1 – 10000 Amps)	Word / F2		R/W	1 - 10000
00606	Thermal class curve 01 Trip Time (x 0.1sec / Curve Time Multiplier)	Word / F2	x 0.1sec	R/W	1 - 450
00607	Thermal class curve 02 Trip Time (x 0.1sec / Curve Time Multiplier)	Word / F2	x 0.1sec	R/W	1 - 450
00608	Thermal model 0 = IEC 60255-08 Machine I2T. 1 = DEFT 2 = IEC NINV 3 = IEC VINV 4 = IEC LINV 5 = IEC EINV 6 = ANSI MINV 7 = ANSI VINV 8 = ANSI EINV 9 = Thermal flat 10 = IT 11 = I2T 12 = I4T	Word / F54		R/W	0 - 12
00609	Reset type for thermal model . 0 = Manual. 1 = Instantaneous 2 = Delayed 3 = Curve	Word / F73		R/W	0 - 3
00610	Thermal class curve 01 Reset Time (x 0.1) When Reset Type (00609) is selected Delayed (2).	Word / F2	x 0.1sec	R/W	1 - 30000
00611	Thermal class curve 02 Reset Time (x 0.1) When Reset Type (00609) is selected Delayed (2).	Word / F2	x 0.1sec	R/W	1 - 30000
00612	% Thermal Capacity (TC) reset threshold	Word / F4	%	R/W	0 - 100
00613	Current unbalance trip delay	Word / F2	sec	R/W	1 - 250
00614	% Current unbalance trip level	Word / F2	%	R/W	5 - 50
00615	I negative sequence trip delay	Word / F2	sec	R/W	1 - 250
00616	% I negative sequence trip level	Word / F2	%	R/W	10 - 90
00617	% High high short circuit trip level	Word / F2	%	R/W	600 - 1200

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00618	High high short circuit trip delay	Word / F2	ms	R/W	30 - 300
00619	% High short circuit trip level	Word / F2	%	R/W	200 - 1200
00620	High short circuit trip delay	Word / F2	ms	R/W	100 - 2500
00621	Neutral over current trip delay	Word / F4	X 0.1sec	R/W	0 - 400
00622	Neutral over current trip level	Byte / F1	%	R/W	10 - 90
	Neutral trip type curve	Byte / F54		R/W	0 - 12
	0 = IEC 60255-08 Machine I2T.				
	1 = DEFT				
	2 = IEC NINV				
	3 = IEC VINV				
	4 = IEC LINV				
	5 = IEC EINV				
	6 = ANSI MINV				
	7 = ANSI VINV				
	8 = ANSI EINV				
	9 = Thermal flat				
	10 = IT				
	11 = I2T				
	12 = I4T				
00623	Reserved.	Word / F2		R/W	
00624	Reserved.	Word / F2		R/W	
00625	Reserved.	Word / F2		R/W	
00626	Reserved.	Word / F2		R/W	
00627	Reserved.	Word / F2		R/W	
00628	Reserved.	Word / F2		R/W	
00629	Reserved.	Word / F2		R/W	
00630	Reserved.	Word / F2		R/W	
00631	Reserved.	Word / F2		R/W	
00632	Reserved.	Word / F2		R/W	
00633	Reserved.	Word / F2		R/W	
00634	Reserved.	Word / F2		R/W	
00635	Reserved.	Word / F2		R/W	
00636	Reserved.	Word / F2		R/W	
00637	Reserved.	Word / F2		R/W	
00638	Reserved.	Word / F2		R/W	
00639	Reserved.	Word / F2		R/W	
00640	Reserved.	Word / F2		R/W	
00641	Reserved.	Word / F2		R/W	
00642	Reserved.	Word / F2		R/W	
00643	Reserved.	Word / F2		R/W	
00644	Voltage line input	Word / F2	V	R/W	10 - 11000
00645	Voltage line primary ratio	Word / F2	V	R/W	10 - 11000
00646	Voltage secondary ratio	Word / F2	V	R/W	1 - 220
00647	Line voltage frequency selection .	Word / F2		R/W	0 - 1
	0 = 50 Hz.				
	1 = 60 Hz.				
00648	Frequency lower limit	Word / F2	Hz	R/W	30 - 60
00649	Frequency higher limit	Word / F2	Hz	R/W	40 - 80
00650	% Undervoltage trip level	Word / F2	%	R/W	1 - 25

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00651	% Overvoltage trip level	Word / F2	%	R/W	1 - 25
00652	% Voltage symmetry trip level	Word / F2	%	R/W	60 - 90
00653	Voltage symmetry delay	Word / F2	sec	R/W	1 - 10
00654	V negative sequence trip delay	Word / F2	sec	R/W	0 - 250
00655	% V negative sequence trip level	Word / F2	%	R/W	10 - 90
00656	Volts/Hz min trip level (x 0.1)	Word / F2	x 0.1 V/Hz	R/W	1 - 4000
00657	Volts/Hz max trip level (x 0.1)	Word / F2	x 0.1 V/Hz	R/W	1 - 4000
00658	Volts/Hz min trip delay	Word / F2	sec	R/W	1 - 10
00659	Volts/Hz max trip delay	Word / F2	sec	R/W	1 - 10
00660	Rate of freq change trip level	Word / F2		R/W	1 - 10
00661	Rate of freq change trip delay	Word / F2		R/W	1 - 10
00662	Rate of freq. change measurement type 0 = Positive incline. 1 = Negative incline. 2 = Absolute.	Word / F2		R/W	0 - 2
00663	Rate of freq. change sample interval (x 0.1)	Word / F2	x 0.1sec	R/W	1 - 100
00664	Reserved.	Word / F2		R/W	
00665	Reserved.	Word / F2		R/W	
00666	Reserved.	Word / F2		R/W	
00667	Reserved.	Word / F2		R/W	
00668	Reserved.	Word / F2		R/W	
00669	Reserved.	Word / F2		R/W	
00670	Reserved.	Word / F2		R/W	
00671	Reserved.	Word / F2		R/W	
00672	Reserved.	Word / F2		R/W	
00673	Reserved.	Word / F2		R/W	
00674	Reserved.	Word / F2		R/W	
00675	Reserved.	Word / F2		R/W	
00676	Reserved.	Word / F2		R/W	
00677	Reserved.	Word / F2		R/W	
00678	Reserved.	Word / F2		R/W	
00679	Reserved.	Word / F2		R/W	
00680	Reserved.	Word / F2		R/W	
00681	Reserved.	Word / F2		R/W	
00682	Reserved.	Word / F2		R/W	
00683	Reserved.	Word / F2		R/W	
00684	Reserved.	Word / F2		R/W	
00685	Reserved.	Word / F2		R/W	
00686	Reserved.	Word / F2		R/W	
00687	Loss of power trip delay	Word /F2	Sec	R/W	1 - 10
00688	Auxillary voltage trip time	Word / F2	sec	R/W	1 - 250
00689	% Auxillary voltage min. trip level	Word / F2	%	R/W	5 - 25
00690	% Auxillary voltage max. trip level	Word / F2	%	R/W	5 - 25
00691	Min. load trip delay	Word / F2	sec	R/W	1 - 200
00692	% Min. load trip level	Word / F2	%	R/W	10 - 90
00693	% Min. load power trip level	Word / F2	%	R/W	10 - 90
00694	Min. load start-up trip delay	Word / F2	sec	R/W	0 - 200
00695	Min. load reset time (0 = No auto reset)	Word / F2	sec	R/W	0 - 65000
00696	Runnings stall start up delay time	Word / F2	sec	R/W	0 - 200
00697	% Running stall trip level	Word / F2	%	R/W	110 - 300

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00698	Running stall trip delay	Word / F2	ms	R/W	100 - 2000
00699	Earth leakage trip type on CBCT01 0 = Instantaneous 1 = IDMT 2 = IEC NINV 3 = IEC VINV 4 = IEC LINV 5 = IEC EINV 6 = ANSI MINV 7 = ANSI VINV 8 = ANSI EINV 9 = Thermal flat 10 = IT 11 = I2T 12 = I4T	Word / F52		R/W	0 - 12
00700	Earth leakage reset type on CBCT01 0 = Manual 1 = Instantaneous 2 = Timed 3 = Curve	Word / F75		R/W	0 - 3
00701	Earth leakage trip level on CBCT01	Word / F2	mA	R/W	30 - 1500
00702	Earth leakage trip delay on CBCT01	Word / F2	ms	R/W	100 - 1000
00703	Earth leakage reset delay on CBCT01	Word / F2	ms	R/W	100 - 2000
00704	Reserved.	Word / F2		R/W	
00705	Reserved.	Word / F2		R/W	
00706	Reserved.	Word / F2		R/W	
00707	Reserved.	Word / F2		R/W	
00708	Reserved.	Word / F2		R/W	
00709	Zero sequence trip type 0 = Instantaneous 1 = IDMT 2 = IEC NINV 3 = IEC VINV 4 = IEC LINV 5 = IEC EINV 6 = ANSI MINV 7 = ANSI VINV 8 = ANSI EINV 9 = Thermal flat 10 = IT 11 = I2T 12 = I4T	Word / F52		R/W	0 - 12
00710	Zero sequence reset type 0 = Manual 1 = Instantaneous 2 = Timed 3 = Curve	Word / F75		R/W	0 - 2
00711	Zero sequence trip level	Word / F2	mA	R/W	20 - 100
00712	Zero sequence trip delay	Word / F2	ms	R/W	100 - 1000
00713	Zero sequence reset delay	Word / F2	ms	R/W	100 - 2000
00714	Reserved.	Word / F2		R/W	

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00715	Reserved.	Word / F2		R/W	
00716	Reserved.	Word / F2		R/W	
00717	Reserved.	Word / F2		R/W	
00718	Reserved.	Word / F2	ms	R/W	100 - 2000
00719	Earth detect trip level	Word / F2	kOhm	R/W	10 – 50
00720	Earth detect trip delay	Word / F2	Sec	R/W	1 - 10
00721	% Sub-Fundamental current warning level	Word / F2	%	R/W	10 - 100
00722	% Fundamental 1 current warning level	Word / F2	%	R/W	10 - 100
00723	% 2nd Harmonic current warning level	Word / F2	%	R/W	10 - 100
00724	% 3rd Harmonics current warning level	Word / F2	%	R/W	10 - 100
00725	% 4th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00726	% 5th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00727	% 6th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00728	% 7th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00729	% 8th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00730	% 9th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00731	% 10th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00732	% 11th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00733	% 12th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00734	% 13th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00735	% 14th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00736	% 15th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00737	% 16th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00738	% 17th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00739	% 18th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00740	% 19th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00741	% 20th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00742	% 21st Harmonics current warning level	Word / F2	%	R/W	10 - 100
00743	% 22nd Harmonics current warning level	Word / F2	%	R/W	10 - 100
00744	% 23rd Harmonics current warning level	Word / F2	%	R/W	10 - 100
00745	% 24th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00746	% 25th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00747	% 26th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00748	% 27th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00749	% 28th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00750	% 29th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00751	% 30th Harmonics current warning level	Word / F2	%	R/W	10 - 100
00752	% 31st Harmonics current warning level	Word / F2	%	R/W	10 - 100
00753	% Sub-Fundamental Voltage warning level	Word / F2	%	R/W	10 - 100
00754	% Fundamental 1 Voltage warning level	Word / F2	%	R/W	10 - 100
00755	% 2nd Harmonic Voltage warning level	Word / F2	%	R/W	10 - 100
00756	% 3rd Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00757	% 4th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00758	% 5th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00759	% 6th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00760	% 7th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00761	% 8th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00762	% 9th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00763	% 10th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00764	% 11th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00765	% 12th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00766	% 13th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00767	% 14th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00768	% 15th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00769	% 16th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00770	% 17th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00771	% 18th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00772	% 19th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00773	% 20th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00774	% 21st Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00775	% 22nd Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00776	% 23rd Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00777	% 24th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00778	% 25th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00779	% 26th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00780	% 27th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00781	% 28th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00782	% 29th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00783	% 30th Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00784	% 31st Harmonics Voltage warning level	Word / F2	%	R/W	10 - 100
00785	% THD warning level current	Word / F2	%	R/W	10 - 100
00786	% THD warning level voltage	Word / F2	%	R/W	10 - 100
00787	% THD trip level current	Word / F2	%	R/W	10 - 100
00788	% THD trip level voltage	Word / F2	%	R/W	10 - 100
00789	THD current trip time	Word / F2	sec	R/W	0 - 3600
00790	THD voltage trip time	Word / F2	sec	R/W	0 - 3600
00791 00792	THD magnitude current trip level	DWord / F9	A	R/W	1 - 500000
00793	THD magnitude current trip delay	Word / F2	sec	R/W	3 - 3600
00794 00795	THD magnitude voltage trip level	DWord / F9	Vac	R/W	1 - 500000
00796	THD magnitude voltage trip delay	Word / F2	sec	R/W	0 - 3600
00797	Main contactor trip coil continuous. Differential Field Input required (IO Expander, Field Input 8 – 15)	Word / F69		R/W	0 – 65535
00798	Main Contactor monitor trip time (x 0.1)	Word / F2	x 0.1sec	R/W	0 – 100
00799	Breaker trip coil continuous. Differential Field Input required (IO Expander, Field Input 8 – 15)	Word / F69		R/W	0 – 65535
00800	Breaker monitor trip time (x 0.1)	Word / F2	x 0.1sec	R/W	0 - 100
00801	Breaker wear max. number of normal loaded operations	Word / F2		R/W	0 - 200000
00802		Word / F2		R/W	
00803	Breaker wear max. amps for normal operation	Word / F2	A	R/W	0 – 65534
00804	Breaker wear max. number of operations at rupture amps	Word / F2		R/W	0 – 65534
00805 00806	Breaker wear max amps for rupture level	DWord / F2	A	R/W	0 – 20000
00807	Breaker wear warning and alarm operations remaining counts.	Word / F2		R/W	0 – 65534
00808	Breaker wear trip operation remaining counts	Word / F2		R/W	0 – 65534

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00809	Breaker auxiliary output type	Word / F2		R/W	0 - 3
00810	Breaker NO auxilary contact input.	Word / F69		R/W	0 – 65535
00811	Breaker NC auxilary contact input.	Word / F69		R/W	0 – 65535
00812	Slow Breaker clear limit.	Word / F2	ms	R/W	0 - 65535
00813	Slow Main Contactor clear limit.	Word / F2	ms	R/W	0 - 65535
00814	Speed switch 01 input.	Word / F74		R/W	0 – 65535
00815	Speed switch type 01	Word / F2		R/W	0-1
00816	Speed switch 02 input.	Word / F74		R/W	0 – 65535
00817	Speed switch type 02	Word / F2		R/W	0-1
00818	Speed switch 01 running or standstill trip time	Word / F2	ms	R/W	100-2000
00819	Speed switch 02 running or standstill trip time	Word / F2	ms	R/W	100-2000
00820	Speed input 01.	Word / F2		R/W	0 – 65535
00821	Speed input 01 Pulse Per Revolution (PPR)	Word / F2		R/W	1 - 40
00822	Speed trip time 01. (x 0.1)	Word / F2	x 0.1sec	R/W	1 -65000
00823	Overspeed switch 01 RPM	Word / F2	RPM	R/W	200-65000
00824	Underspeed switch 01 RPM	Word / F2	RPM	R/W	1 -65000
00825	Speed input 02	Word / F2		R/W	0 – 65535
00826	Speed input 02 Pulse Per Revolution (PPR)	Word / F2		R/W	1 - 40
00827	Speed trip time 02. (x 0.1)	Word / F2	x 0.1sec	R/W	1 -65000
00828	Overspeed switch 02 RPM	Word / F2	RPM	R/W	200 -65000
00829	Underspeed switch 02 RPM	Word / F2	RPM	R/W	1 -65000
00830	Speed 4 - 20mA input channel 01 (x 0.1)	Word / F72		R/W	0 - 250
00831	Speed 4 - 20mA trip time 01 (x 0.1)	Word / F2	x 0.1sec	R/W	1 -65000
00832	Overspeed 4 - 20mA RPM Channel 01 (x 0.1)	Word / F2	x 0.1mA	R/W	1 - 250
00833	Underspeed 4 - 20mA RPM Channel 01(x 0.1)	Word / F2	x 0.1mA	R/W	1 - 250
00834	Speed 4 - 20mA input channel 02	Word / F72		R/W	0 - 250
00835	Speed 4 - 20mA trip time Channel 02 (x 0.1)	Word / F2	x 0.1sec	R/W	1 -65000
00836	Overspeed 4 - 20mA RPM Channel 02 (x 0.1)	Word / F2	x 0.1mA	R/W	1 - 250
00837	Underspeed 4 - 20mA RPM Channel 02 (x 0.1)	Word / F2	x 0.1mA	R/W	1 - 250
00838	Phase Angle Selection of the source. ANSI 78 0 = Current to current phase. 1 = Voltage to voltage phase. 2 = Current to voltage.	Word / F53		R/W	0 - 2
00839	Angle trip level degrees (30 – 120 degrees) ANSI 78	Word / F2	Degr.	R/W	1 - 180
00840	Angle trip delay (1 – 10 sec)	Word / F2	sec	R/W	1 - 10
00841	Power factor limit trip level (x 0.01)	Word / F2	x 0.01 CosPi	R/W	1 – 100
00842	Power factor limit reset level (x 0.01)	Word / F2	x 0.01 CosPi	R/W	1 – 100
00843	Power factor limit trip time	Word / F2	sec	R/W	0 - 300
00844	Power factor limit reset time	Word / F2	sec	R/W	0 - 300
00845	Apparent power trip level	Word / F2	VA	R/W	10-10000
00846	Apparent power reset level	Word / F2	VA	R/W	10-10000
00847	Apparent power limit trip time	Word / F2	sec	R/W	0 - 300
00848	Apparent power limit reset time	Word / F2	sec	R/W	0 - 300
00849	Ext. configurable trip 01	Word / F69		R/W	0 - 65535
00850	Ext. configurable trip 02	Word / F69		R/W	0 - 65535
00851	Ext. configurable trip 03	Word / F69		R/W	0 - 65535
00852	Ext. configurable trip 04	Word / F69		R/W	0 - 65535
00853	Ext. configurable trip 01 delay	Word / F2	sec	R/W	0 - 254
00854	Ext. configurable trip 02 delay	Word / F2	sec	R/W	0 - 254
00855	Ext. configurable trip 03 delay	Word / F2	sec	R/W	0 - 254

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00856	Ext. configurable trip 04 delay	Word / F2	sec	R/W	0 - 254
00857	Ext. reset input	Word / F69		R/W	0 - 65535
00858	Ext. configurable reset mask 00	Word / F25		R/W	0 - 65535
00859	Ext. configurable reset mask 01	Word / F26		R/W	0 - 65535
00860	Ext. configurable reset mask 02	Word / F27		R/W	0 - 65535
00861	Ext. configurable reset mask 03	Word / F28		R/W	0 - 65535
00862	Ext. configurable reset mask 04	Word / F29		R/W	0 - 65535
00863	Ext. configurable reset mask 05	Word / F20		R/W	0 - 65535
00864	Ext. configurable reset mask 06	Word / F31		R/W	0 - 65535
00865	Ext. configurable reset mask 07	Word / F32		R/W	0 - 65535
00866	Ext. configurable reset mask 08	Word / F33		R/W	0 - 65535
00867	Ext. configurable reset mask 09	Word / F34		R/W	0 - 65535
00868	Ext. configurable reset mask 10	Word / F35		R/W	0 - 65535
00869	Ext. configurable reset mask 11	Word / F36		R/W	0 - 65535
00870	Control word modules 00 b00 = Reserved. b01 = IO expander connected. b02 = MMI connected. b03 = 4 - 20mAconnected. b04 = RTD 04 channel connected. b05 = RTD 08 channel connected. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F55		R	0 - 63553
00871	Control word features 00 b00 = Auto calculate Thermal Capacity (TC) reset threshold.(100 - max. TC used in last 10 starts) b01 = Auto thermal reset enabled. b02 = Min. load source 0 = current or 1 = power . b03 = Reserved. b04 = Relay 1 fail safe enabled. (Relay 1 must be set as dedicated trip relay). b05 = Relay 1 configured as dedicated trip relay. b06 = Voltage phase 01 rotation direction. 0 = L1-2-3, 1 = L3-2-1. b07 = Voltage phase 02 rotation direction. 0 = L1-2-3, 1 = L3-2-1. b08 = Power factor limit auto reset. b09 = Power factor limit leading or lagging trip. b10 = Power factor limit auto reset leading or lagging. b11 = Apparent power limit auto reset. b12 = Apparent power limit leading or lagging trip. b13 = Apparent power limit auto reset leading or lagging. b14 = Demand window 0 = sliding or 1 = fixed. b15 = Reserved.	Word / F56		R	0 - 65535

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00872	Control word features 01 b00 = Ext. configurable trip 01 active high. b01 = Ext. configurable trip 02 active high. b02 = Ext. configurable trip 03 active high. b03 = Ext. configurable trip 04 active high. b04 = Reserved. b05 = Reserved. b06 = Warning without load b07 = Trip without load b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F57		R	0 - 65535
00873	Control word warnings enabled 00 b00 = Current unbalance . b01 = Single phase . b02 = Positive sequence . b03 = I Negative sequence . b04 = I Zero sequence . b05 = Neutral over current . b06 = THD magnitude current. b07 = Min. load . b08 = High high short circuit. b09 = Running stall. b10 = % THD current. b11 = Vectorial stall, rate of change of Power Factor during start up low. b12 = Unauthorized current. b13 = Differential current. b14 = Phase angle. b15 = High short circuit.	Word / F58		R	0 - 65535
00874	Control word warnings enabled 01 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Watt demand. b08 = VAr demand. b09 = VA demand. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F59		R	0 - 65535

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00875	Control word warnings enabled 02 b00 = Overvoltage . b01 = Undervoltage . b02 = Voltage symmetry . b03 = Voltage low frequency . b04 = Voltage high frequency . b05 = Min. Volts/Hz . b06 = Max. Volts/Hz . b07 = Rate of frequency change . b08 = Voltage phase rotation. b09 = Voltage positive sequence . b10 = Voltage negative sequence . b11 = Voltage zero sequence . b12 = % THD voltage . b13 = THD magnitude voltage . b14 = Differential voltage. b15 = Reserved.	Word / F60		R	0 - 65535
00876	Control word warnings enabled 03 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Voltage not present. b12 = Reserved. b13 = Directional active power. b14 = Directional reactive power. b15 = Reserved.	Word / F61		R	0 - 65535
00877	Control word warnings enabled 04 b00 = Auxiliary undervoltage. b01 = Auxiliary overvoltage. b02 = Earth leakage and earth fault. b03 = Insulation lockout. b04 = Reserved. b05 = Earth detector. b06 = Apparent power limit . b07 = Reserved. b08 = Power factor limit . b09 = Protection ANSI 50/27. b10 = Reserved. b11 = Reserved. b12 = 4 - 20mA input 1 high low. b13 = 4 - 20mA input 2 high low. b14 = 4 - 20mA output 1 high low. b15 = 4 - 20mA output 2 high low.	Word / F62		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00878	Control word warnings enabled 05 b00 = Speed switch 01 running or standstill. b01 = Speed switch 02 running or standstill. b02 = Overspeed pulse count high 01. b03 = Underspeed pulse count low 01. b04 = Overspeed pulse count high 02. b05 = Underspeed pulse count low 02. b06 = Overspeed 4-20mA input on Ch 01. b07 = Underspeed 4-20mA input on Ch 01. b08 = Overspeed 4-20mA input on Ch 02. b09 = Underspeed 4-20mA input on Ch 02. b10 = Main Contactor Trip monitor. b11 = Breaker monitor. b12 = Breaker wear. b13 = Starts per hour. b14 = Reserved. b15 = Reserved.	Word/ F63		R	0 – 65535
00879	Control word warnings enabled 06 b00 = RTD 1 Short Circuit trip. b01 = RTD 1 temperature low trip. b02 = RTD 1 temperature high trip. b03 = RTD 1 Open Circuit trip. b04 = RTD 2 Short Circuit trip. b05 = RTD 2 temperature low trip. b06 = RTD 2 temperature high trip. b07 = RTD 2 Open Circuit trip. b08 = RTD 3 Short Circuit trip. b09 = RTD 3 temperature low trip. b10 = RTD 3 temperature high trip. b11 = RTD 3 Open Circuit trip. b12 = RTD 4 Short Circuit trip. b13 = RTD 4 temperature low trip. b14 = RTD 4 temperature high trip. b15 = RTD 4 Open Circuit trip.	Word / F64		R	0 - 65535
00880	Control word warnings enabled 07 b00 = RTD 5 Short Circuit trip. b01 = RTD 5 temperature low trip. b02 = RTD 5 temperature high trip. b03 = RTD 5 Open Circuit trip. b04 = RTD 6 Short Circuit trip. b05 = RTD 6 temperature low trip. b06 = RTD 6 temperature high trip. b07 = RTD 6 Open Circuit trip. b08 = RTD 7 Short Circuit trip. b09 = RTD 7 temperature low trip. b10 = RTD 7 temperature high trip. b11 = RTD 7 Open Circuit trip. b12 = RTD 8 Short Circuit trip. b13 = RTD 8 temperature low trip. b14 = RTD 8 temperature high trip. b15 = RTD 8 Open Circuit trip.	Word / F65		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00881	Control word warnings enabled 08 b00 = RTD 9 Short Circuit trip. b01 = RTD 9 temperature low trip. b02 = RTD 9 temperature high trip. b03 = RTD 9 Open Circuit trip. b04 = RTD 10 Short Circuit trip. b05 = RTD 10 temperature low trip. b06 = RTD 10 temperature high trip. b07 = RTD 10 Open Circuit trip. b08 = RTD 11 Short Circuit trip. b09 = RTD 11 temperature low trip. b10 = RTD 11 temperature high trip. b11 = RTD 11 Open Circuit trip. b12 = RTD 12 Short Circuit trip. b13 = RTD 12 temperature low trip. b14 = RTD 12 temperature high trip. b15 = RTD 12 Open Circuit trip.	Word / F66		R	0 - 65535
00882	Control word warnings enabled 09 b00 = Ext. configurable trip 01. b01 = Ext. configurable trip 02. b02 = Ext. configurable trip 03. b03 = Ext. configurable trip 04. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F67		R	0 - 65535
00883	Control word warnings enabled 10 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F68		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00884	Control word trips enabled 00 b00 = Current unbalance . b01 = Single phase . b02 = I Positive sequence . b03 = I Negative sequence . b04 = I Zero sequence . b05 = Neutral over current . b06 = THD magnitude current. b07 = Min. load . b08 = High high short circuit. b09 = Running stall. b10 = % THD current. b11 = Vectorial stall, rate of change of Power Factor.during start up low. b12 = Unauthorized current. b13 = Differential current. b14 = Phase angle. b15 = High short circuit.	Word / F58		R	0 - 65535
00885	Control word trips enabled 01 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Watt demand. b08 = VAr demand. b09 = VA demand. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F59		R	0 - 65535
00886	Control word trips enabled 02 b00 = Overvoltage . b01 = Undervoltage . b02 = Voltage symmetry . b03 = Voltage low frequency . b04 = Voltage high frequency . b05 = Min. Volts/Hz . b06 = Max. Volts/Hz . b07 = Rate of frequency change . b08 = Voltage phase rotation. b09 = Voltage positive sequence . b10 = Voltage negative sequence . b11 = Voltage zero sequence . b12 = THD % voltage . b13 = THD magnitude voltage . b14 = Differential voltage. b15 = Reserved.	Word / F60		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00887	Control word trips enabled 03 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Voltage not present. b12 = Reserved. b13 = Forward Directional active power. b14 = Forward Directional reactive power. b15 = Reserved.	Word / F61		R	0 - 65535
00888	Control word trips enabled 04 b00 = Auxiliary undervoltage. b01 = Auxiliary overvoltage. b02 = Earth leakage and earth fault. b03 = Insulation lockout. b04 = Reserved. b05 = Earth detector. b06 = Apparent power limit . b07 = Reserved. b08 = Reserved. b09 = Protection ANSI 50/27. b10 = Reserved. b11 = Reserved. b12 = 4 - 20mA input 1 high low. b13 = 4 - 20mA input 2 high low. b14 = 4 - 20mA output 1 high low. b15 = 4 - 20mA output 2 high low.	Word / F62		R	0 - 65535
00889	Control word trips enabled 05 b00 = Speed switch 01 running or standstill. b01 = Speed switch 02 running or standstill. b02 = Overspeed pulse count high 01. b03 = Underspeed pulse count low 01. b04 = Overspeed pulse count high 02. b05 = Underspeed pulse count low 02. b06 = Overspeed 4-20mA input on Ch 01. b07 = Underspeed 4-20mA input on Ch 01. b08 = Overspeed 4-20mA input on Ch 02. b09 = Underspeed 4-20mA input on Ch 02. b10 = Main Contactor Trip monitor enabled. b11 = Breaker Fail monitor enabled. b12 = Breaker wear. b13 = Starts per hour. b14 = Reserved. b15 = Reserved.	Word / F63		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00890	Control word trips enabled 06 b00 = RTD 1 Short Circuit trip. b01 = RTD 1 temperature low trip. b02 = RTD 1 temperature high trip. b03 = RTD 1 Open Circuit trip. b04 = RTD 2 Short Circuit trip. b05 = RTD 2 temperature low trip. b06 = RTD 2 temperature high trip. b07 = RTD 2 Open Circuit trip. b08 = RTD 3 Short Circuit trip. b09 = RTD 3 temperature low trip. b10 = RTD 3 temperature high trip. b11 = RTD 3 Open Circuit trip. b12 = RTD 4 Short Circuit trip. b13 = RTD 4 temperature low trip. b14 = RTD 4 temperature high trip. b15 = RTD 4 Open Circuit trip.	Word / F64		R	0 - 65535
00891	Control word trips enabled 07 b00 = RTD 5 Short Circuit trip. b01 = RTD 5 temperature low trip. b02 = RTD 5 temperature high trip. b03 = RTD 5 Open Circuit trip. b04 = RTD 6 Short Circuit trip. b05 = RTD 6 temperature low trip. b06 = RTD 6 temperature high trip. b07 = RTD 6 Open Circuit trip. b08 = RTD 7 Short Circuit trip. b09 = RTD 7 temperature low trip. b10 = RTD 7 temperature high trip. b11 = RTD 7 Open Circuit trip. b12 = RTD 8 Short Circuit trip. b13 = RTD 8 temperature low trip. b14 = RTD 8 temperature high trip. b15 = RTD 8 Open Circuit trip.	Word / F65		R	0 - 65535
00892	Control word trips enabled 08 b00 = RTD 9 Short Circuit trip. b01 = RTD 9 temperature low trip. b02 = RTD 9 temperature high trip. b03 = RTD 9 Open Circuit trip. b04 = RTD 10 Short Circuit trip. b05 = RTD 10 temperature low trip. b06 = RTD 10 temperature high trip. b07 = RTD 10 Open Circuit trip. b08 = RTD 11 Short Circuit trip. b09 = RTD 11 temperature low trip. b10 = RTD 11 temperature high trip. b11 = RTD 11 Open Circuit trip. b12 = RTD 12 Short Circuit trip. b13 = RTD 12 temperature low trip. b14 = RTD 12 temperature high trip. b15 = RTD 12 Open Circuit trip.	Word / F66		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00893	Control word trips enabled 09 b00 = Ext. configurable trip 01. b01 = Ext. configurable trip 02. b02 = Ext. configurable trip 03. b03 = Ext. configurable trip 04. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F67		R	0 - 65535
00894	Control word trips enabled 10 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F68		R	0 - 65535
00895	Zone interlock exception mask 00 b00 = Over current alarm , Load Current > 100% of setpoint. b01 = Current unbalance . b02 = Current single phase . b03 = I Positive sequence . b04 = I Negative sequence . b05 = I Zero sequence alarm . b06 = I Neutral monitor . b07 = THD magnitude current . b08 = Min. load < setpoint. b09 = Short circuit. b10 = Running stall condition. b11 = % THD current > setpoint. b12 = Vectorial stall, rate of change of Power Factor during start up too low. b13 = Unauthorised current b14 = Reserved. b15 = Reserved.	Word / F25		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00896	Zone interlock exception mask 01 b00 = Reserved. b01 = Reserved.. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Watt demand exceeded. b13 = VAr demand exceeded. b14 = VA demand exceeded. b15 = Current demand exceeded.	Word / F26		R	0 - 65535
00897	Zone interlock exception mask 02 b00 = Overvoltage . b01 = Undervoltage . b02 = Voltage symmetry . b03 = Low line voltage frequency . b04 = High line voltage frequency . b05 = Min. Volts/Hz . b06 = Max. Volts/Hz . b07 = Rate of frequency change . b08 = Voltage phase rotation. b09 = V Positive sequence . b10 = V Negative sequence . b11 = V Zero sequence . b12 = % V THD high b13 = V THD magnitude high b14 = Differential voltage. b15 = Reserved.	Word / F27		R	0 - 65535
00898	Zone interlock exception mask 03 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved.. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Voltage not present . b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F28		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00899	Zone interlock exception mask 04 b00 = Auxiliary undervoltage. b01 = Auxiliary overvoltage. b02 = Earth leakage. b03 = Earth fault. b04 = Insulation lockout < 20kOhm. b05 = Reserved. b06 = Earth detector. b07 = Reserved. b08 = Apparent power limit . b09 = Reserved. b10 = Power factor limit . b11 = Direction active power. b12 = Direction reactive power. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F29		R	0 - 65535
00900	Zone interlock exception mask 05 b00 = Speed 01 running or standstill. b01 = Speed 02 running or standstill. b02 = Underspeed pulse count low 01. b03 = Underspeed pulse count low 02. b04 = Underspeed 4-20mA input on Ch 01. b05 = Underspeed 4-20mA input on Ch 02. b06 = Speed switch zero 01. b07 = Speed switch zero 02. b08 = Overspeed pulse count high 01. b09 = Overspeed pulse count high 02. b10 = Overspeed 4-20mA input on Ch 01. b11 = Overspeed 4-20mA input on Ch 02. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F30		R	0 - 65535
00901	Zone interlock exception mask 06 b00 = Main Contactor Trip Coil continous. b01 = Breaker Fail warning. b02 = IO Expander I2C communication lost. b03 = RTD module I2C communication lost. b04 = Internal communication module I2C communication lost. b05 = 4 - 20mAmodule I2C communication lost. b06 = MMI I2C communication lost. b07 = Ext. communication module I2C communication lost. b08 = CT and VT connection failed. b09 = EL CBCT connection failed. b10 = Reserved. b11 = Frozen contact (Main Contactor failed to open to clear fault). b12 = Breaker operation near end of life. b13 = Safety Maintenance Interlock active. b14 = Emergency stop active. b15 = RTD 08 module I2C communication lost.	Word / F31		R	0 - 65535

Table 4: General Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
00902	Zone interlock exception mask 07 b00 = 4 - 20mA input channel 1 high. b01 = 4 - 20mA input channel 1 low. b02 = 4 - 20mA input channel 2 high. b03 = 4 - 20mA input channel 2 low. b04 = 4 - 20mA output channel 1 high. b05 = 4 - 20mA output channel 1 low. b06 = 4 - 20mA output channel 2 high. b07 = 4 - 20mA output channel 2 low. b08 = RTD 1 temperature level high. b09 = RTD 1 temperature level low. b10 = RTD 2 temperature level high. b11 = RTD 2 temperature level low. b12 = RTD 3 temperature level high. b13 = RTD 3 temperature level low. b14 = RTD 4 temperature level high. b15 = RTD 4 temperature level low.	Word / F32		R	0 - 65535
00903	Zone interlock exception mask 08 b00 = RTD 5 temperature level high. b01 = RTD 5 temperature level low. b02 = RTD 6 temperature level high. b03 = RTD 6 temperature level low. b04 = RTD 7 temperature level high. b05 = RTD 7 temperature level low. b06 = RTD 8 temperature level high. b07 = RTD 8 temperature level low. b08 = RTD 9 temperature level high. b09 = RTD 9 temperature level low. b10 = RTD 10 temperature level high. b11 = RTD 10 temperature level low. b12 = RTD 11 temperature level high. b13 = RTD 11 temperature level low. b14 = RTD 12 temperature level high. b15 = RTD 12 temperature level low.	Word / F33		R	0 - 65535
00904	Zone interlock exception mask 09 b00 = Starts per hour. b01 = Execution fault, failure of Main Contactor to close within Execution time. b02 = Feedback fault, Main contactor latching circuit failure within Feedback time. b03 = Load settings corruption error. b04 = Ext. configurable trip 01 active. b05 = Ext. configurable trip 02 active. b06 = Ext. configurable trip 03 active. b07 = Ext. configurable trip 04 active. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F34		R	0 - 65535

Table 4: General Settings (Continued)

Addr	Name	Type / Format	Unit	R/W	Range
00905	Zone interlock exception mask 10 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F35		R	0 - 65535
00906	Zone interlock exception mask 11 b00 = Reserved. b01 = Reserved. b02 = Reserved. b03 = Reserved. b04 = Reserved. b05 = Reserved. b06 = Reserved. b07 = Reserved. b08 = Reserved. b09 = Reserved. b10 = Reserved. b11 = Reserved. b12 = Reserved. b13 = Reserved. b14 = Reserved. b15 = Reserved.	Word / F36		R	0 - 65535
00907	GOT reset input (LF Table)	Word / F69		R/W	0 - 65535
00908	Internal comms reset input (LF Table)	Word / F69		R/W	0 - 65535
00909	Ext. comms reset input (LF Table)	Word / F69		R/W	0 - 65535
00910	Zone interlock exception input	Word / F69		R/W	0 - 65535

6.6 Statistics

To Reset Statistics, password 0xA55A must be written to register 1000.

Table 5: Statistics Values and Settings

Addr	Name	Type / Format	Unit	R/W	Range
01000	Password Register (Writing 0xA55A to this register will enable resetting of Statistical Values)	Word / F2		R/W	
01001	Reset bits – 1 (Refer MEprotect User Manuals)	Word / F2		R/W	
01002	Duration length of the recording window for Demand measurements 0 = 1 sec. 1 = 4 sec. 2 = 16 sec. 3 = 64 sec. 4 = 4 minutes. 5 = 17 Minutes. 6 = 1 hour. 7 = 4 hours. 8 = 18 hours. 9 = 3 Days. 10 = 12 Days. 11 = 48 Days.	Word / F71		R	0 - 11
01003	Reserved	Word / F2		R	
01004 01005	kWatt Demand warning level (1 – 400 000 000)	DWord / F3	kW	R	1 – 400000000
01006 01007	kVAr Demand warning level (1 – 400 000 000)	DWord / F3	kVAr	R	1 – 400000000
01008 01009	kVA Demand warning level (1 – 400 000 000)	DWord / F3	kVA	R	1 – 400000000
01010 01011	Current Demand warning level (1 – 400 000 000)	DWord / F3	A	R	1 – 400000000
01012 01013	kWatt Peak Demand warning level (1 – 400 000 000)	DWord / F3	kW	R	1 – 400000000
01014 01015	kVAr Peak Demand warning level (1 – 400 000 000)	DWord / F3	kVAr	R	1 – 400000000
01016 01017	kVA Peak Demand warning level (1 – 400 000 000)	DWord / F3	kVA	R	1 – 400000000
01018 01019	Current Peak Demand warning level (1 – 400 000 000)	DWord / F3	A	R	1 – 400000000
01020 01021	kWatt Demand trip level (1 – 400 000 000)	DWord / F3	kW	R	1 – 400000000
01022 01023	kVAr Demand trip level (1 – 400 000 000)	DWord / F3	kVAr	R	1 – 400000000
01024 01025	kVA Demand trip level (1 – 400 000 000)	DWord / F3	kVA	R	1 – 400000000
01026 01027	Current Demand trip level (1 – 400 000 000)	DWord / F3	A	R	1 – 400000000
01028 01029	kWatt Peak Demand trip level (1 – 400 000 000)	DWord / F3	kW	R	1 – 400000000
01030 01031	kVAr Peak Demand trip level (1 – 400 000 000)	DWord / F3	kVAr	R	1 – 400000000

Table 5: Statistics Values and Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01032 01033	kVA Peak Demand trip level (1 – 400 000 000)	DWord / F3	kVA	R	1 – 400000000
01034 01035	Current Peak Demand trip level (1 – 400 000 000)	DWord / F3	A	R	1 – 400000000
01036	kWatt Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
	kVAr Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
01037	kVA Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
	Current Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
01038	kWatt Peak Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
	kVAr Peak Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
01039	kVA Peak Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
	Current Peak Demand trip time (0 – 60 minutes)	Byte / F1	Min	R	0 – 60
01040	Number of starts	Word / F2		R	0 - 65535
01041	Number of successful starts	Word / F2		R	0 - 65535
01042	Average start time between starts (minutes)	Byte / F1	Min	R	0 - 60
	Average start time between starts (hours)	Byte / F1	Hr	R	0 - 23
01043	Maximum Thermal Capacity (TC) used over 10 starts	Byte / F1	%	R	0 - 100
	Last Thermal Capacity (TC) used at last start.	Byte / F1	%	R	0 – 100
01044	% Max. load during starts	Word / F2	%	R	0 - 1200
01045	% I1 load current Max. Fundamental	Word / F2	%	R	0 - 100
01046	% I1 load current Min. Fundamental	Word / F2	%	R	0 - 100
01047	% I2 load current Max. Fundamental	Word / F2	%	R	0 - 100
01048	% I2 load current Min. Fundamental	Word / F2	%	R	0 - 100
01049	Reserved	Word / F2			
01050 01051	IL1 load current maximum (peak) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01052 01053	IL1 load current average (demand) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01054 01055	IL1 load current minimum load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01056 01057	IL2 load current maximum (peak) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01058 01059	IL2 load current average (demand) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01060 01061	IL2 load current minimum load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01062 01063	IL3 load current maximum (peak) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01064 01065	IL3 load current average (demand) load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01066 01067	IL3 load current minimum load	DWord / F2	x 0.1 Amp	R	0 - 400000000
01068	ILN load current maximum load	Word / F2	x 0.1 Amp	R	0 - 65535
01069	ILN load current minimum load	Word / F2	x 0.1 Amp	R	0 - 65535
01070	% (I2/I1) Maximum (Negative seq / Positive seq)	Word / F2	%	R	0 - 100
01071	% (I2/I1) Minimum (Negative seq / Positive seq)	Word / F2	%	R	0 - 100
01072	VL1 Maximum load	Word / F2	V	R	0 - 11000
01073	VL1 Minimum load	Word / F2	V	R	0 - 11000

Table 5: Statistics Values and Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01074	VL2 Maximum load	Word / F2	V	R	0 - 11000
01075	VL2 Minimum load	Word / F2	V	R	0 - 11000
01076	VL3 Maximum load	Word / F2	V	R	0 - 11000
01077	VL3 Minimum load	Word / F2	V	R	0 - 11000
01078	VLN Maximum load	Word / F2	V	R	0 - 11000
01079	VLN Minimum load	Word / F2	V	R	0 - 11000
01080	% (V2/V1) Maximum (Negative seq / Positive seq)	Word / F2	%	R	0 - 100
01081	% (V2/V1) Minimum (Negative seq / Positive seq)	Word / F2	%	R	0 - 100
01082	Voltage Max. freq	Word / F2	x 0.1 Hz	R	0 - 10000
01083	Voltage Min. freq	Word / F2	x 0.1 Hz	R	0 - 10000
01084	% V1 Max. Fundamental	Word / F2	%	R	0 - 100
01085	% V1 Min. Fundamental	Word / F2	%	R	0 - 100
01086	% V2 Max. Fundamental	Word / F2	%	R	0 - 100
01087	% V2 Min. Fundamental	Word / F2	%	R	0 - 100
01088	VX 3rd Harmonic level maximum	Word / F2	%	R	0 – 100
01089	VX 3rd Harmonic level minimum	Word / F2	%	R	0 – 100
01090	Volts per Hertz maximum	Word / F2	x 0.1 V/Hz	R	0 – 10000
01091	Volts per Hertz minimum	Word / F2	x 0.1 V/Hz	R	0 – 10000
01092	Trip counter	Word / F2		R	0 - 65535
01093	Auxiliary power up counter	Word / F2		R	0 - 65535
01094	Displaced PF Max. (x 0.01)	Word / F2	x0.01	R	0 - 100
01095	Displaced PF Min. (x 0.01)	Word / F2	x0.01	R	0 - 100
01096	Reserved	Word / F2			
01097	Reserved	Word / F2			
01098	Reserved	Word / F2			
01099	Reserved	Word / F2			
01100	Reserved	Word / F2			
01101	Reserved	Word / F2			
01102 01103	System kVA Maximum (peak)	DWord / F3	x 0.1 kVA	R	0 - 400000000
01104 01105	System kVA Average (demand)	DWord / F3	x 0.1 kVA	R	0 - 400000000
01106 01107	System kVA Minimum	DWord / F3	x 0.1 kVA	R	0 - 400000000
01108 01109	System kW Maximum (peak)	DWord / F3	x 0.1 kW	R	0 - 400000000
01110 01111	System kW Average (demand)	DWord / F3	x 0.1 kW	R	0 - 400000000
01112 01113	System kW Minimum	DWord / F3	x 0.1 kW	R	0 - 400000000
01114 01115	System kVAr kW Maximum (peak)	DWord / F3	x 0.1 kVAr	R	0 - 400000000
01116 01117	System kVAr Average (demand)	DWord / F3	x 0.1 kVAr	R	0 - 400000000
01118 01119	System kVAr Minimum	DWord / F3	x 0.1 kVAr	R	0 – 400000000

Table 5: Statistics Values and Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01120 01121	Motor total running hours	DWord / F3	x 0.1 Hrs	R	0 – 400000000
01122 01123	Motor running on load	DWord / F3	x 0.1 Hrs	R	0 – 400000000
01124 01125	Motor available counter	DWord / F3	x 0.1 Hrs	R	0 – 400000000
01126 01127	Apparent power (S) reactive power consumed	DWord / F3	x0.1 kVAh	R	0 - 400000000
01128 01129	Real power (P) consumed	DWord / F3	x0.1 kWh	R	0 - 400000000
01130 01131	Positive power (Consumed).	DWord / F3	x0.1 kWh	R	0 - 400000000
01132 01133	Negative power (Generated)	DWord / F3	x0.1 kWh	R	0 - 400000000
01134 01135	Forward power consumed.	DWord / F3	x0.1 kWh	R	0 - 400000000
01136 01137	Reverse power consumed.	DWord / F3	x0.1 kWh	R	0 - 400000000
01138	Reserved	Word / F2			
01139	Reserved	Word / F2			
01140	Reserved	Word / F2			
01141	Reserved	Word / F2			
01142	Reserved	Word / F2			
01143	Reserved	Word / F2			
01144	Reserved	Word / F2			
01145	Reserved	Word / F2			
01146	Reserved	Word / F2			
01147	Reserved	Word / F2			
01148	Reserved	Word / F2			
01149	Reserved	Word / F2			
01150 01151	kWh Forward	DWord / F3	x 0.1 kWh	R	0 - 400000000
01152 01153	kWh Reverse	DWord / F3	x 0.1 kWh	R	0 - 400000000
01154 01155	kWh Net	DWord / F3	x 0.1 kWh	R	0 - 400000000
01156 01157	kVAr Forward	DWord / F3	x 0.1 kVAr	R	0 - 400000000
01158 01159	kVAr Reverse	DWord / F3	x 0.1 kVAr	R	0 - 400000000
01160 01161	kVAr Net	DWord / F3	x 0.1 kVAr	R	0 - 400000000
01162	% Last feeder Voltage difference	Word / F2	%	R	0 - 65535
01163	Last feeder frequency difference	Word / F2	x 0.1 Hz	R	0 - 65535
01164	Last feeder phase angle difference	Word / F2	Degr.	R	0 - 359
01165	Last feeder voltage	Word / F2	V	R	10 - 11000
01166	Reserved	Word / F2			
01167	Last recorded frequency	Word / F2	x 0.1 Hz	R	0 – 10000
01168	Reserved	Word / F2			
01169	Last recorded phase angle	Word / F2	Degr.	R	0 – 359
01170	Reserved	Word / F2			

6.7 Real-Time Clock

To Write to RTC module password 0xA55A or 0xB55B must be written to register 600.

Table 6 : Real Time Clock(RTC)

Addr	Name	Type / Format	Unit	R/W	Range
01200	RTC milli sec	Word / F2	x10 mSec	R/W	0 - 99
01201	RTC sec	Word / F2	Sec	R/W	0 - 59
01202	RTC minutes	Word / F2	Min	R/W	0 - 59
01203	RTC hour	Word / F2	Hour	R/W	0 - 23
01204	RTC day	Word / F2	Day	R/W	1 - 31
01205	RTC month	Word / F2	Month	R/W	1 - 12
01206	RTC year	Word / F2	Year	R/W	0 - 99

6.8 RTD Module

To Write to RTD module password 0xA55A or 0xB55B must be written to register 600.

Table 7 : RTD Module Settings

Addr	Name	Type / Format	Unit	R/W	Range
01500	RTD 4 channel Type b01 – b00 = 00 = RTD 1 PT100 = 01 = RTD 1 PT1000 = 10 = RTD 1 PTC = 11 = RTD 1 NTC b03 – b02 = 00 = RTD 2 PT100 = 01 = RTD 2 PT1000 = 10 = RTD 2 PTC = 11 = RTD 2 NTC b05 – b04 = 00 = RTD 3 PT100 = 01 = RTD 3 PT1000 = 10 = RTD 3 PTC = 11 = RTD 3 NTC b07 – b06 = 00 = RTD 4 PT100 = 01 = RTD 4 PT1000 = 10 = RTD 4 PTC = 11 = RTD 4 NTC	Word		R/W	0 - 65535
01501	RTD 8 channel type b01 – b00 = 00 = RTD 5 PT100 = 01 = RTD 5 PT1000 = 10 = RTD 5 PTC = 11 = RTD 5 NTC b03 – b02 = 00 = RTD 6 PT100 = 01 = RTD 6 PT1000 = 10 = RTD 6 PTC = 11 = RTD 6 NTC b05 – b04 = 00 = RTD 7 PT100 = 01 = RTD 7 PT1000 = 10 = RTD 7 PTC = 11 = RTD 7 NTC b07 – b06 = 00 = RTD 8 PT100 = 01 = RTD 8 PT1000 = 10 = RTD 8 PTC = 11 = RTD 8 NTC b09 – b08 = 00 = RTD 9 PT100 = 01 = RTD 9 PT1000 = 10 = RTD 9 PTC = 11 = RTD 9 NTC b11 – b10 = 00 = RTD 10 PT100 = 01 = RTD 10 PT1000 = 10 = RTD 10 PTC = 11 = RTD 10 NTC b13 – b12 = 00 = RTD 11 PT100 = 01 = RTD 11 PT1000 = 10 = RTD 11 PTC = 11 = RTD 11 NTC b15 – b14 = 00 = RTD 12 PT100 = 01 = RTD 12 PT1000 = 10 = RTD 12 PTC = 11 = RTD 12 NTC	Word / F2		R/W	0 - 65535

Table 7 : RTD Module Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01502	RTD 4 channel type of connection b01–b00 = 00 (RTD1 Motor winding) = 01 (RTD1 Motor winding & pre load) = 10 (RTD1 Bearing) = 11 (RTD1 Thermostat) b03–b02 = 00 (RTD2 Motor winding = 01 (RTD2 Motor winding & pre load) = 10 (RTD2 Bearing) = 11 (RTD2 Thermostat) b05–b04 = 00 (RTD3 Motor winding = 01 (RTD3 Motor winding & pre load) = 10 (RTD3 Bearing) = 11 (RTD3 Thermostat) b07–b06 = 00 (RTD4 Motor winding = 01 (RTD4 Motor winding & pre load) = 10 (RTD4 Bearing) = 11 (RTD4 Thermostat)	Word / F2		R/W	0 - 65535
01503	RTD 8 channel type of connection b01–b00 = 00 (RTD5 Motor winding = 01 (RTD5 Motor winding & pre load) = 10 (RTD5 Bearing) = 11 (RTD5 Thermostat) b03–b02 = 00 (RTD6 Motor winding = 01 (RTD6 Motor winding & pre load) = 10 (RTD6 Bearing) = 11 (RTD6 Thermostat) b05–b04 = 00 (RTD7 Motor winding = 01 (RTD7 Motor winding & pre load) = 10 (RTD7 Bearing) = 11 (RTD7 Thermostat) b07–b06 = 00 (RTD8 Motor winding = 01 (RTD8 Motor winding & pre load) = 10 (RTD8 Bearing) = 11 (RTD8 Thermostat) b09–b08 = 00 (RTD9 Motor winding = 01 (RTD9 Motor winding & pre load) = 10 (RTD9 Bearing) = 11 (RTD9 Thermostat) b11–b10 = 00 (RTD10 Motor winding = 01 (RTD10 Motor wind & pre load) = 10 (RTD10 Bearing) = 11 (RTD10 Thermostat) b13–b12 = 00 (RTD11 Motor winding = 01 (RTD11 Motor wind & pre load) = 10 (RTD11 Bearing) = 11 (RTD11 Thermostat) b15–b14 = 00 (RTD12 Motor winding = 01 (RTD12 Motor wind & pre load) = 10 (RTD12 Bearing) = 11 (RTD12 Thermostat)	Word / F2		R/W	0 - 65535
01504	RTD1 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01505	RTD 1 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01506	RTD 1 temperature low trip level	Word / F2	^{O}C/Ω	R/W	0 - 250

Table 7 : RTD Module Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
	(PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)				
01507	RTD 1 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01508	RTD 2 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01509	RTD 2 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01510	RTD 2 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01511	RTD 2 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01512	RTD 3 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01513	RTD 3 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01514	RTD 3 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01515	RTD 3 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01516	RTD 4 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01517	RTD 4 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01518	RTD 4 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01519	RTD 4 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01520	RTD 5 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01521	RTD 5 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01522	RTD 5 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01523	RTD 5 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01524	RTD 6 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01525	RTD 6 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250

Table 7 : RTD Module Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01526	RTD 6 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01527	RTD 6 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01528	RTD 7 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01529	RTD 7 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01530	RTD 7 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01531	RTD 7 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01532	RTD 8 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01533	RTD 8 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01534	RTD 8 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01535	RTD 8 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01536	RTD 9 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01537	RTD 9 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01538	RTD 9 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01539	RTD 9 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01540	RTD 10 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01541	RTD 10 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01542	RTD 10 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01543	RTD 10 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01544	RTD 11 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01545	RTD 11 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250

Table 7 : RTD Module Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
01546	RTD 11 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01547	RTD 11 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01548	RTD 12 temperature high warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01549	RTD 12 temperature high trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01550	RTD 12 temperature low trip level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01551	RTD 12 temperature low warning level (PT100 & PT1000 = oC – 30 oC) (PTC & NTC = Ω x 10Ω)	Word / F2	^{O}C/Ω	R/W	0 - 250
01552	RTD 1 temperature trip delay	Word / F2	sec	R/W	1 - 250
01553	RTD 2 temperature trip delay	Word / F2	sec	R/W	1 - 250
01554	RTD 3 temperature trip delay	Word / F2	sec	R/W	1 - 250
01555	RTD 4 temperature trip delay	Word / F2	sec	R/W	1 - 250
01556	RTD 5 temperature trip delay	Word / F2	sec	R/W	1 - 250
01557	RTD 6 temperature trip delay	Word / F2	sec	R/W	1 - 250
01558	RTD 7 temperature trip delay	Word / F2	sec	R/W	1 - 250
01559	RTD 8 temperature trip delay	Word / F2	sec	R/W	1 - 250
01560	RTD 9 temperature trip delay	Word / F2	sec	R/W	1 - 250
01561	RTD 10 temperature trip delay	Word / F2	sec	R/W	1 - 250
01562	RTD 11 temperature trip delay	Word / F2	sec	R/W	1 - 250
01563	RTD 12 temperature trip delay	Word / F2	sec	R/W	1 - 250

6.9 4 - 20mA Module

To Write to 4 – 20mA Module, password 0xA55A or 0xB55B must be written to register 600.

Table 8 : 4 - 20mA Module Settings

Addr	Name	Type / Format	Unit	R/W	Range
01700	4 - 20mA input 1 high warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01701	4 - 20mA input 1 high trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01702	4 - 20mA input 1 low trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01703	4 - 20mA input 1 low warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01704	4 - 20mA input 1 trip delay	Word / F2	x 0.1Sec	R/W	0 – 65000
01705	4 - 20mA input 2 high warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01706	4 - 20mA input 2 high trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01707	4 - 20mA input 2 low trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01708	4 - 20mA input 2 low warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01709	4 - 20mA input 2 trip delay	Word / F2	x 0.1Sec	R/W	0 – 65000
01710	4 - 20mA output 1 high warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01711	4 - 20mA output 1 high trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01712	4 - 20mA output 1 low trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01713	4 - 20mA output 1 low warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01714	4 - 20mA output 1 trip delay	Word / F2	x 0.1Sec	R/W	0 – 65000
01715	4 - 20mA output 2 high warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01716	4 - 20mA output 2 high trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01717	4 - 20mA output 2 low trip level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01718	4 - 20mA output 2 low warning level (x 0.1)	Word / F6	x 0.1mA	R/W	0 - 250
01719	4 - 20mA output 2 trip delay	Word / F2	x 0.1Sec	R/W	0 – 65000
01720	4 - 20mA output 1 type 0 = 4 to 20mA. 1 = 0 to 20mA. 2 = Bypass curve.	Word / F2		R/W	0 - 2
01721	4 - 20mA output 1 source See 4 - 20mA Table (5.2.1.2)	Word / F2		R/W	0 - 65535
01722	4 - 20mA output 1 high limit (Count equals to 20mA)	Word / F2		R/W	0 - 65535
01723	4 - 20mA output 1 low limit (Count equal to 0 or 4mA - type selection)	Word / F2		R/W	0 - 65535
01724	4 - 20mA output 1 rate of change timer	Word / F2	ms	R/W	0 - 10000
01725	4 - 20mA output 1 rate of change permA (x 0.1)	Word / F2	x 0.1mA	R/W	0 - 250
01726	4 - 20mA output 2 type 0 = 4 to 20mA. 1 = 0 to 20mA. 2 = Bypass curve.	Word / F2		R/W	0 - 2
01727	4 - 20mA output 2 source (4 – 20mA Output Table)	Word / F2		R/W	0 - 65535
01728	4 - 20mA output 2 high limit (Count equals to 20mA)	Word / F2		R/W	0 - 65535
01729	4 - 20mA output 2 low limit (Count equal to 0 or 4mA - type selection)	Word / F2		R/W	0 - 65535
01730	4 - 20mA output 2 rate of change timer	Word / F2	ms	R/W	0 - 10000
01731	4 - 20mA output 2 rate of change permA (x 0.1)	Word / F2	x 0.1mA	R/W	0 - 250
01732	Analog Input 1 Offset	Word / F2		R/W	0 - 255
01733	Analog Input 2 Offset	Word / F2		R/W	0 - 255
01734	Analog Output 1 Offset	Word / F2		R/W	0 - 255
01735	Analog Output 2 Offset	Word / F2		R/W	0 - 255

6.10 Digital Field Input Module

To Write to Digital Field Input Module, password 0xA55A or 0xB55B must be written to register 600.

Table 9 : Digital Field Input Module Settings

Addr	Name	Type / Format	Unit	R/W	Range
01800	Digital field input 08 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01801	Digital field input 08 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01802	Digital field input 09 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01803	Digital field input 09 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01804	Digital field input 10 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01805	Digital field input 10 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01806	Digital field input 11 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01807	Digital field input 11 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01808	Digital field input 12 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01809	Digital field input 12 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01810	Digital field input 13 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01811	Digital field input 13 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01812	Digital field input 14 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01813	Digital field input 14 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01814	Digital field input 15 on delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01815	Digital field input 15 off delay (0–2000 ms)	Word / F2	ms	R/W	0 - 2000
01816	Relay 5 Input	Word / F69		R/W	0 - 65535
01817	Relay 6 Input	Word / F69		R/W	0 - 65535
01818	Relay 7 Input	Word / F69		R/W	0 - 65535
01819	Relay 8 Input	Word / F69		R/W	0 - 65535

6.11 Logic

To Write to Logic, password 0xA55A or 0xB55B must be written to register 600.

Table 10 : Logic Settings

Addr	Name	Type / Format	Unit	R/W	Range
1900	Logic Function 1 Mask	Word / F2		R/W	0 - 65535
1901	Logic Function 1 Input A	Word / F2		R/W	0 - 65535
1902	Logic Function 1 Input B	Word / F2		R/W	0 - 65535
1903	Logic Function 1 Input C	Word / F2		R/W	0 - 65535
1904	Logic Function 1 Input D	Word / F2		R/W	0 - 65535
1905	Logic Function 2 Mask	Word / F2		R/W	0 - 65535
1906	Logic Function 2 Input A	Word / F2		R/W	0 - 65535
1907	Logic Function 2 Input B	Word / F2		R/W	0 - 65535
1908	Logic Function 2 Input C	Word / F2		R/W	0 - 65535
1909	Logic Function 2 Input D	Word / F2		R/W	0 - 65535
1910	Logic Function 3 Mask	Word / F2		R/W	0 - 65535
1911	Logic Function 3 Input A	Word / F2		R/W	0 - 65535
1912	Logic Function 3 Input B	Word / F2		R/W	0 - 65535
1913	Logic Function 3 Input C	Word / F2		R/W	0 - 65535
1914	Logic Function 3 Input D	Word / F2		R/W	0 - 65535
1915	Logic Function 4 Mask	Word / F2		R/W	0 - 65535
1916	Logic Function 4 Input A	Word / F2		R/W	0 - 65535
1917	Logic Function 4 Input B	Word / F2		R/W	0 - 65535
1918	Logic Function 4 Input C	Word / F2		R/W	0 - 65535
1919	Logic Function 4 Input D	Word / F2		R/W	0 - 65535
1920	Logic Function 5 Mask	Word / F2		R/W	0 - 65535
1921	Logic Function 5 Input A	Word / F2		R/W	0 - 65535
1922	Logic Function 5 Input B	Word / F2		R/W	0 - 65535
1923	Logic Function 5 Input C	Word / F2		R/W	0 - 65535
1924	Logic Function 5 Input D	Word / F2		R/W	0 - 65535
1925	Logic Function 6 Mask	Word / F2		R/W	0 - 65535
1926	Logic Function 6 Input A	Word / F2		R/W	0 - 65535
1927	Logic Function 6 Input B	Word / F2		R/W	0 - 65535
1928	Logic Function 6 Input C	Word / F2		R/W	0 - 65535
1929	Logic Function 6 Input D	Word / F2		R/W	0 - 65535
1930	Timer 1 Start Input	Word / F69		R/W	0 - 65535
1931	Timer 1 Reset Input	Word / F69		R/W	0 - 65535
1932	Timer 1 Timeout	Word / F2	x 0.1 Sec	R/W	0 - 65534
1933	Timer 2 Type 0 = Timer On Delay. 1 = Timer Latch On Delay. 2 = Timer Latch Off Delay. 3 = Timer On Pulse.	Byte / F1		R/W	0 - 3
	Timer 1 Type 0 = Timer On Delay. 1 = Timer Latch On Delay. 2 = Timer Latch Off Delay. 3 = Timer On Pulse.	Byte / F1		R/W	0 - 3
1934	Timer 2 Start Input	Word / F69		R/W	0 - 65535
1935	Timer 2 Reset Input	Word / F69		R/W	0 - 65535

Table 10 : Logic Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
1936	Timer 2 Timeout	Word / F2	x 0.1 Sec	R/W	0 - 65534
1937	RTC Start Hour	Word / F2	Hr	R/W	0 - 23
1938	RTC Start Minute	Word / F2	Min	R/W	0 - 59
1939	Counter A Limit	Word / F2		R/W	0 - 65535
1940	Counter A Up Input	Word / F69		R/W	0 - 65535
1941	Counter A Down Input	Word / F69		R/W	0 - 65535
1942	Counter A Reset Input	Word / F69		R/W	0 - 65535
1943	Counter B Limit	Word / F2		R/W	0 - 65535
1944	Counter B Up Input	Word / F69		R/W	0 - 65535
1945	Counter B Down Input	Word / F69		R/W	0 - 65535
1946	Counter B Reset Input	Word / F69		R/W	0 - 65535
1947	Latch A Set Input	Word / F69		R/W	0 - 65535
1948	Latch A Reset Input	Word / F69		R/W	0 - 65535
1949	Latch B Set Input	Word / F69		R/W	0 - 65535
1950	Latch B Reset Input	Word / F69		R/W	0 - 65535
1951	Pulse Generator Input	Word / F69		R/W	0 - 65535
1952	Pulse Generator Period	Byte / F1	min	R/W	1 - 240
	Pulse Generator Duty Cycle	Byte / F1	%	R/W	1 - 99
1953	Reserved	Byte / F1	min	R/W	1 - 240
	Comparator 1 Input	Byte / F1	%	R/W	1 - 99
1954	Comparator 1 Hi Hi Limit	Word / F2		R/W	0 - 65535
1955	Comparator 1 Hi Lo Limit	Word / F2		R/W	0 - 65535
1956	Comparator 1 Lo Hi Limit	Word / F2		R/W	0 - 65535
1957	Comparator 1 Lo Lo Limit	Word / F2		R/W	0 - 65535
1958	Reserved	Byte / F1	min	R/W	1 - 240
	Comparator 2 Input	Byte / F1	%	R/W	1 - 99
1959	Comparator 2 Hi Hi Limit	Word / F2		R/W	0 - 65535
1960	Comparator 2 Hi Lo Limit	Word / F2		R/W	0 - 65535
1961	Comparator 2 Lo Hi Limit	Word / F2		R/W	0 - 65535
1962	Comparator 2 Lo Lo Limit	Word / F2		R/W	0 - 65535
1963	Thermal Capacity Hi Hi Warning Level	Byte / F1	%	R/W	0 - 100
	Thermal Capacity Hi Warning Level	Byte / F1	%	R/W	0 - 100
1964	Digital Field Input On Delay 1	Word / F2	ms	R/W	0 - 2000
1965	Digital Field Input Off Delay 1	Word / F2	ms	R/W	0 - 2000
1966	Digital Field Input On Delay 2	Word / F2	ms	R/W	0 - 2000
1967	Digital Field Input Off Delay 2	Word / F2	ms	R/W	0 - 2000
1968	Digital Field Input On Delay 3	Word / F2	ms	R/W	0 - 2000
1969	Digital Field Input Off Delay 3	Word / F2	ms	R/W	0 - 2000
1970	Digital Field Input On Delay 4	Word / F2	ms	R/W	0 - 2000
1971	Digital Field Input Off Delay 4	Word / F2	ms	R/W	0 - 2000
1972	Digital Field Input On Delay 5	Word / F2	ms	R/W	0 - 2000
1973	Digital Field Input Off Delay 5	Word / F2	ms	R/W	0 - 2000
1974	Digital Field Input On Delay 6	Word / F2	ms	R/W	0 - 2000
1975	Digital Field Input Off Delay 6	Word / F2	ms	R/W	0 - 2000
1976	Digital Field Input On Delay 7	Word / F2	ms	R/W	0 - 2000
1977	Digital Field Input Off Delay 7	Word / F2	ms	R/W	0 - 2000
1978	Relay 1 Input	Word / F69		R/W	0 - 65535
1979	Relay 2 Input	Word / F69		R/W	0 - 65535

Table 10 : Logic Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
1980	Relay 3 Input	Word / F69		R/W	0 - 65535
1981	Relay 4 Input	Word / F69		R/W	0 - 65535
1982	Alarm Mask 00	Word / F2		R/W	0 - 65535
1983	Alarm Mask 01	Word / F2		R/W	0 - 65535
1984	Alarm Mask 02	Word / F2		R/W	0 - 65535
1985	Alarm Mask 03	Word / F2		R/W	0 - 65535
1986	Alarm Mask 04	Word / F2		R/W	0 - 65535
1987	Alarm Mask 05	Word / F2		R/W	0 - 65535
1988	Alarm Mask 06	Word / F2		R/W	0 - 65535
1989	Alarm Mask 07	Word / F2		R/W	0 - 65535
1990	Alarm Mask 08	Word / F2		R/W	0 - 65535
1991	Alarm Mask 09	Word / F2		R/W	0 - 65535
1992	Alarm Mask 10	Word / F2		R/W	0 - 65535
1993	Alarm Mask 11	Word / F2		R/W	0 - 65535
1994	Trip Mask 00	Word / F2		R/W	0 - 65535
1995	Trip Mask 01	Word / F2		R/W	0 - 65535
1996	Trip Mask 02	Word / F2		R/W	0 - 65535
1997	Trip Mask 03	Word / F2		R/W	0 - 65535
1998	Trip Mask 04	Word / F2		R/W	0 - 65535
1999	Trip Mask 05	Word / F2		R/W	0 - 65535
2000	Trip Mask 06	Word / F2		R/W	0 - 65535
2001	Trip Mask 07	Word / F2		R/W	0 - 65535
2002	Trip Mask 08	Word / F2		R/W	0 - 65535
2003	Trip Mask 09	Word / F2		R/W	0 - 65535
2004	Trip Mask 10	Word / F2		R/W	0 - 65535
2005	Trip Mask 11	Word / F2		R/W	0 - 65535
2006	User LED 1	Word / F2		R/W	0 - 65535
2007	User LED 2	Word / F2		R/W	0 - 65535
2008	User LED 3	Word / F2		R/W	0 - 65535
2009	User LED 4	Word / F2		R/W	0 - 65535
2010	User LED 5	Word / F2		R/W	0 - 65535
2011	User LED 6	Word / F2		R/W	0 - 65535

6.12 Faults

Table 11 : Faults

Addr	Name	Type / Format	Unit	R/W	Range
02100	Password Register (Writing 0xA55A to this register will enable resetting the faults).	Word / F2		R/W	0 - 65535
02101	Request a fault. 1 - 40	Word / F2		R/W	1 - 40
02102	Fault number being sent	Word / F2		R	1 - 40
02103	Fault date day	Word / F2	dd	R	1 - 31
02104	Fault date month	Word / F2	mm	R	1 - 12
02105	Fault date year	Word / F2	yy	R	0 - 99
02106	Fault time ms	Word / F2	ms	R	0 - 999
02107	Fault time sec	Word / F2	Sec	R	0 - 23
02108	Fault time minutes	Word / F2	Min	R	0 - 59
02109	Fault time hours	Word / F2	Hr	R	0 - 59
02110	Trip flags 00	Word / F25		R	0 – 65535
02111	Trip flags 01	Word / F26		R	0 – 65535
02112	Trip flags 02	Word / F27		R	0 – 65535
02113	Trip flags 03	Word / F27		R	0 – 65535
02114	Trip flags 04	Word / F29		R	0 – 65535
02115	Trip flags 05	Word / F30		R	0 – 65535
02116	Trip flags 06	Word / F31		R	0 – 65535
02117	Trip flags 07	Word / F32		R	0 – 65535
02118	Trip flags 08	Word / F33		R	0 – 65535
02119	Trip flags 09	Word / F34		R	0 – 65535
02120	Trip flags 10	Word / F35		R	0 – 65535
02121	Trip flags 11	Word / F36		R	0 - 65535
02122	Running hours	Word / F2		R	0 - 65535
02123	Percentage > Max of the 3 phases, IL1, IL2 & IL3	Word / F2	%	R	0 - 1200
02124	Min. V of the 3 phases, VL1, VL2 & VL3	Word / F2	Vac	R	10 - 11000
02125	Breaker clear time	Word / F2	ms	R	0 - 65530
02126	Recurring fault	Word / F2		R	0 - 65535

6.13 Events

Table 12 : Events

Addr	Name	Type / Format	Unit	R/W	Range
02150	Requested event (1 - 470)	Word / F2		R/W	1 - 470
02151	Event number being sent	Word / F2		R	1 - 470
02152	Event date day	Word / F2	dd	R	1 - 31
02153	Event date month	Word / F2	mm	R	1 - 12
02154	Event date year	Word / F2	yy	R	0 - 99
02155	Event time ms (x10)	Word / F2	ms	R	0 - 99
02156	Event time sec	Word / F2	Sec	R	0 - 59
02157	Event time minutes	Word / F2	Min	R	0 - 59
02158	Event time hours	Word / F2	Hr	R	0 – 23
02159	Alarm flags 00	Word / F6		R	0 – 65535
02160	Alarm flags 01	Word / F7		R	0 – 65535
02161	Alarm flags 02	Word / F8		R	0 – 65535
02162	Alarm flags 03	Word / F9		R	0 – 65535
02163	Alarm flags 04	Word / F10		R	0 – 65535
02164	Alarm flags 05	Word / F11		R	0 – 65535
02165	Alarm flags 06	Word / F12		R	0 – 65535
02166	Alarm flags 07	Word / F13		R	0 – 65535
02167	Alarm flags 08	Word / F14		R	0 – 65535
02168	Alarm flags 09	Word / F15		R	0 – 65535
02169	Alarm flags 10	Word / F16		R	0 – 65535
02170	Alarm flags 11	Word / F17		R	0 – 65535
02171	Trip flags 00	Word / F25		R	0 – 65535
02172	Trip flags 01	Word / F26		R	0 – 65535
02173	Trip flags 02	Word / F27		R	0 – 65535
02174	Trip flags 03	Word / F28		R	0 – 65535
02175	Trip flags 04	Word / F29		R	0 – 65535
02176	Trip flags 05	Word / F30		R	0 – 65535
02177	Trip flags 06	Word / F31		R	0 – 65535
02178	Trip flags 07	Word / F32		R	0 – 65535
02179	Trip flags 08	Word / F33		R	0 – 65535
02180	Trip flags 09	Word / F34		R	0 – 65535
02181	Trip flags 10	Word / F35		R	0 – 65535
02182	Trip flags 11	Word / F36		R	0 - 65535
02183	Running hours	Word / F2		R	0 - 65535
02184	Percentage > Max of the 3 phases, IL1, IL2 & IL3	Word / F2	%	R	0 - 1200
02185	Min. V of the 3 phases, VL1, VL2 & VL3	Word / F2	Vac	R	10 - 11000
02186	Breaker clear time	Word / F2	ms	R	0 - 65530
02187	Recurring event	Word / F2	ms	R	0 - 65530
02188	Event Type	Word / F2		R	0 - 65536

6.14 Relay Field Descriptions

Table 13: Relay Field Descriptions

Addr	Name	Type / Format	Unit	R/W	Range
02210	Reserved	Word			0
02211	Relay ID (8 Characters)	4 x Word		R	ASCII CHAR
02212					
02213					
02214					
02215	Relay Description (12 Characters)	6 x Word		R	ASCII CHAR
02216					
02217					
02218					
02219					
02220					
02221	Field Input 1 Description (8 Characters)	4 x Word		R	ASCII CHAR
02222					
02223					
02224					
02225	Field Input 2 Description (8 Characters)	4 x Word		R	ASCII CHAR
02226					
02227					
02228					
02229	Field Input 3 Description (8 Characters)	4 x Word		R	ASCII CHAR
02230					
02231					
02232					
02233	Field Input 4 Description (8 Characters)	4 x Word		R	ASCII CHAR
02234					
02235					
02236					
02237	Field Input 5 Description (8 Characters)	4 x Word		R	ASCII CHAR
02238					
02239					
02240					
02241	Field Input 6 Description (8 Characters)	4 x Word		R	ASCII CHAR
02242					
02243					
02244					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02245	Field Input 7 Description (8 Characters)	4 x Word		R	ASCII CHAR
02246					
02247					
02248					
02249	Field Input 8 Description (8 Characters)	4 x Word		R	ASCII CHAR
02250					
02251					
02252					
02253	Field Input 9 Description (8 Characters)	4 x Word		R	ASCII CHAR
02254					
02255					
02256					
02257	Field Input 10 Description (8 Characters)	4 x Word		R	ASCII CHAR
02258					
02259					
02260					
02261	Field Input 11 Description (8 Characters)	4 x Word		R	ASCII CHAR
02262					
02263					
02264					
02265	Field Input 12 Description (8 Characters)	4 x Word		R	ASCII CHAR
02266					
02267					
02268					
02269	Field Input 13 Description (8 Characters)	4 x Word		R	ASCII CHAR
02270					
02271					
02272					
02273	Field Input 14 Description (8 Characters)	4 x Word		R	ASCII CHAR
02274					
02275					
02276					
02277	Field Input 15 Description (8 Characters)	4 x Word		R	ASCII CHAR
02278					
02279					
02280					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02281	Relay Output 1 Description (8 Characters)	4 x Word		R	ASCII CHAR
02282					
02283					
02284					
02285	Relay Output 2 Description (8 Characters)	4 x Word		R	ASCII CHAR
02286					
02287					
02288					
02289	Relay Output 3 Description (8 Characters)	4 x Word		R	ASCII CHAR
02290					
02291					
02292					
02293	Relay Output 4 Description (8 Characters)	4 x Word		R	ASCII CHAR
02294					
02295					
02296					
02297	Relay Output 5 Description (8 Characters)	4 x Word		R	ASCII CHAR
02298					
02299					
02300					
02301	Relay Output 6 Description (8 Characters)	4 x Word		R	ASCII CHAR
02302					
02303					
02304					
02305	Relay Output 7 Description (8 Characters)	4 x Word		R	ASCII CHAR
02306					
02307					
02308					
02309	Relay Output 8 Description (8 Characters)	4 x Word		R	ASCII CHAR
02310					
02311					
02312					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02313	GOT Control Word 0 - Bit 0 Description (8 Characters)	4 x Word		R	ASCII CHAR
02314					
02315					
02316					
02317	GOT Control Word 0 - Bit 1 Description (8 Characters)	4 x Word		R	ASCII CHAR
02318					
02319					
02320					
02321	GOT Control Word 0 - Bit 2 Description (8 Characters)	4 x Word		R	ASCII CHAR
02322					
02323					
02324					
02325	GOT Control Word 0 - Bit 3 Description (8 Characters)	4 x Word		R	ASCII CHAR
02326					
02327					
02328					
02329	GOT Control Word 0 - Bit 4 Description (8 Characters)	4 x Word		R	ASCII CHAR
02330					
02331					
02332					
02333	GOT Control Word 0 - Bit 5 Description (8 Characters)	4 x Word		R	ASCII CHAR
02334					
02335					
02336					
02337	GOT Control Word 0 - Bit 6 Description (8 Characters)	4 x Word		R	ASCII CHAR
02338					
02339					
02340					
02341	GOT Control Word 0 - Bit 7 Description (8 Characters)	4 x Word		R	ASCII CHAR
02342					
02343					
02344					
02345	GOT Control Word 0 - Bit 8 Description (8 Characters)	4 x Word		R	ASCII CHAR
02346					
02347					
02348					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02349	GOT Control Word 0 - Bit 9 Description (8 Characters)	4 x Word		R	ASCII CHAR
02350					
02351					
02352					
02353	GOT Control Word 0 - Bit 10 Description (8 Characters)	4 x Word		R	ASCII CHAR
02354					
02355					
02356					
02357	GOT Control Word 0 - Bit 11 Description (8 Characters)	4 x Word		R	ASCII CHAR
02358					
02359					
02360					
02361	GOT Control Word 0 - Bit 12 Description (8 Characters)	4 x Word		R	ASCII CHAR
02362					
02363					
02364					
02365	GOT Control Word 0 - Bit 13 Description (8 Characters)	4 x Word		R	ASCII CHAR
02366					
02367					
02368					
02369	GOT Control Word 0 - Bit 14 Description (8 Characters)	4 x Word		R	ASCII CHAR
02370					
02371					
02372					
02373	GOT Control Word 0 - Bit 15 Description (8 Characters)	4 x Word		R	ASCII CHAR
02374					
02375					
02376					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02377	IntComm Control Word 0 - Bit 0 Description (8 Characters)	4 x Word		R	ASCII CHAR
02378					
02379					
02380					
02381	IntComm Control Word 0 - Bit 1 Description (8 Characters)	4 x Word		R	ASCII CHAR
02382					
02383					
02384					
02385	IntComm Control Word 0 - Bit 2 Description (8 Characters)	4 x Word		R	ASCII CHAR
02386					
02387					
02388					
02389	IntComm Control Word 0 - Bit 3 Description (8 Characters)	4 x Word		R	ASCII CHAR
02390					
02391					
02392					
02393	IntComm Control Word 0 - Bit 4 Description (8 Characters)	4 x Word		R	ASCII CHAR
02394					
02395					
02396					
02397	IntComm Control Word 0 - Bit 5 Description (8 Characters)	4 x Word		R	ASCII CHAR
02398					
02399					
02400					
02401	IntComm Control Word 0 - Bit 6 Description (8 Characters)	4 x Word		R	ASCII CHAR
02402					
02403					
02404					
02405	IntComm Control Word 0 - Bit 7 Description (8 Characters)	4 x Word		R	ASCII CHAR
02406					
02407					
02408					
02409	IntComm Control Word 0 - Bit 8 Description (8 Characters)	4 x Word		R	ASCII CHAR
02410					
02411					
02412					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02413	IntComm Control Word 0 - Bit 9 Description (8 Characters)	4 x Word		R	ASCII CHAR
02414					
02415					
02416					
02417	IntComm Control Word 0 - Bit 10 Description (8 Characters)	4 x Word		R	ASCII CHAR
02418					
02419					
02420					
02421	IntComm Control Word 0 - Bit 11 Description (8 Characters)	4 x Word		R	ASCII CHAR
02422					
02423					
02424					
02425	IntComm Control Word 0 - Bit 12 Description (8 Characters)	4 x Word		R	ASCII CHAR
02426					
02427					
02428					
02429	IntComm Control Word 0 - Bit 13 Description (8 Characters)	4 x Word		R	ASCII CHAR
02430					
02431					
02432					
02433	IntComm Control Word 0 - Bit 14 Description (8 Characters)	4 x Word		R	ASCII CHAR
02434					
02435					
02436					
02437	IntComm Control Word 0 - Bit 15 Description (8 Characters)	4 x Word		R	ASCII CHAR
02438					
02439					
02440					
02441	ExtComm Control Word 0 - Bit 0 Description (8 Characters)	4 x Word		R	ASCII CHAR
02442					
02443					
02444					
02445	ExtComm Control Word 0 - Bit 1 Description (8 Characters)	4 x Word		R	ASCII CHAR
02446					
02447					
02448					
02449	ExtComm Control Word 0 - Bit 2 Description (8 Characters)	4 x Word		R	ASCII CHAR
02450					
02451					
02452					
02453	ExtComm Control Word 0 - Bit 3 Description (8 Characters)	4 x Word		R	ASCII CHAR
02454					
02455					
02456					
02457	ExtComm Control Word 0 - Bit 4 Description (8 Characters)	4 x Word		R	ASCII CHAR
02458					
02459					
02460					

Table 13: Relay Field Descriptions (Continued)

Addr	Name	Type Format	Unit	R/W	Range
02461	ExtComm Control Word 0 - Bit 5 Description (8 Characters)	4 x Word		R	ASCII CHAR
02462					
02463					
02464					
02465	ExtComm Control Word 0 - Bit 6 Description (8 Characters)	4 x Word		R	ASCII CHAR
02466					
02467					
02468					
02469	ExtComm Control Word 0 - Bit 7 Description (8 Characters)	4 x Word		R	ASCII CHAR
02470					
02471					
02472					
02473	ExtComm Control Word 0 - Bit 8 Description (8 Characters)	4 x Word		R	ASCII CHAR
02474					
02475					
02476					
02477	ExtComm Control Word 0 - Bit 9 Description (8 Characters)	4 x Word		R	ASCII CHAR
02478					
02479					
02480					
02481	ExtComm Control Word 0 - Bit 10 Description (8 Characters)	4 x Word		R	ASCII CHAR
02482					
02483					
02484					
02485	ExtComm Control Word 0 - Bit 11 Description (8 Characters)	4 x Word		R	ASCII CHAR
02486					
02487					
02488					
02489	ExtComm Control Word 0 - Bit 12 Description (8 Characters)	4 x Word		R	ASCII CHAR
02490					
02491					
02492					
02493	ExtComm Control Word 0 - Bit 13 Description (8 Characters)	4 x Word		R	ASCII CHAR
02494					
02495					
02496					
02497	ExtComm Control Word 0 - Bit 14 Description (8 Characters)	4 x Word		R	ASCII CHAR
02498					
02499					
02500					
02501	ExtComm Control Word 0 - Bit 15 Description (8 Characters)	4 x Word		R	ASCII CHAR
02502					
02503					
02504					

6.15 Starter Settings

To Write to Starter Settings, password 0xA55A must be written to register 600.

Table 14 : Starter Settings

Addr	Name	Type / Format	Unit	R/W	Range
3000	Reserved	Byte / F1		R/W	
	Starter Type 0 = Protection Relay. 1 = DOL Starter. 2 = Star Delta Starter. 3 = Star Delta Reversal. 4 = Dahlander Starter. 5 = Dahlander Reversal. 6 = Pole Changing.	Byte / F1		R/W	0 - 6
3001	Starter Selection Type	Word / F2		R/W	0 – 65535
3002	Consectutive Start Limit	Byte / F1		R/W	1 - 3
	Start per hour Limit	Byte / F1		R/W	1 - 60
3003	Estop Input	Word / F69		R/W	0 – 65535
3004	Lockout Input	Word / F69		R/W	0 – 65535
3005	Feedback Signal Forward	Word / F69		R/W	0 – 65535
3006	Feedback Signal Reverse	Word / F69		R/W	0 – 65535
3007	Unautohorised Load Trip Delay	Word / F69		R/W	0 – 65535
3008	Local Remote Selection LSB	Word / F69		R/W	0 – 65535
3009	Local Remote Selection MSB	Word / F69		R/W	0 – 65535
3010	Local Start Fast Forward Input	Word / F69		R/W	0 – 65535
3011	Local Start Slow Forward Input	Word / F69		R/W	0 – 65535
3012	Local Start Fast Reverse Input	Word / F69		R/W	0 – 65535
3013	Local Start Slow Reverse Input	Word / F69		R/W	0 – 65535
3014	Local Interlock Input	Word / F69		R/W	0 – 65535
3015	Local Stop Input	Word / F69		R/W	0 – 65535
3016	Remote Start Fast Forward Input	Word / F69		R/W	0 – 65535
3017	Remote Start Slow Forward Input	Word / F69		R/W	0 – 65535
3018	Remote Start Fast Reverse Input	Word / F69		R/W	0 – 65535
3019	Remote Start Slow Reverse Input	Word / F69		R/W	0 – 65535
3020	Remote Interlock Input	Word / F69		R/W	0 – 65535
3021	Remote Stop Input	Word / F69		R/W	0 – 65535
3022	Auto Start Fast Forward Input	Word / F69		R/W	0 – 65535
3023	Auto Start Slow Forward Input	Word / F69		R/W	0 – 65535
3024	Auto Start Fast Reverse Input	Word / F69		R/W	0 – 65535
3025	Auto Start Slow Reverse Input	Word / F69		R/W	0 – 65535
3026	Auto Auto emote Interlock Input	Word / F69		R/W	0 – 65535
3027	Auto Stop Input	Word / F69		R/W	0 – 65535
3028	Pre Start Time Limit	Word / F69	sec	R/W	0 – 999
3029	Execution Timer Trip Delay	Word / F2	sec	R/W	1 - 10
3030	Feedback Timer Trip Delay	Word / F2	ms	R/W	10 - 2000
3031	Backspin Time Limit	Word / F2	sec	R/W	0 – 999
3032	DC Break Time Limit	Word / F2	ms	R/W	0 – 2000
3033	Restart Time Limit	Word / F2	sec	R/W	0 – 600
3034	Reserved	Byte / F1		R/W	
	Start Max Time Limit	Byte / F1	sec	R/W	1 - 50
3035	Feeder Volt difference	Byte / F1	V	R/W	1 - 50
	Feeder Frequency difference	Byte / F1	Hz	R/W	1 - 50

Table 14 : Starter Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
3036	Reserved	Byte / F1		R/W	
	Feeder Angle difference	Byte / F1	Deg	R/W	1 - 50
3037	Transition Time Delay	Word / F2	ms	R/W	0 – 2000
3038	Slider Open Far Limit	Word / F69		R/W	0 – 65535
3039	Slider Open Limit	Word / F69		R/W	0 – 65535
3040	Slider Close Far Limit	Word / F69		R/W	0 – 65535
3041	Slider Close Limit	Word / F69		R/W	0 – 65535
3042	Slider Open Max Time Limit	Word / F69	x0.1 Sec	R/W	0 – 65000
3043	Slider Close Max Time Limit	Word / F69	x0.1 Sec	R/W	0 – 65000

6.16 Extended Settings

Extended Settings (6000 – 6007) can be written to without a password.
To Write to Extended Settings (6008 – 6077), password 0xA55A must be written to register 600.

Table 15: Extended Settings

Addr	Name	Type / Format	Unit	R/W	Range
06000	Telemeter Value Input 1	Word / F2		R/W	0 - 65535
06001	Telemeter Value Input 2	Word / F2		R/W	0 - 65535
06002	Telemeter Value Input 3	Word / F2		R/W	0 - 65535
06003	Telemeter Value Input 4	Word / F2		R/W	0 - 65535
06004	Telemeter Value Input 5	Word / F2		R/W	0 - 65535
06005	Telemeter Value Input 6	Word / F2		R/W	0 - 65535
06006	Telemeter Value Input 7	Word / F2		R/W	0 - 65535
06007	Telemeter Value Input 8	Word / F2		R/W	0 - 65535
06008	Control Warning Enabled 11 b00 = ANSI77O channel 1 high, high. b01 = ANSI77O channel 1 high. b02 = ANSI77U channel 1 low. b03 = ANSI77U channel 1 low, low. b04 = ANSI77O channel 2 high, high. b05 = ANSI77O channel 2 high. b06 = ANSI77U channel 2 low. b07 = ANSI77U channel 2 low, low. b08 = ANSI77O channel 3 high, high. b09 = ANSI77O channel 3 high. b10 = ANSI77U channel 3 low. b11 = ANSI77U channel 3 low, low. b12 = ANSI77O channel 4 high, high. b13 = ANSI77O channel 4 high. b14 = ANSI77U channel 4 low. b15 = ANSI77U channel 4 low, low.	Word / F2		R/W	0 - 65535
06009	Control Warning Enabled 12 b00 = ANSI77O channel 5 high, high. b01 = ANSI77O channel 5 high. b02 = ANSI77U channel 5 low. b03 = ANSI77U channel 5 low, low. b04 = ANSI77O channel 6 high, high. b05 = ANSI77O channel 6 high. b06 = ANSI77U channel 6 low. b07 = ANSI77U channel 6 low, low. b08 = ANSI77O channel 7 high, high. b09 = ANSI77O channel 7 high. b10 = ANSI77U channel 7 low. b11 = ANSI77U channel 7 low, low. b12 = ANSI77O channel 8 high, high. b13 = ANSI77O channel 8 high. b14 = ANSI77U channel 8 low. b15 = ANSI77U channel 8 low, low.	Word / F2		R/W	0 - 65535

Table 15: Extended Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
06010	Control Trip Enabled 11 b00 = ANSI77O channel 1 high, high. b01 = ANSI77U channel 1 low, low. b02 = ANSI77O channel 2 high, high. b03 = ANSI77U channel 2 low, low. b04 = ANSI77O channel 3 high, high. b05 = ANSI77U channel 3 low, low. b06 = ANSI77O channel 4 high, high. b07 = ANSI77U channel 4 low, low. b08 = ANSI77O channel 5 high, high. b09 = ANSI77U channel 5 low, low. b10 = ANSI77O channel 6 high, high. b11 = ANSI77U channel 6 low, low. b12 = ANSI77O channel 7 high, high. b13 = ANSI77U channel 7 low, low. b14 = ANSI77O channel 8 high, high. b15 = ANSI77U channel 8 low, low.	Word / F2		R/W	0 - 65535
06011	ANSI77O Startup Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06012	ANSI77U Startup Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06013	ANSI77O Channel 1 High High Limit	Word / F2		R/W	0 - 65000
06014	ANSI77O Channel 1 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06015	ANSI77O Channel 1 High Limit	Word / F2		R/W	0 - 65000
06016	ANSI77O Channel 1 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06017	ANSI77O Channel 1 Low Limit	Word / F2		R/W	0 - 65000
06018	ANSI77O Channel 1 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06019	ANSI77O Channel 1 Low Low Limit	Word / F2		R/W	0 - 65000
06020	ANSI77O Channel 1 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06021	ANSI77O Channel 2 High High Limit	Word / F2		R/W	0 - 65000
06022	ANSI77O Channel 2 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06023	ANSI77O Channel 2 High Limit	Word / F2		R/W	0 - 65000
06024	ANSI77O Channel 2 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06025	ANSI77O Channel 2 Low Limit	Word / F2		R/W	0 - 65000
06026	ANSI77O Channel 2 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06027	ANSI77O Channel 2 Low Low Limit	Word / F2		R/W	0 - 65000
06028	ANSI77O Channel 2 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06029	ANSI77O Channel 3 High High Limit	Word / F2		R/W	0 - 65000
06030	ANSI77O Channel 3 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06031	ANSI77O Channel 3 High Limit	Word / F2		R/W	0 - 65000
06032	ANSI77O Channel 3 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06033	ANSI77O Channel 3 Low Limit	Word / F2		R/W	0 - 65000
06034	ANSI77O Channel 3 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06035	ANSI77O Channel 3 Low Low Limit	Word / F2		R/W	0 - 65000
06036	ANSI77O Channel 3 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06037	ANSI77O Channel 4 High High Limit	Word / F2		R/W	0 - 65000
06038	ANSI77O Channel 4 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06039	ANSI77O Channel 4 High Limit	Word / F2		R/W	0 - 65000
06040	ANSI77O Channel 4 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06041	ANSI77O Channel 4 Low Limit	Word / F2		R/W	0 - 65000
06042	ANSI77O Channel 4 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06043	ANSI77O Channel 4 Low Low Limit	Word / F2		R/W	0 - 65000

Table 15: Extended Settings (Continue)

Addr	Name	Type / Format	Unit	R/W	Range
06044	ANSI77O Channel 4 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06045	ANSI77O Channel 5 High High Limit	Word / F2		R/W	0 - 65000
06046	ANSI77O Channel 5 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06047	ANSI77O Channel 5 High Limit	Word / F2		R/W	0 - 65000
06048	ANSI77O Channel 5 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06049	ANSI77O Channel 5 Low Limit	Word / F2		R/W	0 - 65000
06050	ANSI77O Channel 5 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06051	ANSI77O Channel 5 Low Low Limit	Word / F2		R/W	0 - 65000
06052	ANSI77O Channel 5 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06053	ANSI77O Channel 6 High High Limit	Word / F2		R/W	0 - 65000
06054	ANSI77O Channel 6 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06055	ANSI77O Channel 6 High Limit	Word / F2		R/W	0 - 65000
06056	ANSI77O Channel 6 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06057	ANSI77O Channel 6 Low Limit	Word / F2		R/W	0 - 65000
06058	ANSI77O Channel 6 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06059	ANSI77O Channel 6 Low Low Limit	Word / F2		R/W	0 - 65000
06060	ANSI77O Channel 6 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06061	ANSI77O Channel 7 High High Limit	Word / F2		R/W	0 - 65000
06062	ANSI77O Channel 7 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06063	ANSI77O Channel 7 High Limit	Word / F2		R/W	0 - 65000
06064	ANSI77O Channel 7 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06065	ANSI77O Channel 7 Low Limit	Word / F2		R/W	0 - 65000
06066	ANSI77O Channel 7 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06067	ANSI77O Channel 7 Low Low Limit	Word / F2		R/W	0 - 65000
06068	ANSI77O Channel 7 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06069	ANSI77O Channel 8 High High Limit	Word / F2		R/W	0 - 65000
06070	ANSI77O Channel 8 High High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06071	ANSI77O Channel 8 High Limit	Word / F2		R/W	0 - 65000
06072	ANSI77O Channel 8 High Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06073	ANSI77O Channel 8 Low Limit	Word / F2		R/W	0 - 65000
06074	ANSI77O Channel 8 Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06075	ANSI77O Channel 8 Low Low Limit	Word / F2		R/W	0 - 65000
06076	ANSI77O Channel 8 Low Low Delay	Word / F2	x 0.1 ms	R/W	0 - 65000
06077	ANSI77 Input Source 0 = None. 1 = Internal Comms Module. 2 = External Comms Module.	Word / F2		R/W	0 - 2

7 Format Tables

Table 16: Format tables

Code	Description
F1	Byte value 0 - 255
F2	Word value 0 - 65535
F3	Float value
F4	Status code (Word Value)
Alarm Flag Active	
1	Unauthorized current
2	Frozen contact. (Current level not going to 0 after trip).
3	Differential Current.
4	Short circuit.
5	I Zero sequence alarm.
6	Reserved.
7	Earth fault.
8	Earth leakage.
9	Running stall condition.
10	Lock rotor on start.
11	Speed 01 running stall or start up problem.
12	Speed 02 running stall or start up problem.
13	Current single phase .
14	Reserved.
15	Current unbalance .
16	Reserved.
17	I Negative sequence .
18	Reserved.
19	I Positive sequence .
20	Reserved.
21	Over current . Load > 100%.
22	Reserved.
23	Neutral monitor .
24	Reserved.
25	Minimum load .
26	Reserved.
27	Differential voltage.
28	Reserved.
29	Insulation lockout < 20kOhm.
30	Reserved.
31	High line voltage frequency .
32	Low line voltage frequency .
33	Rate of frequency change .
34	Reserved.
35	Reserved.
36	Reserved.
37	Maximum Volts/Hz .
38	Minimum Volts/Hz .
39	Reserved.

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
Alarm Flag Active	
40	Reserved.
41	V Zero sequence .
42	Over voltage .
43	Under voltage .
44	Reserved.
45	Reserved.
46	Voltage symmetry .
47	Reserved.
48	V Positive sequence .
49	V Negative sequence .
50	Over speed pulse count 01.
51	Under speed pulse count 01.
52	Over speed pulse count 02.
53	Under speed pulse count 02.
54	Over speed 4 - 20 mA Channel 01.
55	Under speed 4 - 20 mA Channel 01.
56	Over speed 4 - 20 mA Channel 02.
57	Under speed 4 - 20 mA Channel 02.
58	4 - 20 mA input 1 high.
59	4 - 20 mA input 1 low.
60	4 - 20 mA input 2 high.
61	4 - 20 mA input 2 low.
62	4 - 20 mA output 1 high.
63	4 - 20 mA output 1 low.
64	4 - 20 mA output 2 high.
65	b07 = 4 - 20 mA output 2 low.
66	RTD 1 level high.
67	RTD 1 level low.
68	RTD 2 level high.
69	RTD 2 level low.
70	RTD 3 level high.
71	RTD 3 level low.
72	RTD 4 level high.
73	RTD 4 level low.
74	RTD 5 level high.
75	RTD 5 level low.
76	RTD 6 level high.
77	RTD 6 level low.
78	RTD 7 level high.
79	RTD 7 level low.
80	RTD 8 level high.
81	RTD 8 level low.
82	RTD 9 level high.
83	RTD 9 level low.
84	RTD 10 level high.
85	RTD 10 level low.
86	RTD 11 level high.

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
Alarm Flag Active	
87	RTD 11 level low.
88	RTD 12 level high.
89	RTD 12 level low.
90	User trip 01.
91	User trip 02.
92	User trip 03.
93	User trip 04.
94	Direction active power.
95	Direction reactive power.
96	THD magnitude current .
97	THD % current .
98	V THD magnitude high
99	V THD % high
100	Auxiliary under voltage.
101	Auxiliary over voltage.
102	Trip monitor.
103	MCCB trip coil continuous monitor.
104	Execution fault.
105	Feedback fault.
106	CT and VT connection failed.
107	EL CBCT connection failed.
108	Reserved.
109	IO Expander communication lost.
110	RTD 04 module communication lost.
111	RTD 08 module communication lost.
112	4 to 20mA module communication module lost.
113	Internal communication module communication lost.
114	External communication module communication lost.
115	MMI communication lost.
F4 (continue)	Status code (Word Value)
System Flag	
500	Run forward fast.
501	Run forward slow.
502	Run reverse slow.
503	Run reverse fast.
504	Current present . Current level > 10%.
505	Reserved.
506	Forward Feedback signal active
507	Reverse Feedback signal active
508	
509	
510	
511	
512	
513	
514	Protection operation block

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
System Flag	
515	Pre start warning
516	Motor start up.
517	
518	
519	
520	
521	
F4 (continue)	Status code (Word Value)
Trip Flag Active	
1000	Unauthorized current
1001	Differential Current.
1002	Short circuit.
1003	I Zero sequence .
1004	Reserved.
1005	Earth fault.
1006	Earth leakage.
1007	Running stall condition.
1008	Vectorial stall.
1009	Speed 01 running stall or start up problem.
1010	Speed 02 running stall or start up problem.
1011	Current single phase .
1012	Reserved.
1013	Current unbalance .
1014	Reserved.
1015	I Negative sequence .
1016	Reserved.
1017	Neutral over current .
1018	Reserved.
1019	Over current . Current > 100%.
1020	I Positive sequence .
1021	Reserved.
1022	Reserved.
1023	Minimum load current .
1024	Reserved.
1025	Differential voltage.
1026	Angle alarm.

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
Trip Flag Active	
1027	Insulation lockout < 20kOhm.
1028	Do not use.
1029	High line voltage frequency .
1030	Low line voltage frequency .
1031	Rate of frequency change .
1032	Reserved.
1033	Reserved.
1034	Reserved.
1035	Maximum Volts/Hz .
1036	Minimum Volts/Hz .
1037	Reserved.
1038	Reserved.
1039	V Zero sequence .
1040	Over voltage .
1041	Under voltage .
1042	Voltage symmetry .
1043	Reserved.
1044	Reserved.
1045	Reserved.
1046	V Positive sequence .
1047	V Negative sequence .
1048	Voltage phase rotation.
1049	Reserved.
1050	Over speed pulse count 01.
1051	Under speed pulse count 01.
1052	Over speed pulse count 01.
1053	Under speed pulse count 02.
1054	Over speed 4 - 20 mA Channel 01.
1055	Under speed 4 - 20 mA Channel 01.
1056	Over speed 4 - 20 mA Channel 02.
1057	Under speed 4 - 20 mA Channel 02.
1058	4 - 20 mA input 1 high.
1059	4 - 20 mA input 1 low.
1060	4 - 20 mA input 2 high.
1061	4 - 20 mA input 2 low.
1062	4 - 20 mA output 1 high.
1063	4 - 20 mA output 1 low.
1064	4 - 20 mA output 2 high.
1065	4 - 20 mA output 2 low.
1066	RTD 1 level high.
1067	RTD 1 level low.
1068	RTD 2 level high.
1069	RTD 2 level low.
1070	RTD 3 level high.
1071	RTD 3 level low.

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
Trip Flag Active	
1072	RTD 4 level high.
1073	RTD 4 level low.
1074	RTD 5 level high.
1075	RTD 5 level low.
1076	RTD 6 level high.
1077	RTD 6 level low.
1078	RTD 7 level high.
1079	RTD 7 level low.
1080	RTD 8 level high.
1081	RTD 8 level low.
1082	RTD 9 level high.
1083	RTD 9 level low.
1084	RTD 10 level high.
1085	RTD 10 level low.
1086	RTD 11 level high.
1087	RTD 11 level low.
1088	RTD 12 level high.
1089	RTD 12 level low.
1090	User trip 01.
1091	User trip 02.
1092	User trip 03.
1093	User trip 04.
1094	Direction active power.
1095	Direction reactive power.
1096	THD magnitude .
1097	THD % current .
1098	V THD magnitude high
1099	V THD % high
1100	Execution fault.
1101	Feedback fault.
1102	Auxiliary under voltage.
1103	Auxiliary over voltage.
1104	Trip monitor.
1105	MCCB trip coil continuous monitor.
1106	Frozen contact. (Current level not going to 0 after trip).
1107	CT and VT connection failed.
1108	EL CBCT connection failed.
1109	Reserved.
1110	IO Expander communication lost.
1111	RTD 04 module communication lost.
1112	RTD 08 module communication lost.
1113	4 to 20mA module communication module lost.
1114	Internal communication module communication lost.

Table 16: Format tables (Continue)

Code	Description
F4 (continue)	Status code (Word Value)
Trip Flag Active	
1115	External communication module communication lost.
1116	MMI communication lost.
1117	Starts per hour.
1118	Lockout active.
1119	Emergency stop.
1120	Load settings error.
1121	Breaker wear.
1122	Voltage not present .
1123	Reserved.
1124	Watt demand exceeded.
1125	VAr demand exceeded.
1126	VA demand exceeded.
1127	Current demand exceeded.
1128	kWatt peak since last reset.
1129	kVAr peak since last reset.
1130	kVA peak since last reset.
1131	Current peak since last reset.
F4 (continue)	Status code (Word Value)
Trip Flag Active	
60000	Shunt auxiliary state monitor.
System Flag	
60001	Record memory full.
Warning Flag	
60002	Voltage not present .
60003	Reserved.
System Flag	
65528	Back spin active.
65529	Stop active.
65530	Interlock active.
Alarm Flag	
65531	Starts per hour one left.
System Flag	
65532	MCCB sluggish clear time.
65533	Main breaker sluggish clear time.
65534	Starter ready.
65535	Healthy

Table 16: Format tables (Continue)

Code	Description
F5	Warning code (Word Value)
Warning Flag	
1	Unauthorized current
2	Frozen contact. (Current level not going to 0 after trip).
3	Differential Current.
4	Short circuit.
5	I Zero sequence alarm .
6	Reserved.
7	Earth fault.
8	Earth leakage.
9	Running stall condition.
10	Lock rotor on start.
11	Speed 01 running stall or start up problem.
12	Speed 02 running stall or start up problem.
13	Current single phase .
14	Reserved.
15	Current unbalance .
16	Reserved.
17	I Negative sequence .
18	Reserved.
19	I Positive sequence .
20	Reserved.
21	Over current . Load > 100%.
22	Reserved.
23	Neutral monitor .
24	Reserved.
25	Minimum load .
26	Reserved.
27	Differential voltage.
28	Reserved.
29	Insulation lockout < 20kOhm.
30	Reserved.
31	High line voltage frequency .
32	Low line voltage frequency .
33	Rate of frequency change .
34	Reserved.
35	Reserved.
36	Reserved.
37	Maximum Volts/Hz .
38	Minimum Volts/Hz .
39	Reserved.
40	Reserved.
41	V Zero sequence .
42	Over voltage .
43	Under voltage .
44	Reserved.
45	Reserved.
46	Voltage symmetry .
47	Reserved.

Table 16: Format tables (Continue)

Code	Description
F5 (continue)	Warning code (Word Value)
Warning Flag	
48	V Positive sequence .
49	V Negative sequence .
50	Over speed pulse count 01.
51	Under speed pulse count 01.
52	Over speed pulse count 02.
53	Under speed pulse count 02.
54	Over speed 4 - 20 mA Channel 01.
55	Under speed 4 - 20 mA Channel 01.
56	Over speed 4 - 20 mA Channel 02.
57	Under speed 4 - 20 mA Channel 02.
58	4 - 20 mA input 1 high.
59	4 - 20 mA input 1 low.
60	4 - 20 mA input 2 high.
61	4 - 20 mA input 2 low.
62	4 - 20 mA output 1 high.
63	4 - 20 mA output 1 low.
64	4 - 20 mA output 2 high.
65	4 - 20 mA output 2 low.
66	RTD 1 level high.
67	RTD 1 level low.
68	RTD 2 level high.
69	RTD 2 level low.
70	RTD 3 level high.
71	RTD 3 level low.
72	RTD 4 level high.
73	RTD 4 level low.
74	RTD 5 level high.
75	RTD 5 level low.
76	RTD 6 level high.
77	RTD 6 level low.
78	RTD 7 level high.
79	RTD 7 level low.
80	RTD 8 level high.
81	RTD 8 level low.
82	RTD 9 level high.
83	RTD 9 level low.
84	RTD 10 level high.
85	RTD 10 level low.
86	RTD 11 level high.
87	RTD 11 level low.
88	RTD 12 level high.
89	RTD 12 level low.
90	User trip 01.
91	User trip 02.
92	User trip 03.
93	User trip 04.
94	Direction active power.

Table 16: Format tables (Continue)

Code	Description
F5 (continue)	Warning code (Word Value)
Warning Flag	
95	Direction reactive power.
96	THD magnitude current .
97	THD % current .
98	V THD magnitude high
99	V THD % high
100	Auxiliary under voltage.
101	Auxiliary over voltage.
102	Trip monitor.
103	MCCB trip coil continuous monitor.
104	Execution fault.
105	Feedback fault.
106	CT and VT connection failed.
107	EL CBCT connection failed.
108	Reserved.
109	IO Expander communication lost.
110	RTD 04 module communication lost.
111	RTD 08 module communication lost.
112	4 to 20mA module communication module lost.
113	Internal communication module communication lost.
114	External communication module communication lost.
115	MMI communication lost.
400	IL1 Harmonics – High F00 – F31
401	IL2 Harmonics – High F00 – F31
402	IL3 Harmonics – High F00 – F31
403	VL1 Harmonics – High F00 – F31
404	VL2 Harmonics – High F00 – F31
405	VL3 Harmonics – High F00 – F31

Table 16: Format tables (Continue)

Code	Description
F6	Bit structure
Bit 00	Over current alarm , Load Current > 100% of setpoint.
Bit 01	Current unbalance .
Bit 02	Current single phase.
Bit 03	I Positive sequence .
Bit 04	I Negative sequence .
Bit 05	I Zero sequence alarm .
Bit 06	I Neutral monitor .
Bit 07	THD magnitude current .
Bit 08	Minimum load < setpoint.
Bit 09	Short circuit.
Bit 10	Running stall condition.
Bit 11	% THD current > setpoint.
Bit 12	Vectorial stall, rate of change of Power Factor during start up too low.
Bit 13	Unauthorised current
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F7	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Watt demand exceeded.
Bit 13	VAr demand exceeded.
Bit 14	VA demand exceeded.
Bit 15	Current demand exceeded.
F8	Bit structure
Bit 00	Over voltage .
Bit 01	Under voltage .
Bit 02	Voltage symmetry .
Bit 03	Low line voltage frequency.
Bit 04	High line voltage frequency .
Bit 05	Minimum Volts/Hz .
Bit 06	Maximum Volts/Hz .
Bit 07	Rate of frequency change .
Bit 08	Voltage phase on rotati.
Bit 09	V Positive sequence .
Bit 10	V Negative sequence .
Bit 11	V Zero sequence .
Bit 12	% V THD high
Bit 13	V THD magnitude high
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F9	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Voltage not present .
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F10	Bit structure
Bit 00	Auxiliary under voltage.
Bit 01	Auxiliary over voltage.
Bit 02	Earth leakage > setpoint.
Bit 03	Earth fault > setpoint.
Bit 04	Insulation lockout < 20kOhm.
Bit 05	Vacuum failure.
Bit 06	Earth detector.
Bit 07	Reserved.
Bit 08	Apparent power limit .
Bit 09	Reserved.
Bit 10	Power factor limit .
Bit 11	Forward Direction active power.
Bit 12	Forward Direction reactive power.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F11	Bit structure
Bit 00	Speed 01 running or standstill.
Bit 01	Speed 02 running or standstill.
Bit 02	Under speed pulse count low 01.
Bit 03	Under speed pulse count low 02.
Bit 04	Under speed 4-20 mA input on Ch 01.
Bit 05	Under speed 4-20 mA input on Ch 02.
Bit 06	Speed switch zero 01.
Bit 07	Speed switch zero 02.
Bit 08	Over speed pulse count high 01.
Bit 09	Over speed pulse count high 02.
Bit 10	Over speed 4-20 mA input on Ch 01.
Bit 11	Over speed 4-20 mA input on Ch 02.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F12	Bit structure
Bit 00	Main Contactor Trip Coil continous.
Bit 01	Breaker Fail warning.
Bit 02	IO Expander I2C communication lost.
Bit 03	RTD module I2C communication lost.
Bit 04	Internal communication module I2C communication lost.
Bit 05	4 to 20 mA module I2C communication lost.
Bit 06	MMI I2C communication lost.
Bit 07	External communication module I2C communication lost.
Bit 08	CT and VT connection failed.
Bit 09	EL CBCT connection failed.
Bit 10	Reserved.
Bit 11	Frozen contact (Main Contactor failed to open to clear fault).
Bit 12	Breaker operation near end of life.
Bit 13	Safety Maintenance Interlock active.
Bit 14	Emergency stop active.
Bit 15	RTD 08 module I2C communication lost.

Table 16: Format tables (Continue)

Code	Description
F13	Bit structure
Bit 00	4 - 20 mA input Channel 1 high.
Bit 01	4 - 20 mA input Channel 1 low.
Bit 02	4 - 20 mA input Channel 2 high.
Bit 03	4 - 20 mA input Channel 2 low.
Bit 04	4 - 20 mA output Channel 1 high.
Bit 05	4 - 20 mA output Channel 1 low.
Bit 06	4 - 20 mA output Channel 2 high.
Bit 07	4 - 20 mA output Channel 2 low.
Bit 08	RTD 1 temperature level high.
Bit 09	RTD 1 temperature level low.
Bit 10	RTD 2 temperature level high.
Bit 11	RTD 2 temperature level low.
Bit 12	RTD 3 temperature level high.
Bit 13	RTD 3 temperature level low.
Bit 14	RTD 4 temperature level high.
Bit 15	RTD 4 temperature level low.
F14	Bit structure
Bit 00	RTD 5 temperature level high.
Bit 01	RTD 5 temperature level low.
Bit 02	RTD 6 temperature level high.
Bit 03	RTD 6 temperature level low.
Bit 04	RTD 7 temperature level high.
Bit 05	RTD 7 temperature level low.
Bit 06	RTD 8 temperature level high.
Bit 07	RTD 8 temperature level low.
Bit 08	RTD 9 temperature level high.
Bit 09	RTD 9 temperature level low.
Bit 10	RTD 10 temperature level high.
Bit 11	RTD 10 temperature level low.
Bit 12	RTD 11 temperature level high.
Bit 13	RTD 11 temperature level low.
Bit 14	RTD 12 temperature level high.
Bit 15	RTD 12 temperature level low.

Table 16: Format tables (Continue)

Code	Description
F15	Bit structure
Bit 00	Starts per hour, only One start left.
Bit 01	Execution fault, failure of Main Contactor to close within Execution time.
Bit 02	Feedback fault, Main contactor latching circuit failure within Feedback time.
Bit 03	Load settings corruption error.
Bit 04	External Configurable trip 01 active.
Bit 05	External Configurable trip 02 active.
Bit 06	External Configurable trip 03 active.
Bit 07	External Configurable trip 04 active.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F16	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F17	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F18	Bit structure
Bit 00	Current present . Current level > 10%.
Bit 01	Voltage measured Voltage phase > 20VAC for below 1100VAC Voltage phase > 200VAC for above 3300VAC selection.
Bit 02	Reserved.
Bit 03	Reserved..
Bit 04	Record memory full.
Bit 05	Breaker Fault
Bit 06	Pre start warning
Bit 07	Feedback Forward signal active
Bit 08	Feedback Reverse signal active
Bit 09	Run forward fast.
Bit 10	Run forward slow.
Bit 11	Run reverse slow.
Bit 12	Run reverse fast.
Bit 13	Stop active.
Bit 14	Interlock active.
Bit 15	Starter ready.

Table 16: Format tables (Continue)

Code	Description
F19	Bit structure
Bit 00	4 - 20 mA input Channel 1 high.
Bit 01	4 - 20 mA input Channel 1 low.
Bit 02	4 - 20 mA input Channel 2 high.
Bit 03	4 - 20 mA input Channel 2 low.
Bit 04	4 - 20 mA output Channel 1 high.
Bit 05	4 - 20 mA output Channel 1 low.
Bit 06	4 - 20 mA output Channel 2 high.
Bit 07	4 - 20 mA output Channel 2 low.
Bit 08	RTD 1 temperature level high.
Bit 09	RTD 1 temperature level low.
Bit 10	RTD 2 temperature level high.
Bit 11	RTD 2 temperature level low.
Bit 12	RTD 3 temperature level high.
Bit 13	RTD 3 temperature level low.
Bit 14	RTD 4 temperature level high.
Bit 15	RTD 4 temperature level low.
F20	Bit structure
Bit 00	RTD 5 temperature level high.
Bit 01	RTD 5 temperature level low.
Bit 02	RTD 6 temperature level high.
Bit 03	RTD 6 temperature level low.
Bit 04	RTD 7 temperature level high.
Bit 05	RTD 7 temperature level low.
Bit 06	RTD 8 temperature level high.
Bit 07	RTD 8 temperature level low.
Bit 08	RTD 9 temperature level high.
Bit 09	RTD 9 temperature level low.
Bit 10	RTD 10 temperature level high.
Bit 11	RTD 10 temperature level low.
Bit 12	RTD 11 temperature level high.
Bit 13	RTD 11 temperature level low.
Bit 14	RTD 12 temperature level high.
Bit 15	RTD 12 temperature level low.

Table 16: Format tables (Continue)

Code	Description
F21	Bit structure
Bit 00	V L1 lead I L1
Bit 01	V L2 lead I L2.
Bit 02	V L3 lead I L3.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F22	Bit structure
Bit 00	IL1 Fundamental high.
Bit 01	IL1 2nd Harmonics high.
Bit 02	IL1 3rd Harmonics high.
Bit 03	IL1 4th Harmonics high.
Bit 04	IL1 5th Harmonics high.
Bit 05	IL1 6th Harmonics high.
Bit 06	IL1 7th Harmonics high.
Bit 07	IL1 8th Harmonics high.
Bit 08	IL2 Fundamental high.
Bit 09	IL2 2nd Harmonics high.
Bit 10	IL2 3rd Harmonics high.
Bit 11	IL2 4th Harmonics high.
Bit 12	IL2 5th Harmonics high.
Bit 13	IL2 6th Harmonics high.
Bit 14	IL2 7th Harmonics high.
Bit 15	IL2 8th Harmonics high.

Table 16: Format tables (Continue)

Code	Description
F23	Bit structure
Bit 00	IL3 Fundamental high.
Bit 01	IL3 2nd Harmonics high.
Bit 02	IL3 3rd Harmonics high.
Bit 03	IL3 4th Harmonics high.
Bit 04	IL3 5th Harmonics high.
Bit 05	IL3 6th Harmonics high.
Bit 06	IL3 7th Harmonics high.
Bit 07	IL3 8th Harmonics high.
Bit 08	VL1 Fundamental high.
Bit 09	VL1 2nd Harmonics high.
Bit 10	VL1 3rd Harmonics high.
Bit 11	VL1 4th Harmonics high.
Bit 12	VL1 5th Harmonics high.
Bit 13	VL1 6th Harmonics high.
Bit 14	VL1 7th Harmonics high.
Bit 15	VL1 8th Harmonics high.
F24	Bit structure
Bit 00	VL2 Fundamental high.
Bit 01	VL2 2nd Harmonics high.
Bit 02	VL2 3rd Harmonics high.
Bit 03	VL2 4th Harmonics high.
Bit 04	VL2 5th Harmonics high.
Bit 05	VL2 6th Harmonics high.
Bit 06	VL2 7th Harmonics high.
Bit 07	VL2 8th Harmonics high.
Bit 08	VL3 Fundamental high.
Bit 09	VL3 2nd Harmonics high.
Bit 10	VL3 3rd Harmonics high.
Bit 11	VL3 4th Harmonics high.
Bit 12	VL3 5th Harmonics high.
Bit 13	VL3 6th Harmonics high.
Bit 14	VL3 7th Harmonics high.
Bit 15	VL3 8th Harmonics high.

Table 16: Format tables (Continue)

Code	Description
F25	Bit structure
Bit 00	Over current alarm , Load Current > 100% of setpoint.
Bit 01	Current unbalance .
Bit 02	Current single phase .
Bit 03	I Positive sequence .
Bit 04	I Negative sequence .
Bit 05	I Zero sequence alarm .
Bit 06	I Neutral monitor .
Bit 07	THD magnitude current .
Bit 08	Minimum load < setpoint.
Bit 09	Short circuit.
Bit 10	Running stall condition.
Bit 11	% THD current > setpoint.
Bit 12	Vectorial stall, rate of change of Power Factor during start up too low.
Bit 13	Unauthorised current
Bit 14	Reserved.
Bit 15	Reserved.
F26	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Watt demand exceeded.
Bit 13	VAr demand exceeded.
Bit 14	VA demand exceeded.
Bit 15	Current demand exceeded.

Table 16: Format tables (Continue)

Code	Description
F27	Bit structure
Bit 00	Over voltage .
Bit 01	Under voltage .
Bit 02	Voltage symmetry .
Bit 03	Low line voltage frequency .
Bit 04	High line voltage frequency .
Bit 05	Minimum Volts/Hz .
Bit 06	Maximum Volts/Hz .
Bit 07	Rate of frequency change .
Bit 08	Voltage phase on rotati.
Bit 09	V Positive sequence .
Bit 10	V Negative sequence .
Bit 11	V Zero sequence .
Bit 12	V THD % high
Bit 13	V THD magnitude high
Bit 14	Reserved.
Bit 15	Reserved.
F28	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Voltage not present .
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F29	Bit structure
Bit 00	Auxiliary under voltage.
Bit 01	Auxiliary over voltage.
Bit 02	Earth leakage > setpoint.
Bit 03	Earth fault > setpoint.
Bit 04	Insulation lockout < 20kOhm.
Bit 05	Vacuum failure.
Bit 06	Earth detector.
Bit 07	Reserved.
Bit 08	Apparent power limit .
Bit 09	Reserved.
Bit 10	b10 = Power factor limit .
Bit 11	Forward Direction active power.
Bit 12	Forward Direction reactive power.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F30	Bit structure
Bit 00	Speed 01 running or standstill.
Bit 01	Speed 02 running or standstill.
Bit 02	Under speed pulse count low 01.
Bit 03	Under speed pulse count low 02.
Bit 04	Under speed 4-20 mA input on Ch 01.
Bit 05	Under speed 4-20 mA input on Ch 02.
Bit 06	Speed switch zero 01.
Bit 07	Speed switch zero 02.
Bit 08	Over speed pulse count high 01.
Bit 09	Over speed pulse count high 02.
Bit 10	Over speed 4-20 mA input on Ch 01.
Bit 11	Over speed 4-20 mA input on Ch 02.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F31	Bit structure
Bit 00	Main Contactor Trip Coil continous.
Bit 01	Breaker Fail warning.
Bit 02	IO Expander I2C communication lost.
Bit 03	RTD module I2C communication lost.
Bit 04	Internal communication module I2C communication lost.
Bit 05	4 to 20 mA module I2C communication lost.
Bit 06	MMI I2C communication lost.
Bit 07	External communication module I2C communication lost.
Bit 08	CT and VT connection failed.
Bit 09	EL CBCT connection failed.
Bit 10	Reserved.
Bit 11	Frozen contact (Main Contactor failed to open to clear fault).
Bit 12	Breaker operation near end of life.
Bit 13	Safety Maintenance Interlock active.
Bit 14	Emergency stop active.
Bit 15	RTD 08 module I2C communication lost.
F32	Bit structure
Bit 00	4 - 20 mA input Channel 1 high.
Bit 01	4 - 20 mA input Channel 1 low.
Bit 02	4 - 20 mA input Channel 2 high.
Bit 03	4 - 20 mA input Channel 2 low.
Bit 04	4 - 20 mA output Channel 1 high.
Bit 05	4 - 20 mA output Channel 1 low.
Bit 06	4 - 20 mA output Channel 2 high.
Bit 07	4 - 20 mA output Channel 2 low.
Bit 08	RTD 1 temperature level high.
Bit 09	RTD 1 temperature level low.
Bit 10	RTD 2 temperature level high.
Bit 11	RTD 2 temperature level low.
Bit 12	RTD 3 temperature level high.
Bit 13	RTD 3 temperature level low.
Bit 14	RTD 4 temperature level high.
Bit 15	RTD 4 temperature level low.

Table 16: Format tables (Continue)

Code	Description
F33	Bit structure
Bit 00	RTD 5 temperature level high.
Bit 01	RTD 5 temperature level low.
Bit 02	RTD 6 temperature level high.
Bit 03	RTD 6 temperature level low.
Bit 04	RTD 7 temperature level high.
Bit 05	RTD 7 temperature level low.
Bit 06	RTD 8 temperature level high.
Bit 07	RTD 8 temperature level low.
Bit 08	RTD 9 temperature level high.
Bit 09	RTD 9 temperature level low.
Bit 10	RTD 10 temperature level high.
Bit 11	RTD 10 temperature level low.
Bit 12	RTD 11 temperature level high.
Bit 13	RTD 11 temperature level low.
Bit 14	RTD 12 temperature level high.
Bit 15	RTD 12 temperature level low.
F34	Bit structure
Bit 00	Starts per hour, only One start left.
Bit 01	Execution fault, failure of Main Contactor to close within Execution time.
Bit 02	Feedback fault, Main contactor latching circuit failure within Feedback time.
Bit 03	Load settings corruption error.
Bit 04	External Configurable trip 01 active.
Bit 05	External Configurable trip 02 active.
Bit 06	External Configurable trip 03 active.
Bit 07	External Configurable trip 04 active.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F35	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F36	Bit structure
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F37	CTMB model number
0	CTMB 1
1	CTMB 5
2	CTMB 25
3	CTMB 50
4	CTMB 100
5	CTMB 300
F38	4 - 20 mA reading
0 - 255	Value / 0.1 = mA
F39	RTD reading
PT100 or PT1000	Value - 30 = Degree C
NTC or PTC	Value * 10 = Ohm
F40	Logic flags
Bit 00	Field input 01.
Bit 01	Field input 02.
Bit 02	Field input 03.
Bit 03	Field input 04.
Bit 04	Field input 05.
Bit 05	Field input 06.
Bit 06	Field input 07.
Bit 07	External field input 08.
Bit 08	External field input 09.
Bit 09	External field input 10.
Bit 10	External field input 11.
Bit 11	External field input 12.
Bit 12	External field input 13.
Bit 13	External field input 14.
Bit 14	External field input 15.
Bit 15	Simulation active.
F41	Logic flags
Bit 00	Relay output 01.
Bit 01	Relay output 02.
Bit 02	Relay output 03.
Bit 03	Relay output 04.
Bit 04	External relay output 05.
Bit 05	External relay output 06.
Bit 06	External relay output 07.
Bit 07	External relay output 08.
Bit 08	Logic function 1 output.
Bit 09	Logic function 2 output.
Bit 10	Logic function 3 output.
Bit 11	Logic function 4 output.
Bit 12	Logic function 5 output.
Bit 13	Logic function 6 output.
Bit 14	Latch A.
Bit 15	Latch B.

Table 16: Format tables (Continue)

Code	Description
F42	Logic flags
Bit 00	Counter A output.
Bit 01	Counter B output.
Bit 02	RTC output.
Bit 03	Status reporter.
Bit 04	Thermal Capacity warning level.
Bit 05	Pulse generator output.
Bit 06	Timer A output.
Bit 07	Timer A pulse output.
Bit 08	Timer B output.
Bit 09	Timer B pulse output.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F43	Logic flags
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F44	Logic flags
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F45	Logic flags
Bit 00	Local selection bit lsb.
Bit 01	Local selection bit msb.
Bit 02	Feedback Forward signal active.
Bit 03	Feedback Reverse signal active.
Bit 04	Starter ready.
Bit 05	Pre start warning active.
Bit 06	Backspin timer active.
Bit 07	Transition timer active.
Bit 08	DC brake timer active.
Bit 09	Any stop active.
Bit 10	Any interlock active.
Bit 11	Emergency stop active.
Bit 12	Lockout active.
Bit 13	Pre start warning complete.
Bit 14	Star timer active.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F46	Logic flags
Bit 00	Local forward fast.
Bit 01	Local forward slow.
Bit 02	Local interlock.
Bit 03	Local stop.
Bit 04	Local reverse slow.
Bit 05	Local reverse fast.
Bit 06	Remote forward fast.
Bit 07	Remote forward slow.
Bit 08	Remote interlock.
Bit 09	Remote stop.
Bit 10	Remote reverse slow.
Bit 11	Remote reverse fast.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F47	Logic flags
Bit 00	Auto forward fast.
Bit 01	Auto forward slow.
Bit 02	Auto interlock.
Bit 03	Auto stop.
Bit 04	Auto reverse slow.
Bit 05	Auto reverse fast.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F48	Logic flags
Bit 00	Starter Flag MotorRun00
Bit 01	Starter Flag MotorRun01.
Bit 02	Starter Flag MotorRun02.
Bit 03	Starter Flag MotorRun03.
Bit 04	Starter Flag MotorRun04.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F49	Logic flags
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F50	Word map able variables
0	Zero
1	One
2	
F51	Minimum load reset time
0	Manual.
1	10 seconds.
2	2 minutes.
3	10 minutes.
4	20 minutes.
5	30 minutes.
6	45 minutes.
7	1 hour.
8	3 hours.
9	6 hours.
F52	Earth leakage trip type selection
0	Instantaneous
1	IDMT
2	IEC NINV
3	IEC VINV
4	IEC LINV
5	IEC EINV
6	ANSI MINV
7	ANSI VINV
8	ANSI EINV
9	Thermal flat
10	IT
11	I2T
12	I4T
F53	Word map able variables
0	Current to current phase.
1	Voltage to voltage phase.
2	Current to voltage.
F54	Thermal model
0	IEC 60255-08 Machine I2T.
1	DEFT
2	IEC NINV
3	IEC VINV
4	IEC LINV
5	IEC EINV
6	ANSI MINV
7	ANSI VINV
8	ANSI EINV
9	Thermal flat
10	IT
11	I2T
12	I4T

Table 16: Format tables (Continue)

Code	Description
F55	Modules connected
Bit 00	Reserved.
Bit 01	IO expander connected.
Bit 02	MMI connected.
Bit 03	4 to 20mA connected.
Bit 04	RTD 04 channel connected.
Bit 05	RTD 08 channel connected.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F56	Control features
Bit 00	Auto calculate Thermal Capacity (TC) reset threshold. Dynamic thermal memory reset calculton
Bit 01	Auto thermal reset enabled.
Bit 02	Minimum load source 0 = current or 1 = power. For CTMB 01.
Bit 03	Minimum load source 0 = current or 1 = power. For CTMB 02.
Bit 04	Relay 1 fail safe enabled. (Relay 1 must be set as dedicated trip relay).
Bit 05	Relay 1 configured as logic.
Bit 06	Voltage phase rotation direction. 0 = RWB, 1 = BWR.
Bit 07	Voltage phase 02 rotation direction. 0 = RWB, 1 = BWR.
Bit 08	Power factor limit auto reset.
Bit 09	Power factor limit leading or lagging trip.
Bit 10	Power factor limit auto reset leading or lagging.
Bit 11	Apparent power limit auto reset.
Bit 12	Apparent power limit leading or lagging trip.
Bit 13	Apparent power limit auto reset leading or lagging.
Bit 14	Demand window 0 = sliding or 1 = fixed.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F57	Control features
Bit 00	External Configurable trip 01 active high.
Bit 01	External Configurable trip 02 active high.
Bit 02	External Configurable trip 03 active high.
Bit 03	External Configurable trip 04 active high.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	b14 = Reserved.
Bit 15	b15 = Reserved.
F58	Warnings/trip enabled
Bit 00	Current unbalance enabled.
Bit 01	Single phase enabled.
Bit 02	I Positive sequence enabled.
Bit 03	I Negative sequence enabled.
Bit 04	I Zero sequence enabled.
Bit 05	Neutral over current enabled.
Bit 06	THD magnitude current enabled.
Bit 07	Minimum load enabled.
Bit 08	High high short circuit enabled.
Bit 09	Running stall enabled.
Bit 10	% THD current enabled.
Bit 11	Vectorial stall enabled.
Bit 12	Unauthorized current enabled.
Bit 13	Differential current enabled.
Bit 14	Phase angle enabled.
Bit 15	High short circuit enabled.

Table 16: Format tables (Continue)

Code	Description
F59	Warnings/trip enabled
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Watt demand enabled.
Bit 08	VAr demand enabled.
Bit 09	VA demand enabled.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F60	Warnings/trip enabled
Bit 00	Over voltage for enabled.
Bit 01	Under voltage for enabled.
Bit 02	Voltage symmetry for enabled.
Bit 03	Voltage low frequency for enabled.
Bit 04	Voltage high frequency for enabled.
Bit 05	Minimum Volts/Hz for enabled.
Bit 06	Maximum Volts/Hz for enabled.
Bit 07	Rate of frequency change for enabled.
Bit 08	Voltage phase for rotation enabled.
Bit 09	Voltage positive sequence for enabled.
Bit 10	Voltage negative sequence for enabled.
Bit 11	Voltage zero sequence for enabled.
Bit 12	% THD voltage for enabled.
Bit 13	THD magnitude voltage enabled.
Bit 14	Differential voltage enabled.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F61	Warnings/trip enabled
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Voltage for not present.
Bit 12	Reserved.
Bit 13	Directional active power.
Bit 14	Directional reactive power.
Bit 15	Reserved.
F62	Warnings/trip enabled
Bit 00	Auxiliary under voltage enabled.
Bit 01	Auxiliary over voltage enabled.
Bit 02	Earth leakage and earth fault enabled.
Bit 03	Insulation lockout enabled.
Bit 04	Vacuum fail enabled.
Bit 05	Earth detector enabled.
Bit 06	Apparent power limit for enabled.
Bit 07	Reserved.
Bit 08	Power factor limit for enabled.
Bit 09	Protection ANSI 50/27.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	4 - 20 mA input 1 high low enabled.
Bit 13	4 - 20 mA input 2 high low enabled.
Bit 14	4 - 20 mA output 1 high low enabled.
Bit 15	4 - 20 mA output 2 high low enabled.

Table 16: Format tables (Continue)

Code	Description
F63	Warnings/trip enabled
Bit 00	Speed switch 01 running or standstill enabled.
Bit 01	Speed switch 02 running or standstill enabled.
Bit 02	Over speed pulse count high 01 enabled.
Bit 03	Under speed pulse count low 01 enabled.
Bit 04	Over speed pulse count high 02 enabled.
Bit 05	Under speed pulse count low 02 enabled.
Bit 06	Over speed 4-20 mA input on Ch 01 enabled.
Bit 07	Under speed 4-20 mA input on Ch 01 enabled.
Bit 08	Over speed 4-20 mA input on Ch 02 enabled.
Bit 09	Under speed 4-20 mA input on Ch 02 enabled.
Bit 10	Main Contactor Trip monitor enabled enabled.
Bit 11	Breaker Fail monitor enabled enabled.
Bit 12	Breaker wear enabled.
Bit 13	Starts per hour enabled.
Bit 14	Reserved.
Bit 15	Reserved.
F64	Warnings/trip enabled
Bit 00	RTD 1 Short Circuit trip enabled.
Bit 01	RTD 1 temperature low trip enabled.
Bit 02	RTD 1 temperature high trip enabled.
Bit 03	RTD 1 Open Circuit trip enabled.
Bit 04	RTD 2 Short Circuit trip enabled.
Bit 05	RTD 2 temperature low trip enabled.
Bit 06	RTD 2 temperature high trip enabled.
Bit 07	RTD 2 Open Circuit trip enabled.
Bit 08	RTD 3 Short Circuit trip enabled.
Bit 09	RTD 3 temperature low trip enabled.
Bit 10	RTD 3 temperature high trip enabled.
Bit 11	RTD 3 Open Circuit trip enabled.
Bit 12	RTD 4 Short Circuit trip enabled.
Bit 13	RTD 4 temperature low trip enabled.
Bit 14	RTD 4 temperature high trip enabled.
Bit 15	RTD 4 Open Circuit trip enabled.

Table 16: Format tables (Continue)

Code	Description
F65	Warnings/trip enabled
Bit 00	RTD 5 Short Circuit trip enabled.
Bit 01	RTD 5 temperature low trip enabled.
Bit 02	RTD 5 temperature high trip enabled.
Bit 03	RTD 5 Open Circuit trip enabled.
Bit 04	RTD 6 Short Circuit trip enabled.
Bit 05	RTD 6 temperature low trip enabled.
Bit 06	RTD 6 temperature high trip enabled.
Bit 07	RTD 6 Open Circuit trip enabled.
Bit 08	RTD 7 Short Circuit trip enabled.
Bit 09	RTD 7 temperature low trip enabled.
Bit 10	RTD 7 temperature high trip enabled.
Bit 11	RTD 7 Open Circuit trip enabled.
Bit 12	RTD 8 Short Circuit trip enabled.
Bit 13	RTD 8 temperature low trip enabled.
Bit 14	RTD 8 temperature high trip enabled.
Bit 15	RTD 8 Open Circuit trip enabled.
F66	Warnings/trip enabled
Bit 00	RTD 9 Short Circuit trip enabled.
Bit 01	RTD 9 temperature low trip enabled.
Bit 02	RTD 9 temperature high trip enabled.
Bit 03	RTD 9 Open Circuit trip enabled.
Bit 04	RTD 10 Short Circuit trip enabled.
Bit 05	RTD 10 temperature low trip enabled.
Bit 06	RTD 10 temperature high trip enabled.
Bit 07	RTD 10 Open Circuit trip enabled.
Bit 08	RTD 11 Short Circuit trip enabled.
Bit 09	RTD 11 temperature low trip enabled.
Bit 10	RTD 11 temperature high trip enabled.
Bit 11	RTD 11 Open Circuit trip enabled.
Bit 12	RTD 12 Short Circuit trip enabled.
Bit 13	RTD 12 temperature low trip enabled.
Bit 14	RTD 12 temperature high trip enabled.
Bit 15	RTD 12 Open Circuit trip enabled.

Table 16: Format tables (Continue)

Code	Description
F67	Warnings/trip enabled
Bit 00	External Configurable trip 01.
Bit 01	External Configurable trip 02.
Bit 02	External Configurable trip 03.
Bit 03	External Configurable trip 04.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.
F68	Warnings/trip enabled
Bit 00	Reserved.
Bit 01	Reserved.
Bit 02	Reserved.
Bit 03	Reserved.
Bit 04	Reserved.
Bit 05	Reserved.
Bit 06	Reserved.
Bit 07	Reserved.
Bit 08	Reserved.
Bit 09	Reserved.
Bit 10	Reserved.
Bit 11	Reserved.
Bit 12	Reserved.
Bit 13	Reserved.
Bit 14	Reserved.
Bit 15	Reserved.

Table 16: Format tables (Continue)

Code	Description
F69	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00000	Zero('0')
00001	One('1')
00002	SF In service
00003	SF Volt present VTMB01
00004	
00005	
00006	
00007	SF Breaker fault warning
00008	SF Pre start warning
00009	SF Feedback active
00010	Reserved.
00011	SF Run forward fast
00012	SF Run forward slow
00013	SF Run reverse slow
00014	SF Run reverse fast
00015	SF Stop active
00016	SF Interlock active
00017	SF Starter ready
00018	SF Masked alarm flag
00019	SF Masked trip flag
00020	
00021	
00022	
00023	
00024	
00025	
00026	
00027	
00028	
00029	
00030	
00031	
00032	
00033	
00034	
00035	
00036	
00037	
00038	
00039	
00040	
00041	
00042	
00043	
00044	
00045	
00046	
00047	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00048	
00049	
00050	SF V lead I
00051	SF MCCB slug trip
00052	SF Main contact slug trip
00053	SF Motor start up
00054	SF Motor running
00055	SF Motor stopped
00056	
00057	
00058	
00059	
00060	
00061	
00062	
00063	
00064	
00065	
00066	SF IL1 fundamental 00 high
00067	SF IL1 fundamental 01 high
00068	SF IL1 fundamental 02 high
00069	SF IL1 fundamental 03 high
00070	SF IL1 fundamental 04 high
00071	SF IL1 fundamental 05 high
00072	SF IL1 fundamental 06 high
00073	SF IL1 fundamental 07 high
00074	SF IL1 fundamental 08 high
00075	SF IL1 fundamental 09 high
00076	
00077	
00078	
00079	
00080	
00081	
00082	
00083	
00084	
00085	
00086	
00087	
00088	
00089	
00090	
00091	
00092	
00093	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00094	
00095	SF IL2 fundamental 00 high
00096	SF IL2 fundamental 01 high
00097	SF IL2 fundamental 02 high
00098	SF IL2 fundamental 03 high
00099	SF IL2 fundamental 04 high
00100	SF IL2 fundamental 05 high
00101	SF IL2 fundamental 06 high
00102	SF IL2 fundamental 07 high
00103	SF IL2 fundamental 08 high
00104	SF IL2 fundamental 09 high
00105	
00106	
00107	
00108	
00109	
00110	
00111	
00112	
00113	
00114	
00115	
00116	
00117	
00118	
00119	
00120	
00121	
00122	
00123	
00124	SF IL3 fundamental 00 high
00125	SF IL3 fundamental 01 high
00126	SF IL3 fundamental 02 high
00127	SF IL3 fundamental 03 high
00128	SF IL3 fundamental 04 high
00129	SF IL3 fundamental 05 high
00130	SF IL3 fundamental 06 high
00131	SF IL3 fundamental 07 high
00132	SF IL3 fundamental 08 high
00133	SF IL3 fundamental 09 high
00134	
00135	
00136	
00137	
00138	
00139	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00140	
00141	
00142	
00143	
00144	
00145	
00146	
00147	
00148	
00149	
00150	
00151	
00152	
00153	SF VL1 fundamental 00 high
00154	SF VL1 fundamental 01 high
00155	SF VL1 fundamental 02 high
00156	SF VL1 fundamental 03 high
00157	SF VL1 fundamental 04 high
00158	SF VL1 fundamental 05 high
00159	SF VL1 fundamental 06 high
00160	SF VL1 fundamental 07 high
00161	SF VL1 fundamental 08 high
00162	SF VL1 fundamental 09 high
00163	
00164	
00165	
00166	
00167	
00168	
00169	
00170	
00171	
00172	
00173	
00174	
00175	
00176	
00177	
00178	
00179	
00180	
00181	
00182	SF VL2 fundamental 00 high
00183	SF VL2 fundamental 01 high
00184	SF VL2 fundamental 02 high
00185	SF VL2 fundamental 03 high

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00186	SF VL2 fundamental 04 high
00187	SF VL2 fundamental 05 high
00188	SF VL2 fundamental 06 high
00189	SF VL2 fundamental 07 high
00190	SF VL2 fundamental 08 high
00191	SF VL2 fundamental 09 high
00192	
00193	
00194	
00195	
00196	
00197	
00198	
00199	
00200	
00201	
00202	
00203	
00204	
00205	
00206	
00207	
00208	
00209	
00210	
00211	SF VL3 fundamental 00 high
00212	SF VL3 fundamental 01 high
00213	SF VL3 fundamental 02 high
00214	SF VL3 fundamental 03 high
00215	SF VL3 fundamental 04 high
00216	SF VL3 fundamental 05 high
00217	SF VL3 fundamental 06 high
00218	SF VL3 fundamental 07 high
00219	SF VL3 fundamental 08 high
00220	SF VL3 fundamental 09 high
00221	
00222	
00223	
00224	
00225	
00226	
00227	
00228	
00229	
00230	
00231	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00232	
00233	
00234	
00235	
00236	
00237	
00238	
00239	
00240	WF Over current
00241	WF Current unbalance
00242	WF Current single phase
00243	WF I positive sequence
00244	WF I negative sequence
00245	WF I zero sequence
00246	
00247	WF Current TOTAL HARMONIC DISTORTION magnitude
00248	WF Current minimum load
00249	WF Short circuit
00250	WF Running stall
00251	WF Current TOTAL HARMONIC DISTORTION %
00252	WF Vectorial stall
00253	WF Unauthorized current
00254	
00255	
00256	
00257	
00258	
00259	
00260	
00261	
00262	
00263	
00264	WF Phase angle
00265	
00266	
00267	
00268	WF kWatt demand exceeded
00269	WF kVAr demand exceeded
00270	WF kVA demand exceeded
00271	WF Current demand exceeded
00272	WF Over voltage
00273	WF Under voltage
00274	WF Voltage symmetry

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00275	WF Voltage line frequency low
00276	WF Voltage line frequency high
00277	WF Minimum Volts per Hz
00278	WF Maximum Volts per Hz
00279	WF Rate of frequency change
00280	WF Voltage phase rotation
00281	WF V positive sequence
00282	WF V negative sequence
00283	WF V zero sequence
00284	WF V Total Harmonic Distortion % high
00285	WF V Total Harmonic Distortion magnitude high
00286	
00287	
00288	
00289	
00290	
00291	
00292	
00293	
00294	
00295	
00296	
00297	WF Voltage not present
00298	
00299	WF kWatt peak demand exceeded
00300	WF kVAr peak demand exceeded
00301	WF kVA peak demand exceeded
00302	WF Current peak demand exceeded
00303	
00304	
00305	
00306	WF Earth leakage
00307	WF Earth fault
00308	WF Insulation lockout
00309	
00310	
00311	
00312	
00313	
00314	WF Power factor limit
00315	
00316	
00317	
00318	
00319	
00320	WF Speed switch 01 run or start up stall error

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00321	WF Speed switch 02 run or start up stall error
00322	
00323	
00324	
00325	
00326	
00327	
00328	
00329	
00330	
00331	
00332	
00333	
00334	
00335	
00336	WF Trip monitor
00337	WF Breaker monitor
00338	WF IO expander I2C communication lost
00339	WF RTD04 module I2C communication lost
00340	WF Internal comms module I2C communication lost
00341	WF 4 to 20mA I2C communication lost
00342	WF MMI I2C communication lost
00343	WF External comms module I2C communication lost
00344	WF CTMB and VTMB connection failed
00345	WF Earth leakage CBCT connection lost
00346	
00347	WF Frozen contact
00348	WF Breaker wear
00349	WF Lockout active
00350	WF Emergency stop
00351	WF RTD08 module I2C communication lost
00352	WF 4 - 20 mA in 1 high low
00353	WF 4 - 20 mA in 1 low high
00354	WF 4 - 20 mA in 2 high low
00355	WF 4 - 20 mA in 2 low high
00356	WF 4 - 20 mA out 1 high low
00357	WF 4 - 20 mA out 1 low high
00358	WF 4 - 20 mA out 2 high low
00359	WF 4 - 20 mA out 2 low high
00360	WF RTD 1 temperature high low
00361	WF RTD 1 temperature low high
00362	WF RTD 2 temperature high low
00363	WF RTD 2 temperature low high
00364	WF RTD 3 temperature high low
00365	WF RTD 3 temperature low high
00366	WF RTD 4 temperature high low

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00367	WF RTD 4 temperature low high
00368	WF RTD 5 temperature high low
00369	WF RTD 5 temperature low high
00370	WF RTD 6 temperature high low
00371	WF RTD 6 temperature low high
00372	WF RTD 7 temperature high low
00373	WF RTD 7 temperature low high
00374	WF RTD 8 temperature high low
00375	WF RTD 8 temperature low high
00376	WF RTD 9 high low
00377	WF RTD 9 temperature low high
00378	WF RTD 10 temperature high low
00379	WF RTD 10 temperature low high
00380	WF RTD 11 temperature high low
00381	WF RTD 11 temperature low high
00382	WF RTD 12 temperature high low
00383	WF RTD 12 temperature low high
00384	WF One start left
00385	WF Execution fault
00386	WF Feedback fault
00387	WF Load settings error
00388	WF External Configurable trip 1
00389	WF External Configurable trip 2
00390	WF External Configurable trip 3
00391	WF External Configurable trip 4
00392	
00393	
00394	
00395	
00396	
00397	
00398	
00399	
00400	
00401	
00402	
00403	
00404	
00405	
00406	
00407	
00408	
00409	
00410	
00411	
00412	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00413	
00414	
00415	
00416	
00417	
00418	
00419	
00420	
00421	
00422	
00423	
00424	
00425	
00426	
00427	
00428	
00429	
00430	
00431	
00432	
00433	AF Over current
00434	AF Current unbalance
00435	AF Current single phase
00436	AF I positive sequence
00437	AF I negative sequence
00438	AF I zero sequence
00439	
00440	AF Current TOTAL HARMONIC DISTORTION magnitude
00441	AF Current minimum load
00442	AF Short circuit
00443	AF Running stall condition
00444	AF Current TOTAL HARMONIC DISTORTION %
00445	AF Vectorial stall
00446	AF Unauthorized current
00447	
00448	
00449	
00450	
00451	
00452	
00453	
00454	
00455	
00456	
00457	AF Phase angle
00458	

Table 16: Format tables (Continue)

Code	Description
F69	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00459	
00460	
00461	AF kWatt Demand exceeded
00462	AF kVAr Demand exceeded
00463	AF kVA Demand exceeded
00464	AF Current Demand exceeded
00465	AF Over voltage
00466	AF Under voltage
00467	AF Voltage symmetry
00468	AF Volt low line frequency
00469	AF Volt high line frequency
00470	AF Minimum Volts per Hz
00471	AF Maximum Volts per Hz
00472	AF Rate of frequency change
00473	AF Voltage phase rotation
00474	AF V positive sequence
00475	AF V negative sequence
00476	AF V zero sequence
00477	AF Voltage Total Harmonic Distortion %
00478	AF Voltage Total Harmonic Distortion magnitude
00479	
00480	
00481	
00482	
00483	
00484	
00485	
00486	
00487	
00488	
00489	
00490	AF Voltage not present
00491	
00492	AF kWatt Peak demand exceeded
00493	AF kVAr Peak demand exceeded
00494	AF kVA Peak demand exceeded
00495	AF Current Peak demand exceeded
00496	
00497	
00498	
00499	AF Earth leakage
00500	AF Earth fault
00501	AF Insulation lockout
00502	
00503	
00504	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00505	AF Apparent power limit CT01
00506	
00507	AF Power factor limit CT01
00508	AF Forward Direction active power
00509	AF Forward Direction reactive power
00510	
00511	
00512	
00513	AF Speed switch 01 run or start up stall error
00514	AF Speed switch 02 run or start up stall error
00515	
00516	
00517	
00518	
00519	
00520	
00521	
00522	
00523	
00524	
00525	
00526	
00527	
00528	
00529	AF Main contactor trip monitor
00530	AF Breaker fail monitor
00531	AF IO expander I2C communication lost
00532	AF RTD04 module I2C communication lost
00533	AF Internal comms module I2C communication lost
00534	AF 4 to 20mA I2C communication lost
00535	AF MMI I2C communication lost
00536	AF External comms module I2C communication lost
00537	AF CTMB0 and VTMB0 connection failed
00538	AF Earth leakage CBCT connection lost
00539	
00540	AF Frozen contact
00541	AF Breaker wear
00542	AF Lockout active
00543	AF Emergency stop
00544	AF RTD08 module I2C communication lost
00545	AF 4 - 20 mA input 1 high low
00546	AF 4 - 20 mA input 1 low high
00547	AF 4 - 20 mA input 2 high low
00548	AF 4 - 20 mA input 2 low high
00549	AF 4 - 20 mA output 1 high low
00550	AF 4 - 20 mA output 1 low high

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00551	AF 4 - 20 mA output 2 high low
00552	AF 4 - 20 mA output 2 low high
00553	AF RTD 1 temperature high low
00554	AF RTD 1 temperature low high
00555	AF RTD 2 temperature high low
00556	AF RTD 2 temperature low high
00557	AF RTD 3 temperature high low
00558	AF RTD 3 temperature Low high
00559	AF RTD 4 temperature high low
00560	AF RTD 4 temperature low high
00561	AF RTD 5 temperature high low
00562	AF RTD 5 temperature low high
00563	AF RTD 6 temperature high low
00564	AF RTD 6 temperature low high
00565	AF RTD 7 temperature high low
00566	AF RTD 7 temperature low high
00567	AF RTD 8 temperature high low
00568	AF RTD 8 temperature low high
00569	AF RTD 9 temperature high low
00570	AF RTD 9 temperature low high
00571	AF RTD 10 temperature high low
00572	AF RTD 10 temperature low high
00573	AF RTD 11 temperature high low
00574	AF RTD 11 temperature low high
00575	AF RTD 12 temperature high low
00576	AF RTD 12 temperature low high
00577	AF One start left
00578	AF Execution fault
00579	AF Feedback fault
00580	AF Load settings error
00581	AF External configurable trip 1
00582	AF External configurable trip 2
00583	AF External configurable trip 3
00584	AF External configurable trip 4
00585	
00586	
00587	
00588	
00589	
00590	
00591	
00592	
00593	
00594	
00595	
00596	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00597	
00598	
00599	
00600	
00601	
00602	
00603	
00604	
00605	
00606	
00607	
00608	
00609	
00610	
00611	
00612	
00613	
00614	
00615	
00616	
00617	
00618	
00619	
00620	
00621	
00622	
00623	
00624	
00625	TF Over current
00626	TF Current unbalance
00627	TF Current single phase
00628	TF I positive sequence
00629	TF I negative sequence
00630	TF I zero sequence
00631	
00632	TF Current TOTAL HARMONIC DISTORTION magnitude
00633	TF Current minimum load
00634	TF Short circuit
00635	TF Running stall
00636	TF Current TOTAL HARMONIC DISTORTION %
00637	TF Vectorial stall
00638	TF Unauthorized current
00639	
00640	
00641	
00642	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00643	
00644	
00645	
00646	
00647	
00648	
00649	TF Phase angle
00650	
00651	
00652	
00653	TF kWatt demand exceeded
00654	TF kVAr demand exceeded
00655	TF kVA demand exceeded
00656	TF Current demand exceeded
00657	TF Over voltage
00658	TF Under voltage
00659	TF Voltage symmetry
00660	TF Volt low line frequency
00661	TF Volt high line frequency
00662	TF Minimum Volts per Hz
00663	TF Maximum Volts per Hz
00664	TF Rate of frequency change
00665	TF Voltage phase rotation
00666	TF V positive sequence
00667	TF V negative sequence
00668	TF V zero sequence
00669	TF Voltage TOTAL HARMONIC DISTORTION %
00670	TF Voltage TOTAL HARMONIC DISTORTION magnitude
00671	
00672	
00673	
00674	
00675	
00676	
00677	
00678	
00679	
00680	
00681	
00682	TF Voltage not present
00683	
00684	TF kWatt peak demand exceeded
00685	TF kVAr peak demand exceeded
00686	TF kVA peak demand exceeded
00687	TF Current peak demand exceeded
00688	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00689	
00690	
00691	TF Earth leakage
00692	TF Earth fault
00693	TF Insulation lockout
00694	
00695	
00696	
00697	TF Apparent power limit
00698	
00699	TF Power factor limit
00700	TF Forward Direction active power
00701	TF Forward Direction reactive power
00702	
00703	
00704	
00705	TF Speed switch 01 running or standing
00706	TF Speed switch 02 running or standing
00707	
00708	
00709	
00710	
00711	
00712	
00713	
00714	
00715	
00716	
00717	
00718	
00719	
00720	
00721	TF Main contactor trip monitor
00722	TF Main breaker fail monitor
00723	TF IO expander I2C communication lost
00724	TF RTD04 module I2C communication lost
00725	TF Internal comms module I2C communication lost
00726	TF 4 to 20mA I2C communication lost
00727	TF MMI I2C communication lost
00728	TF External comms module I2C communication lost
00729	TF CTMB and VTMB connection failed
00730	TF Earth leakage CBCT connection lost
00731	
00732	TF Frozen contact
00733	TF Breaker wear
00734	TF Lockout active

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00735	TF Emergency stop
00736	TF RTD08 module I2C communication lost
00737	TF 4 - 20 mA input 1 high high
00738	TF 4 - 20 mA input 1 low low
00739	TF 4 - 20 mA input 2 high high
00740	TF 4 - 20 mA input 2 low low
00741	TF 4 - 20 mA output 1 high high
00742	TF 4 - 20 mA output 1 low low
00743	TF 4 - 20 mA output 2 high high
00744	TF 4 - 20 mA output 2 low low
00719	
00720	
00721	TF Man contactor trip monitor
00722	TF Main breaker fail monitor
00723	TF IO expander I2C communication lost
00724	TF RTD04 module I2C communication lost
00725	TF Internal comms module I2C communication lost
00726	TF 4 to 20mA I2C communication lost
00727	TF MMI I2C communication lost
00728	TF External comms module I2C communication lost
00729	TF CTMB and VTMB connection failed
00730	TF Earth leakage CBCT connection lost
00731	
00732	TF Frozen contact
00733	TF Breaker wear
00734	TF Lockout active
00735	TF Emergency stop
00736	TF RTD08 module I2C communication lost
00737	TF 4 - 20 mA input 1 high high
00738	TF 4 - 20 mA input 1 low low
00739	TF 4 - 20 mA input 2 high high
00740	TF 4 - 20 mA input 2 low low
00741	TF 4 - 20 mA output 1 high high
00742	TF 4 - 20 mA output 1 low low
00743	TF 4 - 20 mA output 2 high high
00744	TF 4 - 20 mA output 2 low low
00745	TF RTD 1 temperature high high
00746	TF RTD 1 temperature low low
00747	TF RTD 2 temperature high high
00748	TF RTD 2 temperature low low
00749	TF RTD 3 temperature high high
00750	TF RTD 3 temperature low low
00751	TF RTD 4 temperature high high
00752	TF RTD 4 temperature low low
00753	TF RTD 5 temperature high high
00754	TF RTD 5 temperature low low

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00755	TF RTD 6 temperature high high
00756	TF RTD 6 temperature low low
00757	TF RTD 7 temperature high high
00758	TF RTD 7 temperature low low
00759	TF RTD 8 temperature high high
00760	TF RTD 8 temperature low low
00761	TF RTD 9 temperature high high
00762	TF RTD 9 temperature low low
00763	TF RTD 10 temperature high high
00764	TF RTD 10 temperature low low
00765	TF RTD 11 temperature high high
00766	TF RTD 11 temperature low low
00767	TF RTD 12 temperature high high
00768	TF RTD 12 temperature low low
00769	TF Starts per hour limit
00770	TF Execution fault
00771	TF Feedback fault
00772	TF Load settings error
00773	TF External configurable trip 1
00774	TF External configurable trip 2
00775	TF External configurable trip 3
00776	TF External configurable trip 4
00777	
00778	
00779	
00780	
00781	
00782	
00783	
00784	
00785	
00786	
00787	
00788	
00789	
00790	
00791	
00792	
00793	
00794	
00795	
00796	
00797	
00798	
00799	
00800	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00801	
00802	
00803	
00804	
00805	
00806	
00807	
00808	
00809	
00810	
00811	
00812	
00813	
00814	
00815	
00816	
00817	GOT input 00
00818	GOT input 01
00819	GOT input 02
00820	GOT input 03
00821	GOT input 04
00822	GOT input 05
00823	GOT input 06
00824	GOT input 07
00825	GOT input 08
00826	GOT input 09
00827	GOT input 10
00828	GOT input 11
00829	GOT input 12
00830	GOT input 13
00831	GOT input 14
00832	GOT input 15
00833	PLC Internal input 00
00834	PLC Internal input 01
00835	PLC Internal input 02
00836	PLC Internal input 03
00837	PLC Internal input 04
00838	PLC Internal input 05
00839	PLC Internal input 06
00840	PLC Internal input 07
00841	PLC Internal input 08
00842	PLC Internal input 09
00843	PLC Internal input 10
00844	PLC Internal input 11
00845	PLC Internal input 12
00846	PLC Internal input 13

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00847	PLC Internal input 14
00848	PLC Internal input 15
00849	PLC External input 00
00850	PLC External input 01
00851	PLC External input 02
00852	PLC External input 03
00853	PLC External input 04
00854	PLC External input 05
00855	PLC External input 06
00856	PLC External input 07
00857	PLC External input 08
00858	PLC External input 09
00859	PLC External input 10
00860	PLC External input 11
00861	PLC External input 12
00862	PLC External input 13
00863	PLC External input 14
00864	PLC External input 15
00865	Digital field input 01
00866	Digital field input 02
00867	Digital field input 03
00868	Digital field input 04
00869	Digital field input 05
00870	Digital field input 06
00871	Digital field input 07
00872	External digital field input 08
00873	External digital field input 09
00874	External digital field input 10
00875	External digital field input 11
00876	External digital field input 12
00877	External digital field input 13
00878	External digital field input 14
00879	External digital field input 15
00880	Simulation active
00881	Relay output 01
00882	Relay output 02
00883	Relay output 03
00884	Relay output 04
00885	External relay output 05
00886	External relay output 06
00887	External relay output 07
00888	External relay output 08
00889	LF Table 1 output
00890	LF Table 2 output
00891	LF Table 3 output
00892	LF Table 4 output

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00893	LF Table 5 output
00894	LF Table 6 output
00895	LF Latch A output
00896	LF Latch B output
00897	LF Counter A output
00898	LF Counter B output
00899	LF RTC output
00900	LF Status reporter
00901	
00902	LF Pulse generator output
00903	LF Timer A output
00904	
00905	LF Timer B output
00906	LF MMI reset
00907	LF External Comms reset
00908	LF Internal Comms reset
00909	LF Field reset
00910	LF Min Load restart flag
00911	LF Reset push button
00912	LF GOT reset
00913	LF Comparator 1 high high
00914	LF Comparator 1 high
00915	LF Comparator 1 high low
00916	LF Comparator 1 between
00917	LF Comparator 1 low high
00918	LF Comparator 1 low
00919	LF Comparator 1 low low
00920	LF Thermal Capacity high
00921	LF Comparator 2 high high
00922	LF Comparator 2 high
00923	LF Comparator 2 high low
00924	LF Comparator 2 between
00925	LF Comparator 2 low high
00926	LF Comparator 2 low
00927	LF Comparator 2 low low
00928	LF Thermal Capacity high high
00929	
00930	
00931	
00932	
00933	
00934	
00935	
00936	
00937	
00938	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00939	
00940	
00941	
00942	
00943	
00944	
00945	SF Location selection bit lsb
00946	SF Location selection bit msb
00947	SF Forward Feedback signal active
00948	SF Reverse Feedback signal active
00949	SF Starter ready
00950	SF Pre start warning active
00951	SF Backspin timer active
00952	SF Transition timer active
00953	SF DC brake timer active
00954	SF Any stop active
00955	SF Any interlock active
00956	SF Emergency stop active
00957	SF Lockout active
00958	SF Pre start warning complete
00959	SF Start timer active
00960	
00961	SF Local forward fast active
00962	SF Local forward slow active
00963	SF Local interlock active
00964	SF Local stop active
00965	SF Local reverse slow active
00966	SF Local reverse fast active
00967	SF Remote forward fast active
00968	SF Remote forward slow active
00969	SF Remote interlock active
00970	SF Remote stop active
00971	SF Remote reverse slow active
00972	SF Remote reverse fast active
00973	
00974	
00975	
00976	
00977	SF Auto forward fast active
00978	SF Auto forward slow active
00979	SF Auto interlock active
00980	SF Auto stop active
00981	SF Auto reverse slow active
00982	SF Auto reverse fast active
00983	
00984	

Table 16: Format tables (Continue)

Code	Description
F69 (continue)	Bit mapable variables. Bit15 0 = Not inverted input, 1 = inverted input.
Value	Description
00985	
00986	
00987	
00988	
00989	
00990	
00991	
00992	
00993	Starter Flag Motor run 00 – Refer to User Manual
00994	Starter Flag Motor run 01 – Refer to User Manual
00995	Starter Flag Motor run 02 – Refer to User Manual
00996	Starter Flag Motor run 03 – Refer to User Manual
00997	Starter Flag Motor run 04 – Refer to User Manual
00998	
00999	
01000	
01001	
01002	
01003	
01004	
01005	
01006	
01007	
01008	
01009	
01010	
01011	
01012	
01013	
01014	
01015	
01016	
01017	
01018	
01019	
01020	
01021	
01022	
01023	
01024	
01025	Alarm flag mask
01026	Trip flag mask

Table 16: Format tables (Continue)

Code	Description
F70	Starter type
0	Protection.
1	Transformer protection.
2	Direct online starter.
3	Direct online reversal starter.
4	Star delta starter.
5	Star delta reversal starter.
6	Dahlander starter.
7	Dahlander reversal starter.
8	Pole-Changing starter.
9	Pole-Changing reversal starter.
10	Soft starter.
11	Reversal soft starter.
12	OCB direct online starter.
13	Feeder
F71	Duration length of the window.
0	0 = 1 Seconds.
1	1 = 4 Seconds.
2	2 = 16 Seconds.
3	3 = 64 Seconds.
4	4 = 4 minutes.
5	5 = 17 Minutes.
6	6 = 1 hour.
7	7 = 4 hours.
8	8 = 18 hours.
9	9 = 3 Days.
10	10 = 12 Days.
11	11 = 48 Days.
12	12 = Reserved.
13	13 = Reserved.
14	14 = Reserved.
15	15 = Reserved.
F72	4 - 20 mA input speed selection
0	None
1	4 - 20 mA input 01
2	4 - 20 mA input 02

Table 16: Format tables (Continue)

Code	Description
F73	Thermal model reset method
0	Manual
1	Instantaneous
2	Delayed
3	Curve
F74	Field Inputs
0	Zero
1	Digital field input 1
2	Digital field input 2
3	Digital field input 3
4	Digital field input 4
5	Digital field input 5
6	Digital field input 6
7	Digital field input 7
8	Digital field input 8
9	Digital field input 9
10	Digital field input 10
11	Digital field input 11
12	Digital field input 12
13	Digital field input 13
14	Digital field input 14
15	Digital field input 15
F75	Earth leakage reset type
0	Manual.
1	Delayed.
2	Calculated curve.
F76	Product Identification Number
19	MEprotect Core,
20	MEprotect Essence,
21	MEprotect Pro,
22	MEprotect Core ADE9078,
23	MEprotect Essence ADE9078,
24	MEprotect Pro ADE9078

7.1 Pointer Tables

7.1.1 Logic Function Table (LF Table)

Table 20: Logic Function table

Value	Description
00000	Zero('0')
00001	One('1')
00002	SF In service
00003	SF Volt present VTMB01
00004	
00005	
00006	
00007	SF Breaker fault warning
00008	SF Pre start warning
00009	SF Forward Feedback active
00010	SF Reverse Feedback active
00011	SF Run forward fast
00012	SF Run forward slow
00013	SF Run reverse slow
00014	SF Run reverse fast
00015	SF Stop active
00016	SF Interlock active
00017	SF Starter ready
00018	SF Masked alarm flag
00019	SF Masked trip flag
00020	
00021	
00022	
00023	
00024	
00025	
00026	
00027	
00028	
00029	
00030	
00031	
00032	
00033	
00034	
00035	
00036	
00037	
00038	
00039	
00040	

Table 20: Logic Function table (Continued)

Value	Description
00041	
00042	
00043	
00044	
00045	
00046	
00047	
00048	
00049	
00050	SF V lead I
00051	SF MCCB slug trip
00052	SF Main contact slug trip
00053	SF Motor start up
00054	SF Motor running
00055	SF Motor stopped
00056	
00057	
00058	
00059	
00060	
00061	
00062	
00063	
00064	
00065	
00066	SF IL1 fundamental 00 high
00067	SF IL1 fundamental 01 high
00068	SF IL1 fundamental 02 high
00069	SF IL1 fundamental 03 high
00070	SF IL1 fundamental 04 high
00071	SF IL1 fundamental 05 high
00072	SF IL1 fundamental 06 high
00073	SF IL1 fundamental 07 high
00074	SF IL1 fundamental 08 high
00075	SF IL1 fundamental 09 high
00076	
00077	
00078	
00079	
00080	
00081	
00082	
00083	
00084	

Table 20: Logic Function table (Continued)

Value	Description
00085	
00086	
00087	
00088	
00089	
00090	
00091	
00092	
00093	
00094	
00095	SF IL2 fundamental 00 high
00096	SF IL2 fundamental 01 high
00097	SF IL2 fundamental 02 high
00098	SF IL2 fundamental 03 high
00099	SF IL2 fundamental 04 high
00100	SF IL2 fundamental 05 high
00101	SF IL2 fundamental 06 high
00102	SF IL2 fundamental 07 high
00103	SF IL2 fundamental 08 high
00104	SF IL2 fundamental 09 high
00105	
00106	
00107	
00108	
00109	
00110	
00111	
00112	
00113	
00114	
00115	
00116	
00117	
00118	
00119	
00120	
00121	
00122	
00123	
00124	SF IL3 fundamental 00 high
00125	SF IL3 fundamental 01 high
00126	SF IL3 fundamental 02 high
00127	SF IL3 fundamental 03 high
00128	SF IL3 fundamental 04 high
00129	SF IL3 fundamental 05 high
00130	SF IL3 fundamental 06 high
00131	SF IL3 fundamental 07 high

Table 20: Logic Function table (Continued)

Value	Description
00132	SF IL3 fundamental 08 high
00133	SF IL3 fundamental 09 high
00134	
00135	
00136	
00137	
00138	
00139	
00140	
00141	
00142	
00143	
00144	
00145	
00146	
00147	
00148	
00149	
00150	
00151	
00152	
00153	SF VL1 fundamental 00 high
00154	SF VL1 fundamental 01 high
00155	SF VL1 fundamental 02 high
00156	SF VL1 fundamental 03 high
00157	SF VL1 fundamental 04 high
00158	SF VL1 fundamental 05 high
00159	SF VL1 fundamental 06 high
00160	SF VL1 fundamental 07 high
00161	SF VL1 fundamental 08 high
00162	SF VL1 fundamental 09 high
00163	
00164	
00165	
00166	
00167	
00168	
00169	
00170	
00171	
00172	
00173	
00174	
00175	
00176	
00177	
00178	

Table 20: Logic Function table (Continued)

Value	Description
00179	
00180	
00181	
00182	SF VL2 fundamental 00 high
00183	SF VL2 fundamental 01 high
00184	SF VL2 fundamental 02 high
00185	SF VL2 fundamental 03 high
00186	SF VL2 fundamental 04 high
00187	SF VL2 fundamental 05 high
00188	SF VL2 fundamental 06 high
00189	SF VL2 fundamental 07 high
00190	SF VL2 fundamental 08 high
00191	SF VL2 fundamental 09 high
00192	
00193	
00194	
00195	
00196	
00197	
00198	
00199	
00200	
00201	
00202	
00203	
00204	
00205	
00206	
00207	
00208	
00209	
00210	
00211	SF VL3 fundamental 00 high
00212	SF VL3 fundamental 01 high
00213	SF VL3 fundamental 02 high
00214	SF VL3 fundamental 03 high
00215	SF VL3 fundamental 04 high
00216	SF VL3 fundamental 05 high
00217	SF VL3 fundamental 06 high
00218	SF VL3 fundamental 07 high
00219	SF VL3 fundamental 08 high
00220	SF VL3 fundamental 09 high
00221	
00222	
00223	
00224	
00225	
00226	
00227	

Table 20: Logic Function table (Continued)

Value	Description
00228	
00229	
00230	
00231	
00232	
00233	
00234	
00235	
00236	
00237	
00238	
00239	
00240	WF Over current
00241	WF Current unbalance
00242	WF Current single phase
00243	WF I positive sequence
00244	WF I negative sequence
00245	WF I zero sequence
00246	
00247	WF Current TOTAL HARMONIC DISTORTION magnitude
00248	WF Current minimum load
00249	WF Short circuit
00250	WF Running stall
00251	WF Current TOTAL HARMONIC DISTORTION %
00252	WF Vectorial stall
00253	WF Unauthorized current
00254	
00255	
00256	
00257	
00258	
00259	
00260	
00261	
00262	
00263	
00264	WF Phase angle
00265	
00266	
00267	
00268	WF kWatt demand exceeded
00269	WF kVAr demand exceeded
00270	WF kVA demand exceeded
00271	WF Current demand exceeded
00272	WF Over voltage
00273	WF Under voltage
00274	WF Voltage symmetry

Table 20: Logic Function table (Continued)

Value	Description
00275	WF Voltage line frequency low
00276	WF Voltage line frequency high
00277	WF Minimum Volts per Hz
00278	WF Maximum Volts per Hz
00279	WF Rate of frequency change
00280	WF Voltage phase rotation
00281	WF V positive sequence
00282	WF V negative sequence
00283	WF V zero sequence
00284	WF V Total Harmonic Distortion % high
00285	WF V Total Harmonic Distortion magnitude high
00286	
00287	
00288	
00289	
00290	
00291	
00292	
00293	
00294	
00295	
00296	
00297	WF Voltage not present
00298	
00299	WF kWatt peak demand exceeded
00300	WF kVAr peak demand exceeded
00301	WF kVA peak demand exceeded
00302	WF Current peak demand exceeded
00303	
00304	
00305	
00306	WF Earth leakage
00307	WF Earth fault
00308	WF Insulation lockout
00309	
00310	
00311	
00312	
00313	
00314	WF Power factor limit
00315	
00316	
00317	
00318	
00319	
00320	WF Speed switch 01 run or start up stall error
00321	WF Speed switch 02 run or start up stall error
00322	

Table 20: Logic Function table (Continued)

Value	Description
00323	
00324	
00325	
00326	
00327	
00328	
00329	
00330	
00331	
00332	
00333	
00334	
00335	
00336	WF Trip monitor
00337	WF Breaker monitor
00338	WF IO expander I2C communication lost
00339	WF RTD04 module I2C communication lost
00340	WF Internal comms module I2C communication lost
00341	WF 4 to 20mA I2C communication lost
00342	WF MMI I2C communication lost
00343	WF External comms module I2C communication lost
00344	WF CTMB and VTMB connection failed
00345	WF Earth leakage CBCT connection lost
00346	
00347	WF Frozen contact
00348	WF Breaker wear
00349	WF Lockout active
00350	WF Emergency stop
00351	WF RTD08 module I2C communication lost
00352	WF 4 - 20 mA in 1 high low
00353	WF 4 - 20 mA in 1 low high
00354	WF 4 - 20 mA in 2 high low
00355	WF 4 - 20 mA in 2 low high
00356	WF 4 - 20 mA out 1 high low
00357	WF 4 - 20 mA out 1 low high
00358	WF 4 - 20 mA out 2 high low
00359	WF 4 - 20 mA out 2 low high
00360	WF RTD 1 temperature high low
00361	WF RTD 1 temperature low high
00362	WF RTD 2 temperature high low
00363	WF RTD 2 temperature low high
00364	WF RTD 3 temperature high low
00365	WF RTD 3 temperature low high
00366	WF RTD 4 temperature high low
00367	WF RTD 4 temperature low high
00368	WF RTD 5 temperature high low
00369	WF RTD 5 temperature low high

Table 20: Logic Function table (Continued)

Value	Description
00370	WF RTD 6 temperature high low
00371	WF RTD 6 temperature low high
00372	WF RTD 7 temperature high low
00373	WF RTD 7 temperature low high
00374	WF RTD 8 temperature high low
00375	WF RTD 8 temperature low high
00376	WF RTD 9 high low
00377	WF RTD 9 temperature low high
00378	WF RTD 10 temperature high low
00379	WF RTD 10 temperature low high
00380	WF RTD 11 temperature high low
00381	WF RTD 11 temperature low high
00382	WF RTD 12 temperature high low
00383	WF RTD 12 temperature low high
00384	WF One start left
00385	WF Execution fault
00386	WF Feedback fault
00387	WF Load settings error
00388	WF External Configurable trip 1
00389	WF External Configurable trip 2
00390	WF External Configurable trip 3
00391	WF External Configurable trip 4
00392	
00393	
00394	
00395	
00396	
00397	
00398	
00399	
00400	
00401	
00402	
00403	
00404	
00405	
00406	
00407	
00408	
00409	
00410	
00411	
00412	
00413	
00414	
00415	
00416	
00417	
00418	

Table 20: Logic Function table (Continued)

Value	Description
00419	
00420	
00421	
00422	
00423	
00424	
00425	
00426	
00427	
00428	
00429	
00430	
00431	
00432	
00433	AF Over current
00434	AF Current unbalance
00435	AF Current single phase
00436	AF I positive sequence
00437	AF I negative sequence
00438	AF I zero sequence
00439	
00440	AF Current TOTAL HARMONIC DISTORTION magnitude
00441	AF Current minimum load
00442	AF Short circuit
00443	AF Running stall condition
00444	AF Current TOTAL HARMONIC DISTORTION %
00445	AF Vectorial stall
00446	AF Unauthorized current
00447	
00448	
00449	
00450	
00451	
00452	
00453	
00454	
00455	
00456	
00457	AF Phase angle
00458	
00459	
00460	
00461	AF kWatt Demand exceeded
00462	AF kVAr Demand exceeded
00463	AF kVA Demand exceeded
00464	AF Current Demand exceeded
00465	AF Over voltage

Table 20: Logic Function table (Continued)

Value	Description
00466	AF Under voltage
00467	AF Voltage symmetry
00468	AF Volt low line frequency
00469	AF Volt high line frequency
00470	AF Minimum Volts per Hz
00471	AF Maximum Volts per Hz
00472	AF Rate of frequency change
00473	AF Voltage phase rotation
00474	AF V positive sequence
00475	AF V negative sequence
00476	AF V zero sequence
00477	AF Voltage Total Harmonic Distortion %
00478	AF Voltage Total Harmonic Distortion magnitude
00479	
00480	
00481	
00482	
00483	
00484	
00485	
00486	
00487	
00488	
00489	
00490	AF Voltage not present
00491	
00492	AF kWatt Peak demand exceeded
00493	AF kVAr Peak demand exceeded
00494	AF kVA Peak demand exceeded
00495	AF Current Peak demand exceeded
00496	
00497	
00498	
00499	AF Earth leakage
00500	AF Earth fault
00501	AF Insulation lockout
00502	
00503	
00504	
00505	AF Apparent power limit CT01
00506	
00507	AF Power factor limit CT01
00508	AF Forward Direction active power
00509	AF Forward Direction reactive power
00510	
00511	
00512	
00513	AF Speed switch 01 run or start up stall error

Table 20: Logic Function table (Continued)

Value	Description
00514	AF Speed switch 02 run or start up stall error
00515	
00516	
00517	
00518	
00519	
00520	
00521	
00522	
00523	
00524	
00525	
00526	
00527	
00528	
00529	AF Main contactor trip monitor
00530	AF Breaker fail monitor
00531	AF IO expander I2C communication lost
00532	AF RTD04 module I2C communication lost
00533	AF Internal comms module I2C communication lost
00534	AF 4 to 20mA I2C communication lost
00535	AF MMI I2C communication lost
00536	AF External comms module I2C communication lost
00537	AF CTMB and VTMB connection failed
00538	AF Earth leakage CBCT connection lost
00539	
00540	AF Frozen contact
00541	AF Breaker wear
00542	AF Lockout active
00543	AF Emergency stop
00544	AF RTD08 module I2C communication lost
00545	AF 4 - 20 mA input 1 high low
00546	AF 4 - 20 mA input 1 low high
00547	AF 4 - 20 mA input 2 high low
00548	AF 4 - 20 mA input 2 low high
00549	AF 4 - 20 mA output 1 high low
00550	AF 4 - 20 mA output 1 low high
00551	AF 4 - 20 mA output 2 high low
00552	AF 4 - 20 mA output 2 low high
00553	AF RTD 1 temperature high low
00554	AF RTD 1 temperature low high
00555	AF RTD 2 temperature high low
00556	AF RTD 2 temperature low high
00557	AF RTD 3 temperature high low
00558	AF RTD 3 temperature Low high
00559	AF RTD 4 temperature high low
00560	AF RTD 4 temperature low high

Table 20: Logic Function table (Continued)

Value	Description
00561	AF RTD 5 temperature high low
00562	AF RTD 5 temperature low high
00563	AF RTD 6 temperature high low
00564	AF RTD 6 temperature low high
00565	AF RTD 7 temperature high low
00566	AF RTD 7 temperature low high
00567	AF RTD 8 temperature high low
00568	AF RTD 8 temperature low high
00569	AF RTD 9 temperature high low
00570	AF RTD 9 temperature low high
00571	AF RTD 10 temperature high low
00572	AF RTD 10 temperature low high
00573	AF RTD 11 temperature high low
00574	AF RTD 11 temperature low high
00575	AF RTD 12 temperature high low
00576	AF RTD 12 temperature low high
00577	AF One start left
00578	AF Execution fault
00579	AF Feedback fault
00580	AF Load settings error
00581	AF External configurable trip 1
00582	AF External configurable trip 2
00583	AF External configurable trip 3
00584	AF External configurable trip 4
00585	
00586	
00587	
00588	
00589	
00590	
00591	
00592	
00593	
00594	
00595	
00596	
00597	
00598	
00599	
00600	
00601	
00602	
00603	
00604	
00605	
00606	
00607	
00608	
00609	

Table 20: Logic Function table (Continued)

Value	Description
00610	
00611	
00612	
00613	
00614	
00615	
00616	
00617	
00618	
00619	
00620	
00621	
00622	
00623	
00624	
00625	TF Over current
00626	TF Current unbalance
00627	TF Current single phase
00628	TF I positive sequence
00629	TF I negative sequence
00630	TF I zero sequence
00631	
00632	TF Current TOTAL HARMONIC DISTORTION magnitude
00633	TF Current minimum load
00634	TF Short circuit
00635	TF Running stall
00636	TF Current TOTAL HARMONIC DISTORTION %
00637	TF Vectorial stall
00638	TF Unauthorized current
00639	
00640	
00641	
00642	
00643	
00644	
00645	
00646	
00647	
00648	
00649	TF Phase angle
00650	
00651	
00652	
00653	TF kWatt demand exceeded
00654	TF kVAr demand exceeded
00655	TF kVA demand exceeded
00656	TF Current demand exceeded

Table 20: Logic Function table (Continued)

Value	Description
00657	TF Over voltage
00658	TF Under voltage
00659	TF Voltage symmetry
00660	TF Volt low line frequency
00661	TF Volt high line frequency
00662	TF Minimum Volts per Hz
00663	TF Maximum Volts per Hz
00664	TF Rate of frequency change
00665	TF Voltage phase rotation
00666	TF V positive sequence
00667	TF V negative sequence
00668	TF V zero sequence
00669	TF Voltage TOTAL HARMONIC DISTORTION %
00670	TF Voltage TOTAL HARMONIC DISTORTION magnitude
00671	
00672	
00673	
00674	
00675	
00676	
00677	
00678	
00679	
00680	
00681	
00682	TF Voltage not present
00683	
00684	TF kWatt peak demand exceeded
00685	TF kVAr peak demand exceeded
00686	TF kVA peak demand exceeded
00687	TF Current peak demand exceeded
00688	
00689	
00690	
00691	TF Earth leakage
00692	TF Earth fault
00693	TF Insulation lockout
00694	
00695	
00696	
00697	TF Apparent power limit
00698	
00699	TF Power factor limit
00700	TF Forward Direction active power
00701	TF Forward Direction reactive power
00702	
00703	

Table 20: Logic Function table (Continued)

Value	Description
00704	
00705	TF Speed switch 01 running or standing
00706	TF Speed switch 02 running or standing
00707	
00708	
00709	
00710	
00711	
00712	
00713	
00714	
00715	
00716	
00717	
00718	
00719	
00720	
00721	TF Main contactor trip monitor
00722	TF Main breaker fail monitor
00723	TF IO expander I2C communication lost
00724	TF RTD04 module I2C communication lost
00725	TF Internal comms module I2C communication lost
00726	TF 4 to 20mA I2C communication lost
00727	TF MMI I2C communication lost
00728	TF External comms module I2C communication lost
00729	TF CTMB and VTMB connection failed
00730	TF Earth leakage CBCT connection lost
00731	
00732	TF Frozen contact
00733	TF Breaker wear
00734	TF Lockout active
00735	TF Emergency stop
00736	TF RTD08 module I2C communication lost
00737	TF 4 - 20 mA input 1 high high
00738	TF 4 - 20 mA input 1 low low
00739	TF 4 - 20 mA input 2 high high
00740	TF 4 - 20 mA input 2 low low
00741	TF 4 - 20 mA output 1 high high
00742	TF 4 - 20 mA output 1 low low
00743	TF 4 - 20 mA output 2 high high
00744	TF 4 - 20 mA output 2 low low
00719	
00720	
00721	TF Man contactor trip monitor
00722	TF Main breaker fail monitor
00723	TF IO expander I2C communication lost
00724	TF RTD04 module I2C communication lost

Table 20: Logic Function table (Continued)

Value	Description
00725	TF Internal comms module I2C communication lost
00726	TF 4 to 20mA I2C communication lost
00727	TF MMI I2C communication lost
00728	TF External comms module I2C communication lost
00729	TF CTMB and VTMB connection failed
00730	TF Earth leakage CBCT connection lost
00731	
00732	TF Frozen contact
00733	TF Breaker wear
00734	TF Lockout active
00735	TF Emergency stop
00736	TF RTD08 module I2C communication lost
00737	TF 4 - 20 mA input 1 high high
00738	TF 4 - 20 mA input 1 low low
00739	TF 4 - 20 mA input 2 high high
00740	TF 4 - 20 mA input 2 low low
00741	TF 4 - 20 mA output 1 high high
00742	TF 4 - 20 mA output 1 low low
00743	TF 4 - 20 mA output 2 high high
00744	TF 4 - 20 mA output 2 low low
00745	TF RTD 1 temperature high high
00746	TF RTD 1 temperature low low
00747	TF RTD 2 temperature high high
00748	TF RTD 2 temperature low low
00749	TF RTD 3 temperature high high
00750	TF RTD 3 temperature low low
00751	TF RTD 4 temperature high high
00752	TF RTD 4 temperature low low
00753	TF RTD 5 temperature high high
00754	TF RTD 5 temperature low low
00755	TF RTD 6 temperature high high
00756	TF RTD 6 temperature low low
00757	TF RTD 7 temperature high high
00758	TF RTD 7 temperature low low
00759	TF RTD 8 temperature high high
00760	TF RTD 8 temperature low low
00761	TF RTD 9 temperature high high
00762	TF RTD 9 temperature low low
00763	TF RTD 10 temperature high high
00764	TF RTD 10 temperature low low
00765	TF RTD 11 temperature high high
00766	TF RTD 11 temperature low low
00767	TF RTD 12 temperature high high
00768	TF RTD 12 temperature low low
00769	TF Starts per hour limit
00770	TF Execution fault
00771	TF Feedback fault

Table 20: Logic Function table (Continued)

Value	Description
00772	TF Load settings error
00773	TF External configurable trip 1
00774	TF External configurable trip 2
00775	TF External configurable trip 3
00776	TF External configurable trip 4
00777	
00778	
00779	
00780	
00781	
00782	
00783	
00784	
00785	
00786	
00787	
00788	
00789	
00790	
00791	
00792	
00793	
00794	
00795	
00796	
00797	
00798	
00799	
00800	
00801	
00802	
00803	
00804	
00805	
00806	
00807	
00808	
00809	
00810	
00811	
00812	
00813	
00814	
00815	
00816	
00817	GOT input 00
00818	GOT input 01
00819	GOT input 02
00820	GOT input 03

Table 20: Logic Function table (Continued)

Value	Description
00821	GOT input 04
00822	GOT input 05
00823	GOT input 06
00824	GOT input 07
00825	GOT input 08
00826	GOT input 09
00827	GOT input 10
00828	GOT input 11
00829	GOT input 12
00830	GOT input 13
00831	GOT input 14
00832	GOT input 15
00833	PLC Internal input 00
00834	PLC Internal input 01
00835	PLC Internal input 02
00836	PLC Internal input 03
00837	PLC Internal input 04
00838	PLC Internal input 05
00839	PLC Internal input 06
00840	PLC Internal input 07
00841	PLC Internal input 08
00842	PLC Internal input 09
00843	PLC Internal input 10
00844	PLC Internal input 11
00845	PLC Internal input 12
00846	PLC Internal input 13
00847	PLC Internal input 14
00848	PLC Internal input 15
00849	PLC External input 00
00850	PLC External input 01
00851	PLC External input 02
00852	PLC External input 03
00853	PLC External input 04
00854	PLC External input 05
00855	PLC External input 06
00856	PLC External input 07
00857	PLC External input 08
00858	PLC External input 09
00859	PLC External input 10
00860	PLC External input 11
00861	PLC External input 12
00862	PLC External input 13
00863	PLC External input 14
00864	PLC External input 15
00865	Digital field input 01
00866	Digital field input 02
00867	Digital field input 03
00868	Digital field input 04
00869	Digital field input 05

Table 20: Logic Function table (Continued)

Value	Description
00870	Digital field input 06
00871	Digital field input 07
00872	External digital field input 08
00873	External digital field input 09
00874	External digital field input 10
00875	External digital field input 11
00876	External digital field input 12
00877	External digital field input 13
00878	External digital field input 14
00879	External digital field input 15
00880	Simulation active
00881	Relay output 01
00882	Relay output 02
00883	Relay output 03
00884	Relay output 04
00885	External relay output 05
00886	External relay output 06
00887	External relay output 07
00888	External relay output 08
00889	LF Table 1 output
00890	LF Table 2 output
00891	LF Table 3 output
00892	LF Table 4 output
00893	LF Table 5 output
00894	LF Table 6 output
00895	LF Latch A output
00896	LF Latch B output
00897	LF Counter A output
00898	LF Counter B output
00899	LF RTC output
00900	LF Status reporter
00901	
00902	LF Pulse generator output
00903	LF Timer A output
00904	
00905	LF Timer B output
00906	LF MMI reset
00907	LF External Comms reset
00908	LF Internal Comms reset
00909	LF Field reset
00910	LF Min Load restart flag
00911	LF Reset push button
00912	LF GOT reset
00913	LF Comparator 1 high high
00914	LF Comparator 1 high
00915	LF Comparator 1 high low
00916	LF Comparator 1 between
00917	LF Comparator 1 low high
00918	LF Comparator 1 low

Table 20: Logic Function table (Continued)

Value	Description
00919	LF Comparator 1 low low
00920	LF Thermal Capacity high
00921	LF Comparator 2 high high
00922	LF Comparator 2 high
00923	LF Comparator 2 high low
00924	LF Comparator 2 between
00925	LF Comparator 2 low high
00926	LF Comparator 2 low
00927	LF Comparator 2 low low
00928	LF Thermal Capacity high high
00929	
00930	
00931	
00932	
00933	
00934	
00935	
00936	
00937	
00938	
00939	
00940	
00941	
00942	
00943	
00944	
00945	SF Location selection bit lsb
00946	SF Location selection bit msb
00947	SF Feedback 01 active
00948	SF Feedback 02 active
00949	SF Starter ready
00950	SF Pre start warning active
00951	SF Backspin timer active
00952	SF Transition timer active
00953	SF DC brake timer active
00954	SF Any stop active
00955	SF Any interlock active
00956	SF Emergency stop active
00957	SF Lockout active
00958	SF Pre start warning complete
00959	SF Start timer active
00960	
00961	SF Local forward fast active
00962	SF Local forward slow active
00963	SF Local interlock active
00964	SF Local stop active
00965	SF Local reverse slow active
00966	SF Local reverse fast active
00967	SF Remote forward fast active

Table 20: Logic Function table (Continued)

Value	Description
00968	SF Remote forward slow active
00969	SF Remote interlock active
00970	SF Remote stop active
00971	SF Remote reverse slow active
00972	SF Remote reverse fast active
00973	
00974	
00975	
00976	
00977	SF Auto forward fast active
00978	SF Auto forward slow active
00979	SF Auto interlock active
00980	SF Auto stop active
00981	SF Auto reverse slow active
00982	SF Auto reverse fast active
00983	
00984	
00985	
00986	
00987	
00988	
00989	
00990	
00991	
00992	
00993	Starter Flag Motor run 00 – Refer to User Manual
00994	Starter Flag Motor run 01 – Refer to User Manual
00995	Starter Flag Motor run 02 – Refer to User Manual
00996	Starter Flag Motor run 03 – Refer to User Manual
00997	Starter Flag Motor run 04 – Refer to User Manual
00998	
00999	
01000	
01001	
01002	
01003	
01004	
01005	
01006	
01007	
01008	
01009	
01010	
01011	

Table 20: Logic Function table (Continued)

Value	Description
01012	
01013	
01014	
01015	
01016	
01017	
01018	
01019	
01020	
01021	
01022	
01023	
01024	
01025	Alarm flag mask
01026	Trip flag mask

8 Getting Started

8.1 Setting Up the IP Address

The following must be done via the NewFeed front-end.

- Connect the NewFeed front-end to the relay via a USB cable.
- Select ***"Internal communication module".***
- Select the Comms type as Modbus/TCP.
  - If External communication module is set to "None" then the internal communication module will be controlling the PLC bits.
- Set the IP address.
- The **last IP address v1** will also be the **slave address** of the Modbus/TCP module.
  - Settings in figure 6.1a shows the **slave address** as 90 for the Modbus/TCP module.
- Set the subnet mask.
- Set the gateway.
- Press the ***"Write settings to NewFeed"*** button.
- Do note that the Modbus/TCP slave socket or port is 502.

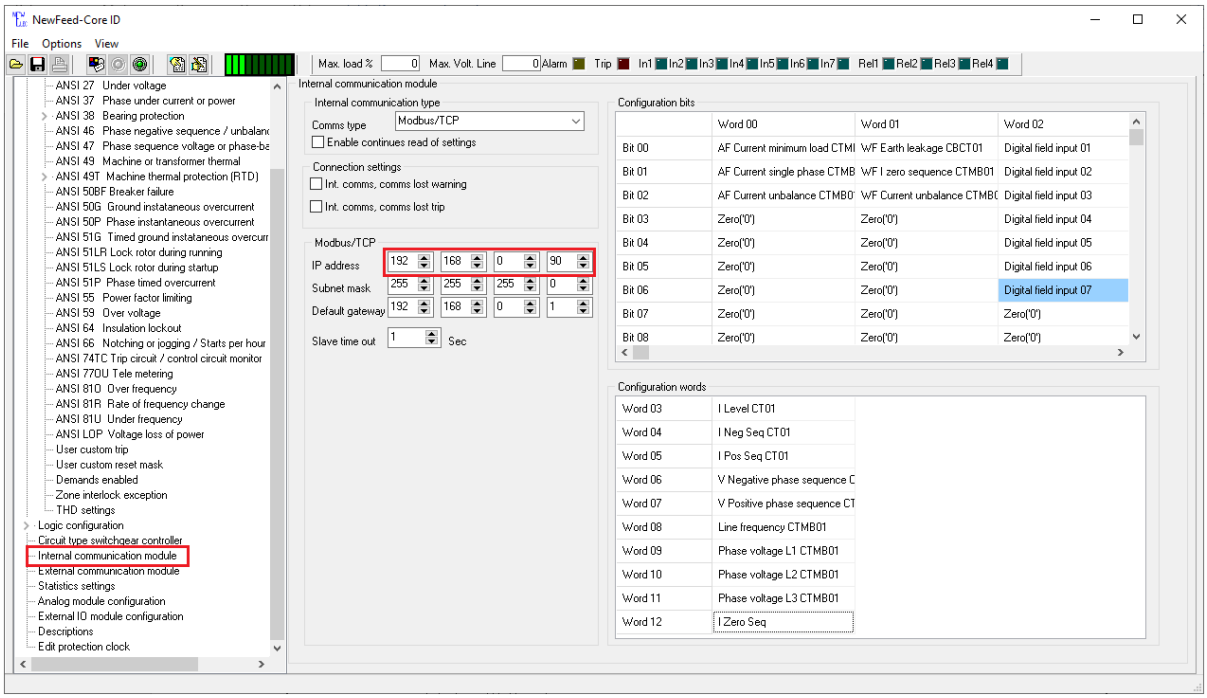


Figure 6.1.a: Modbus/TCP address configuration via frontend.

8.2 Setting Up the Slave Time Out

The Slave time out feature (See Figure 6.2.a) will apply when the following conditions happen:

- PLC stop communicating to the NewFeed.
- Or the communication cable (LAN) is unplugged while communication between NewFeed and the with PLC is ongoing.

The PLC bits located in the holding register address 197 to 199 will be affected in the following way:

- Time out = 0 seconds: Will not change the PLC bits when conditions mentioned above occur.
- Time out = 1 to 200 seconds: Will change the PLC bits back to zeros after the elapsed time, when conditions mentioned above occur.

After the Slave time out value is changed press the ***"Write settings to NewFeed"*** button.

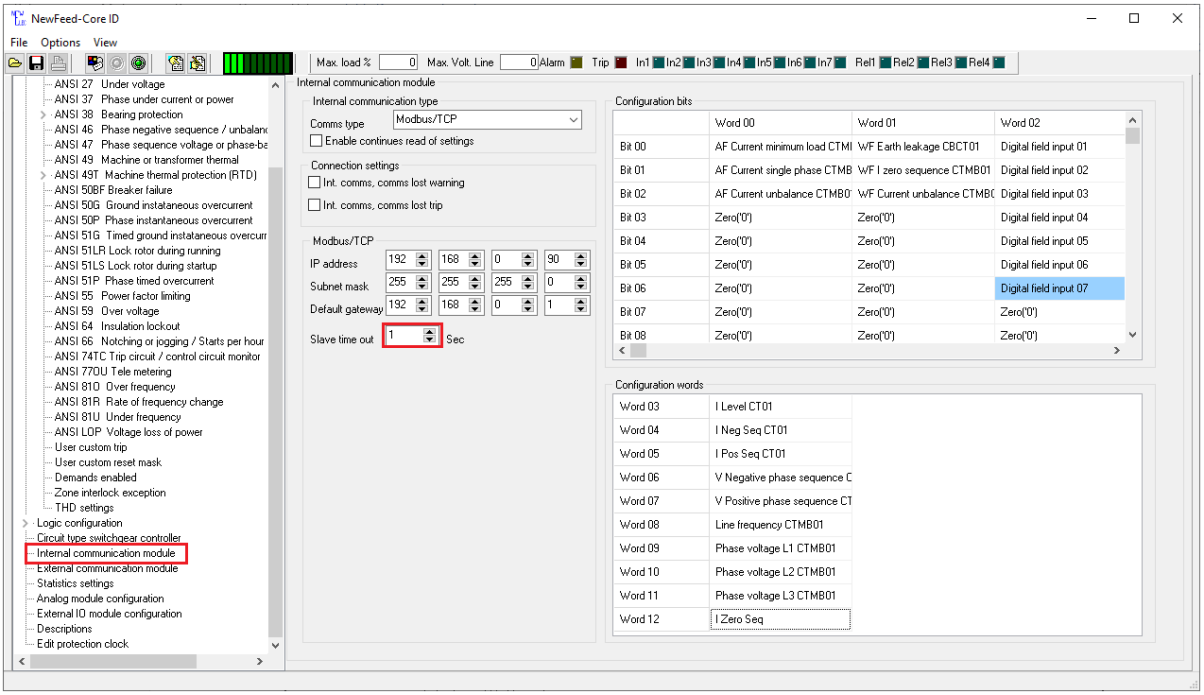


Figure 6.2.a: Modbus/TCP Slave time out configuration via frontend.

8.3 Setting Up Assignable Bits and Words

8.3.1 Configuration bits

Configuration bits are located to the top right position (See figure 6.3.a). These bits can be mapped to any bit output of the NewFeed actual data (InService flag, Digital field input or relay output). The bits are contained in Word 00, Word 01 and Word 02 as assignable words.
(See Word 00, Word 01 and Word 02 in Figure 6.3a)

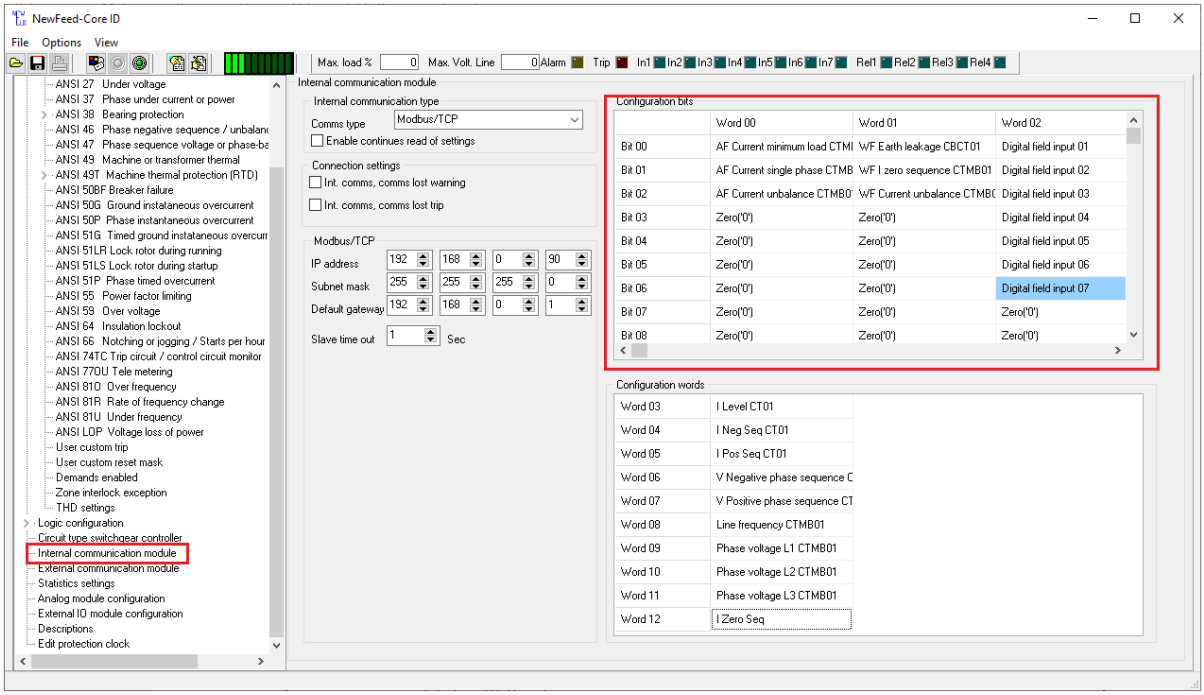


Figure 6.3.a: Modbus/TCP configuration bits location on NewFeed frontend.

By double left clicking on the grid of the selected bit a popup box will appear (See figure 6.3.b). The box will contain a list of bits that can be selected.

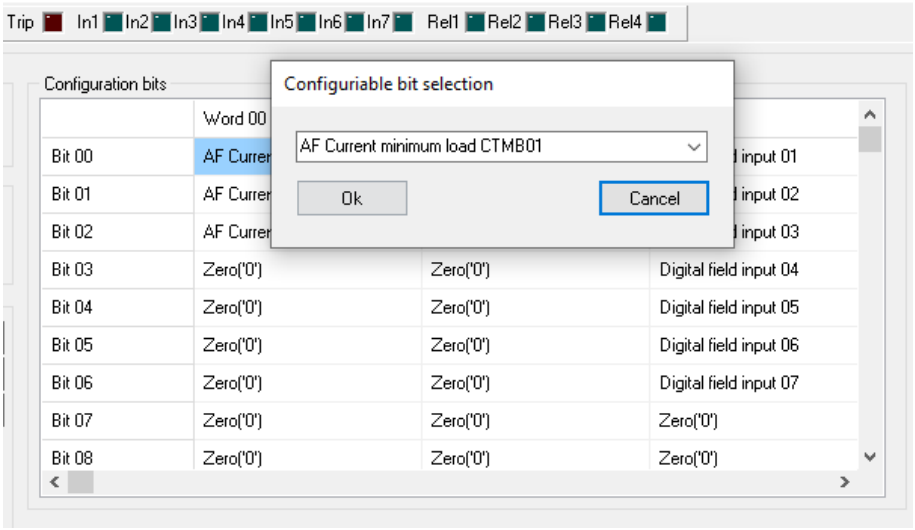


Figure 6.3.b: Modbus/TCP configuration bits selection window.

Below is a list of all the configuration bits that can be assigned (Table 6.3.a) to the assignable bit.

Configuration bits	
Name	**Description**
00000	None
00002	IF In service
00003	IF Volt present
00007	IF Breaker fault warning
00008	IF Pre start warning
00009	IF Feedback forward active
00010	IF Feedback reverse active
00011	IF Run forward fast
00012	IF Run forward slow
00013	IF Run reverse slow
00014	IF Run reverse fast
00015	IF Stop active
00016	IF Interlock active
00017	IF Starter ready
00018	IF Masked alarm flag
00019	IF Masked trip flag
00020	IF Status reporter
00050	IF IL lag VL
00051	IF MCCB slug trip
00052	IF Main contact slug trip
00053	IF Motor start up
00054	IF Motor running
00055	IF Motor stopped
00066	IF IL1 sub-harmonic high
00067	IF IL1 1st harmonic high
00068	IF IL1 2nd harmonic high
00069	IF IL1 3rd harmonic high
00070	IF IL1 4th harmonic high
00071	IF IL1 5th harmonic high
00072	IF IL1 6th harmonic high
00073	IF IL1 7th harmonic high
00074	IF IL1 8th harmonic high
00075	IF IL1 9th harmonic high
00095	IF IL2 sub-harmonic high
00096	IF IL2 1st harmonic high
00097	IF IL2 2nd harmonic high
00098	IF IL2 3rd harmonic high
00099	IF IL2 4th harmonic high
00100	IF IL2 5th harmonic high
00101	IF IL2 6th harmonic high
00102	IF IL2 7th harmonic high
00103	IF IL2 8th harmonic high
00104	IF IL2 9th harmonic high
00124	IF IL3 sub-harmonic high
00125	IF IL3 1st harmonic high
00126	IF IL3 2nd harmonic high

Configuration bits	
Name	**Description**
00127	IF IL3 3rd harmonic high
00128	IF IL3 4th harmonic high
00129	IF IL3 5th harmonic high
00130	IF IL3 6th harmonic high
00131	IF IL3 7th harmonic high
00132	IF IL3 8th harmonic high
00133	IF IL3 9th harmonic high
00153	IF VL1 sub-harmonic high
00154	IF VL1 1st harmonic high
00155	IF VL1 2nd harmonic high
00156	IF VL1 3rd harmonic high
00157	IF VL1 4th harmonic high
00158	IF VL1 5th harmonic high
00159	IF VL1 6th harmonic high
00160	IF VL1 7th harmonic high
00161	IF VL1 8th harmonic high
00162	IF VL1 9th harmonic high
00182	IF VL2 sub-harmonic high
00183	IF VL2 1st harmonic high
00184	IF VL2 2nd harmonic high
00185	IF VL2 3rd harmonic high
00186	IF VL2 4th harmonic high
00187	IF VL2 5th harmonic high
00188	IF VL2 6th harmonic high
00189	IF VL2 7th harmonic high
00190	IF VL2 8th harmonic high
00191	IF VL2 9th harmonic high
00211	IF VL3 sub-harmonic high
00212	IF VL3 1st harmonic high
00213	IF VL3 2nd harmonic high
00214	IF VL3 3rd harmonic high
00215	IF VL3 4th harmonic high
00216	IF VL3 5th harmonic high
00217	IF VL3 6th harmonic high
00218	IF VL3 7th harmonic high
00219	IF VL3 8th harmonic high
00220	IF VL3 9th harmonic high
00240	WF Over current
00241	WF Current unbalance
00242	WF Current single phase
00243	WF I1 positive sequence
00244	WF I2 negative sequence
00245	WF I0 zero sequence
00247	WF Current THD magnitude
00248	WF Current minimum load
00249	WF Short circuit
00250	WF Running stall
00251	WF Current THD percentage

Configuration bits	
Name	**Description**
00252	WF Vectorial stall
00253	WF Unauthorized current
00264	WF Phase angle
00268	WF kWatt demand exceeded
00269	WF kVAr demand exceeded
00270	WF kVA demand exceeded
00271	WF Current demand exceeded
00272	WF Over voltage
00273	WF Under voltage
00274	WF Voltage symmetry
00275	WF Voltage line frequency low
00276	WF Voltage line frequency high
00277	WF Minimum Volts per Hz
00278	WF Maximum Volts per Hz
00279	WF Rate of frequency change
00280	WF Voltage phase rotation
00281	WF V1 positive sequence
00282	WF V2 negative sequence
00283	WF V0 zero sequence
00284	WF V THD percentage high
00285	WF V THD magnitude high
00297	WF Voltage not present
00299	WF kWatt peak demand exceeded
00300	WF kVAr peak demand exceeded
00301	WF kVA peak demand exceeded
00302	WF Current peak demand exceeded
00306	WF Earth leakage CBCT01
00307	WF Earth fault CBCT01
00308	WF Insulation lockout
00314	WF Power factor limit
00320	WF Speed 01 run or start up stall
00321	WF Speed 02 run or start up stall
00336	WF Trip monitor
00337	WF Breaker monitor
00338	WF IO expander communication lost
00339	WF RTD04 module communication lost
00340	WF Internal comms module communication lost
00341	WF 4 to 20mA communication lost
00343	WF External comms module communication lost
00344	WF connection failed
00345	WF Earth leakage CBCT01 connection lost
00347	WF Frozen contact
00348	WF Breaker wear
00349	WF Lockout active
00350	WF Emergency stop
00351	WF RTD08 module communication lost
00352	WF Analogue in 1 high low
00353	WF Analogue in 1 low high

Configuration bits	
Name	**Description**
00354	WF Analogue in 2 high low
00355	WF Analogue in 2 low high
00356	WF Analogue out 1 high low
00357	WF Analogue out 1 low high
00358	WF Analogue out 2 high low
00359	WF Analogue out 2 low high
00360	WF RTD 1 high low
00361	WF RTD 1 low high
00362	WF RTD 2 high low
00363	WF RTD 2 low high
00364	WF RTD 3 high low
00365	WF RTD 3 low high
00366	WF RTD 4 high low
00367	WF RTD 4 low high
00368	WF RTD 5 high low
00369	WF RTD 5 low high
00370	WF RTD 6 high low
00371	WF RTD 6 low high
00372	WF RTD 7 high low
00373	WF RTD 7 low high
00374	WF RTD 8 high low
00375	WF RTD 8 low high
00376	WF RTD 9 high low
00377	WF RTD 9 low high
00378	WF RTD 10 high low
00379	WF RTD 10 low high
00380	WF RTD 11 high low
00381	WF RTD 11 low high
00382	WF RTD 12 high low
00383	WF RTD 12 low high
00384	WF One or no start left
00385	WF Execution fault
00386	WF Feedback fault
00387	WF Load settings error
00388	WF User trip 1
00389	WF User trip 2
00390	WF User trip 3
00391	WF User trip 4
00433	AF Over current
00434	AF Current unbalance
00435	AF Current single phase
00436	AF I1 positive sequence
00437	AF I2 negative sequence
00438	AF I0 zero sequence
00440	AF Current THD magnitude
00441	AF Current minimum load
00442	AF Short circuit
00443	AF Running stall condition

Configuration bits	
Name	**Description**
00444	AF Current THD percentage
00445	AF Vectorial stall
00446	AF Unauthorized current
00457	AF Phase angle
00461	AF kWatt demand exceeded
00462	AF kVAr demand exceeded
00463	AF kVA demand exceeded
00464	AF Current demand exceeded
00465	AF Over voltage
00466	AF Under voltage
00467	AF Voltage symmetry
00468	AF Volt low line frequency
00469	AF Volt high line frequency
00470	AF Minimum Volts per Hz
00471	AF Maximum Volts per Hz
00472	AF Rate of frequency change
00473	AF Voltage phase rotation
00474	AF V1 positive sequence
00475	AF V2 negative sequence
00476	AF V0 zero sequence
00477	AF Voltage THD percentage
00478	AF Voltage THD magnitude
00490	AF Voltage not present
00492	AF kWatt peak demand exceeded
00493	AF kVAr peak demand exceeded
00494	AF kVA peak demand exceeded
00495	AF Current peak demand exceeded
00499	AF Earth leakage CBCT
00500	AF Earth fault CBCT
00501	AF Insulation lockout
00505	AF Apparent power limit
00507	AF Power factor limit CBTMB01
00508	AF Direction active power
00509	AF Direction reactive power
00513	AF Speed 01 run or start up stall
00514	AF Speed 02 run or start up stall
00529	AF Trip monitor
00530	AF Breaker monitor
00531	AF IO expander communication lost
00532	AF RTD04 module communication lost
00533	AF Internal comms module communication lost
00534	AF 4 to 20mA communication lost
00536	AF External comms module communication lost
00537	AF connection failed
00538	AF Earth leakage CBCT01 connection lost
00540	AF Frozen contact
00541	AF Breaker wear
00542	AF Lockout active

Configuration bits	
Name	**Description**
00543	AF Emergency stop
00544	AF RTD08 module communication lost
00545	AF Analogue input 1 high low
00546	AF Analogue input 1 low high
00547	AF Analogue input 2 high low
00548	AF Analogue input 2 low high
00549	AF Analogue output 1 high low
00550	AF Analogue output 1 low high
00551	AF Analogue output 2 high low
00552	AF Analogue output 2 low high
00553	AF RTD 1 high low
00554	AF RTD 1 low high
00555	AF RTD 2 high low
00556	AF RTD 2 low high
00557	AF RTD 3 high low
00558	AF RTD 3 low high
00559	AF RTD 4 high low
00560	AF RTD 4 low high
00561	AF RTD 5 high low
00562	AF RTD 5 low high
00563	AF RTD 6 high low
00564	AF RTD 6 low high
00565	AF RTD 7 high low
00566	AF RTD 7 low high
00567	AF RTD 8 high low
00568	AF RTD 8 low high
00569	AF RTD 9 high low
00570	AF RTD 9 low high
00571	AF RTD 10 high low
00572	AF RTD 10 low high
00573	AF RTD 11 high low
00574	AF RTD 11 low high
00575	AF RTD 12 high low
00576	AF RTD 12 low high
00577	AF One start left
00578	AF Execution fault
00579	AF Feedback fault
00580	AF Load settings error
00581	AF User trip 1
00582	AF User trip 2
00583	AF User trip 3
00584	AF User trip 4
00609	AF ANSI77O Ch1 high, high
00610	AF ANSI77U Ch1 low, low
00611	AF ANSI77O Ch2 high, high
00612	AF ANSI77U Ch2 low, low
00613	AF ANSI77O Ch3 high, high
00614	AF ANSI77U Ch3 low, low

Configuration bits	
Name	**Description**
00615	AF ANSI77O Ch4 high, high
00616	AF ANSI77U Ch4 low, low
00617	AF ANSI77O Ch5 high, high
00618	AF ANSI77U Ch5 low, low
00619	AF ANSI77O Ch6 high, high
00620	AF ANSI77U Ch6 low, low
00621	AF ANSI77O Ch7 high, high
00622	AF ANSI77U Ch7 low, low
00623	AF ANSI77O Ch8 high, high
00624	AF ANSI77U Ch8 low, low
00625	TF Over current
00626	TF Current unbalance
00627	TF Current single phase
00628	TF I1 positive sequence
00629	TF I2 negative sequence
00630	TF I0 zero sequence
00632	TF Current THD magnitude
00633	TF Current minimum load
00634	TF Short circuit
00635	TF Running stall
00636	TF Current THD percentage
00637	TF Vectorial stall
00638	TF Unauthorized current
00649	TF Phase angle
00653	TF kWatt demand exceeded
00654	TF kVAr demand exceeded
00655	TF kVA demand exceeded
00656	TF Current demand exceeded
00657	TF Over voltage
00658	TF Under voltage
00659	TF Voltage symmetry
00660	TF Volt low line frequency
00661	TF Volt high line frequency
00662	TF Minimum Volts per Hz
00663	TF Maximum Volts per Hz
00664	TF Rate of frequency change
00665	TF Voltage phase rotation
00666	TF V1 positive sequence
00667	TF V2 negative sequence
00668	TF V0 zero sequence
00669	TF Voltage THD percentage
00670	TF Voltage THD magnitude
00682	TF Voltage not present
00684	TF kWatt peak demand exceeded
00685	TF kVAr peak demand exceeded
00686	TF kVA peak demand exceeded
00687	TF Current peak demand exceeded
00691	TF Earth leakage CBCT01

Configuration bits	
Name	**Description**
00692	TF Earth fault CBCT
00693	TF Insulation lockout
00697	TF Apparent power limit
00699	TF Power factor limit
00700	TF Direction active power
00701	TF Direction reactive power
00705	TF Speed 01 run or start up stall
00706	TF Speed 02 run or start up stall
00721	TF Trip monitor
00722	TF Breaker monitor
00723	TF IO expander communication lost
00724	TF RTD04 module communication lost
00725	TF Internal comms module communication lost
00726	TF 4 to 20mA communication lost
00728	TF External comms module communication lost
00729	TF connection failed
00730	TF Earth leakage CBCT01 connection lost
00732	TF Frozen contact
00733	TF Breaker wear
00734	TF Lockout active
00735	TF Emergency stop
00736	TF RTD08 module communication lost
00737	TF Analogue input 1 high high
00738	TF Analogue input 1 low low
00739	TF Analogue input 2 high high
00740	TF Analogue input 2 low low
00741	TF Analogue output 1 high high
00742	TF Analogue output 1 low low
00743	TF Analogue output 2 high high
00744	TF Analogue output 2 low low
00745	TF RTD 1 high high
00746	TF RTD 1 low low
00747	TF RTD 2 high high
00748	TF RTD 2 low low
00749	TF RTD 3 high high
00750	TF RTD 3 low low
00751	TF RTD 4 high high
00752	TF RTD 4 low low
00753	TF RTD 5 high high
00754	TF RTD 5 low low
00755	TF RTD 6 high high
00756	TF RTD 6 low low
00757	TF RTD 7 high high
00758	TF RTD 7 low low
00759	TF RTD 8 high high
00760	TF RTD 8 low low
00761	TF RTD 9 high high
00762	TF RTD 9 low low

Configuration bits	
Name	**Description**
00763	TF RTD 10 high high
00764	TF RTD 10 low low
00765	TF RTD 11 high high
00766	TF RTD 11 low low
00767	TF RTD 12 high high
00768	TF RTD 12 low low
00769	TF Starts per hour limit
00770	TF Execution fault
00771	TF Feedback fault
00772	TF Load settings error
00773	TF User trip 1
00774	TF User trip 2
00775	TF User trip 3
00776	TF User trip 4
00801	TF ANSI77O Ch1 high, high
00802	TF ANSI77U Ch1 low, low
00803	TF ANSI77O Ch2 high, high
00804	TF ANSI77U Ch2 low, low
00805	TF ANSI77O Ch3 high, high
00806	TF ANSI77U Ch3 low, low
00807	TF ANSI77O Ch4 high, high
00808	TF ANSI77U Ch4 low, low
00809	TF ANSI77O Ch5 high, high
00810	TF ANSI77U Ch5 low, low
00811	TF ANSI77O Ch6 high, high
00812	TF ANSI77U Ch6 low, low
00813	TF ANSI77O Ch7 high, high
00814	TF ANSI77U Ch7 low, low
00815	TF ANSI77O Ch8 high, high
00816	TF ANSI77U Ch8 low, low
00817	GOT input 00
00818	GOT input 01
00819	GOT input 02
00820	GOT input 03
00821	GOT input 04
00822	GOT input 05
00823	GOT input 06
00824	GOT input 07
00825	GOT input 08
00826	GOT input 09
00827	GOT input 10
00828	GOT input 11
00829	GOT input 12
00830	GOT input 13
00831	GOT input 14
00832	GOT input 15
00833	PLC Int input 00
00834	PLC Int input 01

Configuration bits	
Name	**Description**
00835	PLC Int input 02
00836	PLC Int input 03
00837	PLC Int input 04
00838	PLC Int input 05
00839	PLC Int input 06
00840	PLC Int input 07
00841	PLC Int input 08
00842	PLC Int input 09
00843	PLC Int input 10
00844	PLC Int input 11
00845	PLC Int input 12
00846	PLC Int input 13
00847	PLC Int input 14
00848	PLC Int input 15
00849	PLC Ext input 00
00850	PLC Ext input 01
00851	PLC Ext input 02
00852	PLC Ext input 03
00853	PLC Ext input 04
00854	PLC Ext input 05
00855	PLC Ext input 06
00856	PLC Ext input 07
00857	PLC Ext input 08
00858	PLC Ext input 09
00859	PLC Ext input 10
00860	PLC Ext input 11
00861	PLC Ext input 12
00862	PLC Ext input 13
00863	PLC Ext input 14
00864	PLC Ext input 15
00865	Digital field input 01
00866	Digital field input 02
00867	Digital field input 03
00868	Digital field input 04
00869	Digital field input 05
00870	Digital field input 06
00871	Digital field input 07
00872	External digital field input 08
00873	External digital field input 09
00874	External digital field input 10
00875	External digital field input 11
00876	External digital field input 12
00877	External digital field input 13
00878	External digital field input 14
00879	External digital field input 15
00880	Simulation active
00881	Relay output 01
00882	Relay output 02

Configuration bits	
Name	**Description**
00883	Relay output 03
00884	Relay output 04
00885	External relay output 05
00886	External relay output 06
00887	External relay output 07
00888	External relay output 08
00889	LF Table 1 output
00890	LF Table 2 output
00891	LF Table 3 output
00892	LF Table 4 output
00893	LF Table 5 output
00894	LF Table 6 output
00895	LF Latch A output
00896	LF Latch B output
00897	LF Counter A output
00898	LF Counter B output
00899	LF RTC output
00900	LF Status reporter
00902	LF Pulse generator output
00903	LF Timer A output
00905	LF Timer B output
00907	LF Ext Comms reset
00908	LF Int Comms reset
00909	LF Field reset
00910	LF Min Load restart flag
00911	LF Reset push button
00912	LF GOT reset
00913	LF Comp 1 high high
00914	LF Comp 1 high
00915	LF Comp 1 high low
00916	LF Comp 1 between
00917	LF Comp 1 low high
00918	LF Comp 1 low
00919	LF Comp 1 low low
00920	LF TC high
00921	LF Comp 2 high high
00922	LF Comp 2 high
00923	LF Comp 2 high low
00924	LF Comp 2 between
00925	LF Comp 2 low high
00926	LF Comp 2 low
00927	LF Comp 2 low low
00928	LF TC high high
00945	SF Location selection bit lsb
00946	SF Location selection bit msb
00947	SF Feedback forward active
00948	SF Feedback reverse active
00949	SF Starter ready

Configuration bits	
Name	**Description**
00950	SF Pre start warning active
00951	SF Backspin timer active
00952	SF Transition timer active
00953	SF DC brake timer active
00954	SF Any stop active
00955	SF Any interlock active
00956	SF Emergency stop active
00957	SF Lockout active
00958	SF Pre start warning complete
00959	SF star timer active
00961	SF Local forward fast active
00962	SF Local forward slow active
00963	SF Local interlock active
00964	SF Local stop active
00965	SF Local reverse slow active
00966	SF Local reverse fast active
00967	SF Remote forward fast active
00968	SF Remote forward slow active
00969	SF Remote interlock active
00970	SF Remote stop active
00971	SF Remote reverse slow active
00972	SF Remote reverse fast active
00977	SF Auto forward fast active
00978	SF Auto forward slow active
00979	SF Auto interlock active
00980	SF Auto stop active
00981	SF Auto reverse slow active
00982	SF Auto reverse fast active
00993	SF Motor run 00
00994	SF Motor run 01
00995	SF Motor run 02
00996	SF Motor run 03
00997	SF Motor run 04
01025	Alarm flag mask
01026	Trip flag mask
01027	WF ANSI77O Ch1 high, high
01028	WF ANSI77O Ch1 high
01029	WF ANSI77U Ch1 low
01030	WF ANSI77U Ch1 low, low
01031	WF ANSI77O Ch2 high, high
01032	WF ANSI77O Ch2 high
01033	WF ANSI77U Ch2 low
01034	WF ANSI77U Ch2 low, low
01035	WF ANSI77O Ch3 high, high
01036	WF ANSI77O Ch3 high
01037	WF ANSI77U Ch3 low
01038	WF ANSI77U Ch3 low, low
01039	WF ANSI77O Ch4 high, high

Configuration bits	
Name	**Description**
01040	WF ANSI77O Ch4 high
01041	WF ANSI77U Ch4 low
01042	WF ANSI77U Ch4 low, low
01043	WF ANSI77O Ch5 high, high
01044	WF ANSI77O Ch5 high
01045	WF ANSI77U Ch5 low
01046	WF ANSI77U Ch5 low, low
01047	WF ANSI77O Ch6 high, high
01048	WF ANSI77O Ch6 high
01049	WF ANSI77U Ch6 low
01050	WF ANSI77U Ch6 low, low
01051	WF ANSI77O Ch7 high, high
01052	WF ANSI77O Ch7 high
01053	WF ANSI77U Ch7 low
01054	WF ANSI77U Ch7 low, low
01055	WF ANSI77O Ch8 high, high
01056	WF ANSI77O Ch8 high
01057	WF ANSI77U Ch8 low
01058	WF ANSI77U Ch8 low, low

Table 6.3.a: Configuration bit selection.

8.3.2 Configuration words

Configuration words are located right below (See figure 6.3.c). There are 10 assignable words (Word 03 – Word 12. Configuration words can be found at address 8 to 17 of the Holding register.

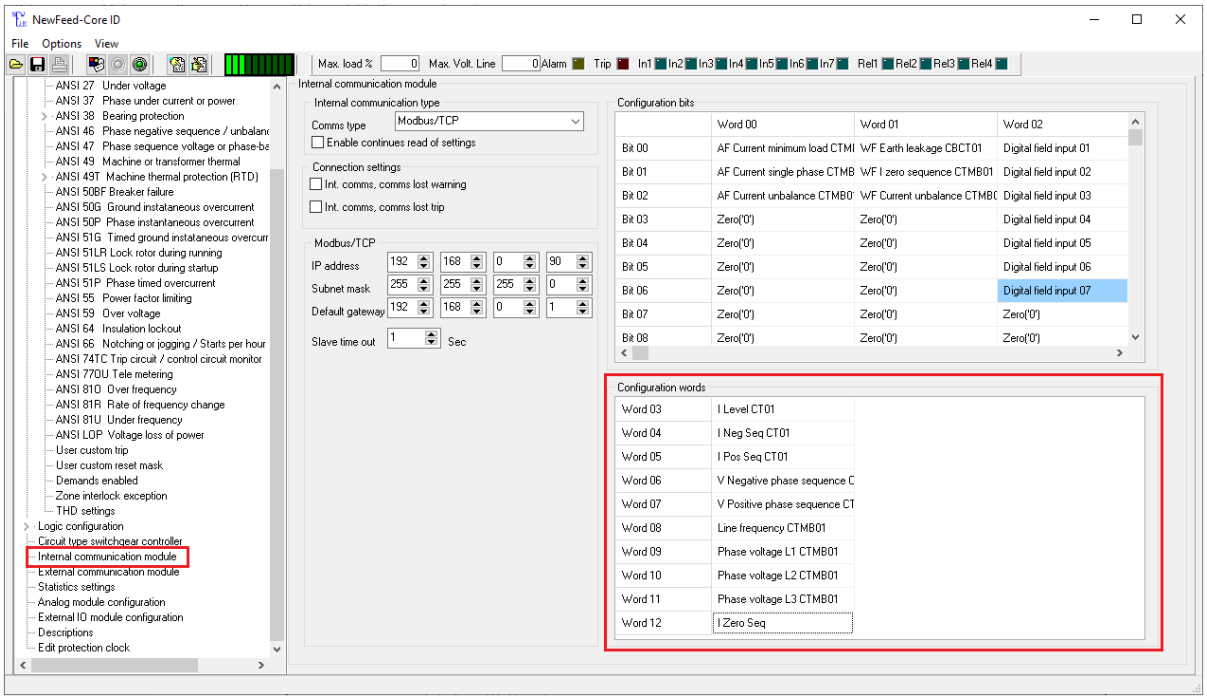


Figure 6.3.c: Modbus/TCP configuration words location on NewFeed frontend.

By double left clicking on the grid of the selected Word a popup box will appear (See figure 6.3.d). The box will contain a list of words that can be selected.

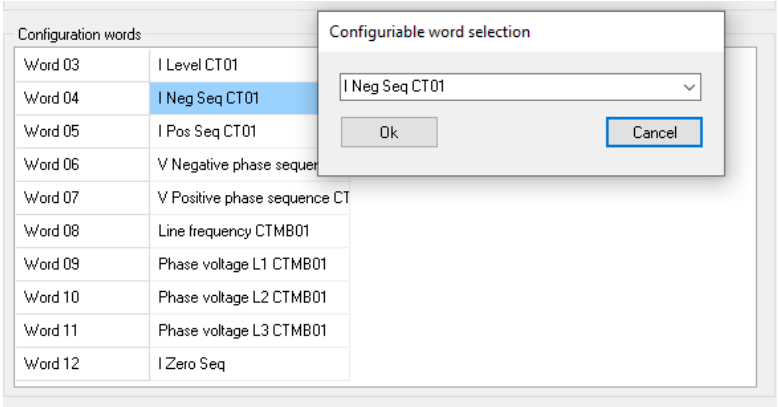


Figure 6.3.d: Modbus/TCP assignable words selection window.

Below is a list of assignable words that can be assigned (Table 6.3.b) to the configuration words.

Configuration words		
Name	**Description**	**Unit**
00002	Int Comms Word 01	
00003	Int Comms Word 02	
00004	Ext Comms Word 01	
00005	Ext Comms Word 02	
00006	I Level	%
00007	IL1 Current Level	%
00008	IL2 Current Level	%
00009	IL3 Current Level	%
00010	I unbalance	%
00011	TC level remain	%
00012	I load neutral	%
00013	Thermal curve active	
00014	Maximum load current	
00015	CT model number	
00016	CT secondary	
00017	CT primary	
00018	I Pos Seq	%
00019	I Neg Seq	%
00020	I Zero Seq	%
00021	IL1 to IL2 angle	Deg
00022	IL2 to IL3 angle	Deg
00023	IL3 to IL1 angle	Deg
00024	VL1 to IL1 angle	Deg
00025	VL2 to IL2 angle	Deg
00026	VL3 to IL3 angle	Deg
00027	IL1 differential current	%
00028	IL2 differential current	%
00029	IL3 differential current	%
00051	Phase voltage maximum level	V
00052	Phase voltage L1	V
00053	Phase voltage L2	V
00054	Phase voltage L3	V
00056	Voltage symmetry	%
00057	Line frequency	Hz
00058	Line voltage selection	
00059	VL1 to VL2 angle	Deg
00060	VL2 to VL3 angle	Deg
00061	VL3 to VL1 angle	Deg
00062	V Positive phase sequence	%
00063	V Negative phase sequence	%
00064	V Zero sequence	%

Configuration words		
Name	**Description**	**Unit**
00065	Volts per Hertz	V/Hz
00066	Rate of frequency change	Hz/s
00067	VL1 differential voltage	
00068	VL2 differential voltage	
00069	VL3 differential voltage	
00088	Earth leakage level	mA
00089	Earth leakage Detector level	mA
00090	Insulation level	Ohm
00091	Warning flags 0.	
	• b00 = Feedback Reverse Signal active	
	• b01 = Run forward fast.	
	• b02 = Run forward slow.	
	• b03 = Run reverse slow.	
	• b04 = Run reverse fast.	
	• b05 = Stop active.	
	• b06 = Interlock active.	
	• b07 = Starter ready.	
	• b08 = If IL Current > 10%.	
	• b09 = If VL > 40% of selected Vac Voltage present measured	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Record memory full.	
	• b13 = Breaker Fault	
	• b14 = Pre-start warning.	
	• b15 = Feedback Forward Signal active.	
00092	Warning flags 1.	
	• b00 = RTD 1 temperature high.	
	• b01 = RTD 1 temperature low.	
	• b02 = RTD 2 temperature high.	
	• b03 = RTD 2 temperature low.	
	• b04 = RTD 3 temperature high.	
	• b05 = RTD 3 temperature low.	
	• b06 = RTD 4 temperature high.	
	• b07 = RTD 4 temperature low.	
	• b08 = 4 - 20mA in 1 high.	
	• b09 = 4 - 20mA in 1 low.	
	• b10 = 4 - 20mA in 2 high.	
	• b11 = 4 - 20mA in 2 low.	
	• b12 = 4 - 20mA out 1 high.	
	• b13 = 4 - 20mA out 1 low.	
	• b14 = 4 - 20mA out 2 high.	
	• b15 = 4 - 20mA out 2 low.	

Configuration words		
Name	**Description**	**Unit**
00093	Warning flags 2.	
	• b00 = RTD 9 temperature high.	
	• b01 = RTD 9 temperature low.	
	• b02 = RTD 10 temperature high.	
	• b03 = RTD 10 temperature low.	
	• b04 = RTD 11 temperature high.	
	• b05 = RTD 11 temperature low.	
	• b06 = RTD 12 temperature high.	
	• b07 = RTD 12 temperature low.	
	• b08 = RTD 5 temperature high.	
	• b09 = RTD 5 temperature low.	
	• b10 = RTD 6 temperature high.	
	• b11 = RTD 6 temperature low.	
	• b12 = RTD 7 temperature high.	
	• b13 = RTD 7 temperature low.	
	• b14 = RTD 8 temperature high.	
	• b15 = RTD 8 temperature low.	
00094	Warning flags 3.	
	• b00 = Reserved.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = V lead I.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Motor start-up.	
	• b12 = Motor running.	
	• b13 = Motor stopped.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00095	Warning flags 4.	
	• b00 = IL1 8th Harmonic high.	
	• b01 = IL1 9th Harmonic high.	
	• b02 = IL1 10th Harmonic high.	
	• b03 = IL1 11th Harmonic high.	
	• b04 = IL1 12th Harmonic high.	
	• b05 = IL1 13th Harmonic high.	
	• b06 = IL1 14th Harmonic high.	
	• b07 = IL1 15th Harmonic high.	

Configuration words		
Name	**Description**	**Unit**
	• b08 = IL1 Sub-harmonics high.	
	• b09 = IL1 1st Harmonic high.	
	• b10 = IL1 2nd Harmonic high.	
	• b11 = IL1 3rd Harmonic high.	
	• b12 = IL1 4th Harmonic high.	
	• b13 = IL1 5th Harmonic high.	
	• b14 = IL1 6th Harmonic high.	
	• b15 = IL1 7th Harmonic high.	
00096	Warning flags 5.	
	• b00 = IL1 24th Harmonic high.	
	• b01 = IL1 25th Harmonic high.	
	• b02 = IL1 26th Harmonic high.	
	• b03 = IL1 27th Harmonic high.	
	• b04 = IL1 28th Harmonic high.	
	• b05 = IL1 29th Harmonic high.	
	• b06 = IL1 30th Harmonic high.	
	• b07 = IL1 31st Harmonic high.	
	• b08 = IL1 16th Harmonic high.	
	• b09 = IL1 17th Harmonic high.	
	• b10 = IL1 18th Harmonic high.	
	• b11 = IL1 19th Harmonic high.	
	• b12 = IL1 20th Harmonic high.	
	• b13 = IL1 21st Harmonic high.	
	• b14 = IL1 22nd Harmonic high.	
	• b15 = IL1 23rd Harmonic high.	
00097	Warning flags 6.	
	• b00 = IL2 8th Harmonic high.	
	• b01 = IL2 9th Harmonic high.	
	• b02 = IL2 10th Harmonic high.	
	• b03 = IL2 11th Harmonic high.	
	• b04 = IL2 12th Harmonic high.	
	• b05 = IL2 13th Harmonic high.	
	• b06 = IL2 14th Harmonic high.	
	• b07 = IL2 15th Harmonic high.	
	• b08 = IL2 Sub-harmonics high.	
	• b09 = IL2 1st Harmonic high.	
	• b10 = IL2 2nd Harmonic high.	
	• b11 = IL2 3rd Harmonic high.	
	• b12 = IL2 4th Harmonic high.	
	• b13 = IL2 5th Harmonic high.	
	• b14 = IL2 6th Harmonic high.	
	• b15 = IL2 7th Harmonic high.	
00098	Warning flags 7.	

Configuration words		
Name	**Description**	**Unit**
	• b00 = IL2 24th Harmonic high.	
	• b01 = IL2 25th Harmonic high.	
	• b02 = IL2 26th Harmonic high.	
	• b03 = IL2 27th Harmonic high.	
	• b04 = IL2 28th Harmonic high.	
	• b05 = IL2 29th Harmonic high.	
	• b06 = IL2 30th Harmonic high.	
	• b07 = IL2 31st Harmonic high.	
	• b08 = IL2 16th Harmonic high.	
	• b09 = IL2 17th Harmonic high.	
	• b10 = IL2 18th Harmonic high.	
	• b11 = IL2 19th Harmonic high.	
	• b12 = IL2 20th Harmonic high.	
	• b13 = IL2 21st Harmonic high.	
	• b14 = IL2 22nd Harmonic high.	
	• b15 = IL2 23rd Harmonic high.	
00099	Warning flags 8.	
	• b00 = IL3 8th Harmonic high.	
	• b01 = IL3 9th Harmonic high.	
	• b02 = IL3 10th Harmonic high.	
	• b03 = IL3 11th Harmonic high.	
	• b04 = IL3 12th Harmonic high.	
	• b05 = IL3 13th Harmonic high.	
	• b06 = IL3 14th Harmonic high.	
	• b07 = IL3 15th Harmonic high.	
	• b08 = IL3 Sub-harmonics high.	
	• b09 = IL3 1st Harmonic high.	
	• b10 = IL3 2nd Harmonic high.	
	• b11 = IL3 3rd Harmonic high.	
	• b12 = IL3 4th Harmonic high.	
	• b13 = IL3 5th Harmonic high.	
	• b14 = IL3 6th Harmonic high.	
	• b15 = IL3 7th Harmonic high.	
00100	Warning flags 9.	
	• b00 = IL3 24th Harmonic high.	
	• b01 = IL3 25th Harmonic high.	
	• b02 = IL3 26th Harmonic high.	
	• b03 = IL3 27th Harmonic high.	
	• b04 = IL3 28th Harmonic high.	
	• b05 = IL3 29th Harmonic high.	
	• b06 = IL3 30th Harmonic high.	
	• b07 = IL3 31st Harmonic high.	
	• b08 = IL3 16th Harmonic high.	

Configuration words		
Name	**Description**	**Unit**
	• b09 = IL3 17th Harmonic high.	
	• b10 = IL3 18th Harmonic high.	
	• b11 = IL3 19th Harmonic high.	
	• b12 = IL3 20th Harmonic high.	
	• b13 = IL3 21st Harmonic high.	
	• b14 = IL3 22nd Harmonic high.	
	• b15 = IL3 23rd Harmonic high.	
00101	Warning flags 10.	
	• b00 = VL1 8th Harmonic high.	
	• b01 = VL1 9th Harmonic high.	
	• b02 = VL1 10th Harmonic high.	
	• b03 = VL1 11th Harmonic high.	
	• b04 = VL1 12th Harmonic high.	
	• b05 = VL1 13th Harmonic high.	
	• b06 = VL1 14th Harmonic high.	
	• b07 = VL1 15th Harmonic high.	
	• b08 = VL1 Sub-harmonics high.	
	• b09 = VL1 1st Harmonic high.	
	• b10 = VL1 2nd Harmonic high.	
	• b11 = VL1 3rd Harmonic high.	
	• b12 = VL1 4th Harmonic high.	
	• b13 = VL1 5th Harmonic high.	
	• b14 = VL1 6th Harmonic high.	
	• b15 = VL1 7th Harmonic high.	
00102	Warning flags 11.	
	• b00 = VL1 24th Harmonic high.	
	• b01 = VL1 25th Harmonic high.	
	• b02 = VL1 26th Harmonic high.	
	• b03 = VL1 27th Harmonic high.	
	• b04 = VL1 28th Harmonic high.	
	• b05 = VL1 29th Harmonic high.	
	• b06 = VL1 30th Harmonic high.	
	• b07 = VL1 31st Harmonic high.	
	• b08 = VL1 16th Harmonic high.	
	• b09 = VL1 17th Harmonic high.	
	• b10 = VL1 18th Harmonic high.	
	• b11 = VL1 19th Harmonic high.	
	• b12 = VL1 20th Harmonic high.	
	• b13 = VL1 21st Harmonic high.	
	• b14 = VL1 22nd Harmonic high.	
	• b15 = VL1 23rd Harmonic high.	
00103	Warning flags 12.	
	• b00 = VL2 8th Harmonic high.	

Configuration words		
Name	**Description**	**Unit**
	• b01 = VL2 9th Harmonic high.	
	• b02 = VL2 10th Harmonic high.	
	• b03 = VL2 11th Harmonic high.	
	• b04 = VL2 12th Harmonic high.	
	• b05 = VL2 13th Harmonic high.	
	• b06 = VL2 14th Harmonic high.	
	• b07 = VL2 15th Harmonic high.	
	• b08 = VL2 Sub-harmonics high.	
	• b09 = VL2 1st Harmonic high.	
	• b10 = VL2 2nd Harmonic high.	
	• b11 = VL2 3rd Harmonic high.	
	• b12 = VL2 4th Harmonic high.	
	• b13 = VL2 5th Harmonic high.	
	• b14 = VL2 6th Harmonic high.	
	• b15 = VL2 7th Harmonic high.	
00104	Warning flags 13.	
	• b00 = VL2 24th Harmonic high.	
	• b01 = VL2 25th Harmonic high.	
	• b02 = VL2 26th Harmonic high.	
	• b03 = VL2 27th Harmonic high.	
	• b04 = VL2 28th Harmonic high.	
	• b05 = VL2 29th Harmonic high.	
	• b06 = VL2 30th Harmonic high.	
	• b07 = VL2 31st Harmonic high.	
	• b08 = VL2 16th Harmonic high.	
	• b09 = VL2 17th Harmonic high.	
	• b10 = VL2 18th Harmonic high.	
	• b11 = VL2 19th Harmonic high.	
	• b12 = VL2 20th Harmonic high.	
	• b13 = VL2 21st Harmonic high.	
	• b14 = VL2 22nd Harmonic high.	
	• b15 = VL2 23rd Harmonic high.	
00105	Warning flags 14.	
	• b00 = VL3 8th Harmonic high.	
	• b01 = VL3 9th Harmonic high.	
	• b02 = VL3 10th Harmonic high.	
	• b03 = VL3 11th Harmonic high.	
	• b04 = VL3 12th Harmonic high.	
	• b05 = VL3 13th Harmonic high.	
	• b06 = VL3 14th Harmonic high.	
	• b07 = VL3 15th Harmonic high.	
	• b08 = VL3 Sub-harmonics high.	
	• b09 = VL3 1st Harmonic high.	

Configuration words		
Name	**Description**	**Unit**
	• b10 = VL3 2nd Harmonic high.	
	• b11 = VL3 3rd Harmonic high.	
	• b12 = VL3 4th Harmonic high.	
	• b13 = VL3 5th Harmonic high.	
	• b14 = VL3 6th Harmonic high.	
	• b15 = VL3 7th Harmonic high.	
00106	Warning flags 15.	
	• b00 = VL3 24th Harmonic high.	
	• b01 = VL3 25th Harmonic high.	
	• b02 = VL3 26th Harmonic high.	
	• b03 = VL3 27th Harmonic high.	
	• b04 = VL3 28th Harmonic high.	
	• b05 = VL3 29th Harmonic high.	
	• b06 = VL3 30th Harmonic high.	
	• b07 = VL3 31st Harmonic high.	
	• b08 = VL3 16th Harmonic high.	
	• b09 = VL3 17th Harmonic high.	
	• b10 = VL3 18th Harmonic high.	
	• b11 = VL3 19th Harmonic high.	
	• b12 = VL3 20th Harmonic high.	
	• b13 = VL3 21st Harmonic high.	
	• b14 = VL3 22nd Harmonic high.	
	• b15 = VL3 23rd Harmonic high.	
00107	Warning flags 16.	
	• b00 = Minimum load .	
	• b01 = Short circuit.	
	• b02 = Running stall condition.	
	• b03 = % THD current .	
	• b04 = Vectorial stall.	
	• b05 = Unauthorized current.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Over current .	
	• b09 = Current unbalance .	
	• b10 = Current single phase .	
	• b11 = I Positive sequence .	
	• b12 = I Negative sequence .	
	• b13 = I Zero sequence warning .	
	• b14 = Neutral monitor .	
	• b15 = THD magnitude current .	
00108	Warning flags 17.	
	• b00 = Differential angle.	
	• b01 = Reserved.	

Configuration words		
Name	**Description**	**Unit**
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Watt demand exceeded.	
	• b05 = VAr demand exceeded.	
	• b06 = VA demand exceeded.	
	• b07 = Current demand exceeded.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Reserved.	
	• b13 = Reserved.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00109	Warning flags 18.	
	• b00 = Voltage phase rotation.	
	• b01 = V Positive sequence .	
	• b02 = V Negative sequence .	
	• b03 = V Zero sequence .	
	• b04 = % V THD high	
	• b05 = V THD magnitude high	
	• b06 = Differential Voltage.	
	• b07 = Reserved.	
	• b08 = Overvoltage .	
	• b09 = Undervoltage .	
	• b10 = Voltage symmetry .	
	• b11 = Low line voltage frequency .	
	• b12 = High line voltage frequency .	
	• b13 = Min. Volts/Hz .	
	• b14 = Max. Volts/Hz .	
	• b15 = Rate of frequency change .	
00110	Warning flags 19.	
	• b00 = Reserved.	
	• b01 = Voltage not present .	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	

Configuration words		
Name	**Description**	**Unit**
	• b11 = Reserved.	
	• b12 = Reserved.	
	• b13 = Reserved.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00111	Warning flags 20.	
	• b00 = Reserved.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Forward Direction active power.	
	• b04 = Forward Direction reactive power.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Auxiliary undervoltage.	
	• b09 = Auxiliary overvoltage.	
	• b10 = Earth leakage >setpoint.	
	• b11 = Earth fault > setpoint.	
	• b12 = Insulation lockout < 20kOhm.	
	• b13 = Reserved.	
	• b14 = Earth detector.	
	• b15 = Reserved.	
00112	Warning flags 21.	
	• b00 = Overspeed 4-20mA input on Ch 02.	
	• b01 = Underspeed 4-20mA input on Ch 02.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Speed switch 01 running or standstill	
	• b09 = Speed switch 02 running or standstill	
	• b10 = Overspeed pulse count high 01.	
	• b11 = Underspeed pulse count low 01.	
	• b12 = Overspeed pulse count high 02.	
	• b13 = Underspeed pulse count low 02.	
	• b14 = Overspeed 4-20mA input on Ch 01.	
	• b15 = Underspeed 4-20mA input on Ch 01.	
00113	Warning flags 22.	
	• b00 = CT and VT connection failed.	
	• b01 = EL CBCT connection failed.	
	• b02 = Reserved.	

Configuration words		
Name	**Description**	**Unit**
	• b03 = Frozen contact.	
	• b04 = Breaker operation near end of life.	
	• b05 = Safety Maintenance Interlock active.	
	• b06 = Emergency stop active.	
	• b07 = RTD 8 module I2C communication lost.	
	• b08 = Main Contactor Trip Coil continuous.	
	• b09 = Breaker Fail warning.	
	• b10 = IO Expander I2C communication lost.	
	• b11 = RTD 4 module I2C communication lost.	
	• b12 = Internal communication module I2C communication lost.	
	• b13 = 4 - 20mAmodule I2C communication lost.	
	• b14 = MMI I2C communication lost.	
	• b15 = Ext. communication module I2C communication lost.	
00114	Warning flags 23.	
	• b00 = RTD 1 temperature level high.	
	• b01 = RTD 1 temperature level low.	
	• b02 = RTD 2 temperature level high.	
	• b03 = RTD 2 temperature level low.	
	• b04 = RTD 3 temperature level high.	
	• b05 = RTD 3 temperature level low.	
	• b06 = RTD 4 temperature level high.	
	• b07 = RTD 4 temperature level low.	
	• b08 = 4 - 20mA input channel 1 high.	
	• b09 = 4 - 20mA input channel 1 low.	
	• b10 = 4 - 20mA input channel 2 high.	
	• b11 = 4 - 20mA input channel 2 low.	
	• b12 = 4 - 20mA output channel 1 high.	
	• b13 = 4 - 20mA output channel 1 low.	
	• b14 = 4 - 20mA output channel 2 high.	
	• b15 = 4 - 20mA output channel 2 low.	
00115	Warning flags 24.	
	• b00 = RTD 9 temperature level high.	
	• b01 = RTD 9 temperature level low.	
	• b02 = RTD 10 temperature level high.	
	• b03 = RTD 10 temperature level low.	
	• b04 = RTD 11 temperature level high.	
	• b05 = RTD 11 temperature level low.	
	• b06 = RTD 12 temperature level high.	
	• b07 = RTD 12 temperature level low.	
	• b08 = RTD 5 temperature level high.	
	• b09 = RTD 5 temperature level low.	
	• b10 = RTD 6 temperature level high.	

Configuration words		
Name	**Description**	**Unit**
	• b11 = RTD 6 temperature level low.	
	• b12 = RTD 7 temperature level high.	
	• b13 = RTD 7 temperature level low.	
	• b14 = RTD 8 temperature level high.	
	• b15 = RTD 8 temperature level low.	
00116	Warning flags 25.	
	• b00 = Reserved.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Starts per hour.	
	• b09 = Execution fault.	
	• b10 = Feedback fault.	
	• b11 = Load settings corruption error.	
	• b12 = Ext. configurable trip 01 active.	
	• b13 = Ext. configurable trip 02 active.	
	• b14 = Ext. configurable trip 03 active.	
	• b15 = Ext. configurable trip 04 active.	
00117	Warning flags 26.	
	• b00 – b15 = Reserved.	
00118	Warning flags 27.	
	• b00 – b15 = Reserved.	
00119	Alarm flags 0.	
	• b00 = Minimum load.	
	• b01 = Short circuit.	
	• b02 = Running stall condition.	
	• b03 = THD % current .	
	• b04 = Vectorial stall.	
	• b05 = Unauthorized current	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Over current.	
	• b09 = Current unbalance.	
	• b10 = Current single phase.	
	• b11 = I Positive sequence.	
	• b12 = I Negative sequence.	
	• b13 = I Zero sequence alarm.	
	• b14 = I Neutral monitor.	

Configuration words		
Name	**Description**	**Unit**
	• b15 = THD magnitude current.	
00120	Alarm flags 1.	
	• b00 = Differential current phase.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Watt demand exceeded.	
	• b05 = VAr demand exceeded.	
	• b06 = VA demand exceeded.	
	• b07 = Current demand exceeded.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Reserved.	
	• b13 = Reserved.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00121	Alarm flags 2.	
	• b00 = Voltage phase on rotation .	
	• b01 = V Positive sequence .	
	• b02 = V Negative sequence .	
	• b03 = V Zero sequence .	
	• b04 = % V THD high	
	• b05 = V THD magnitude high	
	• b06 = Differential Voltage.	
	• b07 = Reserved.	
	• b08 = Overvoltage .	
	• b09 = Undervoltage .	
	• b10 = Voltage symmetry .	
	• b11 = Low line voltage frequency .	
	• b12 = High line voltage frequency .	
	• b13 = Min. Volts/Hz .	
	• b14 = Max. Volts/Hz .	
	• b15 = Rate of frequency change .	
00122	Alarm flags 3.	
	• b00 = Reserved.	
	• b01 = Voltage not present.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	

Configuration words		
Name	**Description**	**Unit**
	• b07 = Reserved.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Reserved.	
	• b13 = Reserved.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00123	Alarm flags 4.	
	• b00 = Apparent power limit .	
	• b01 = Reserved.	
	• b02 = Power factor limit .	
	• b03 = Forward Direction active power.	
	• b04 = Forward Direction reactive power.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Auxiliary undervoltage.	
	• b09 = Auxiliary overvoltage.	
	• b10 = Earth leakage.	
	• b11 = Earth fault.	
	• b12 = Insulation lockout < 20kOhm.	
	• b13 = Reserved.	
	• b14 = Earth detector.	
	• b15 = Reserved.	
00124	Alarm flags 5.	
	• b00 = Overspeed 4-20mA input on Ch 02.	
	• b01 = Underspeed 4-20mA input on Ch 02.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Speed switch 01 running or standstill.	
	• b09 = Speed switch 02 running or standstill.	
	• b10 = Overspeed pulse count high 01.	
	• b11 = Underspeed pulse count low 01.	
	• b12 = Overspeed pulse count high 02.	
	• b13 = Underspeed pulse count low 02.	
	• b14 = Overspeed 4-20mA input on Ch 01.	
	• b15 = Underspeed 4-20mA input on Ch 01.	

Configuration words		
Name	**Description**	**Unit**
00125	Alarm flags 6.	
	• b00 = CT and VT connection failed.	
	• b01 = EL CBCT connection failed.	
	• b02 = Reserved	
	• b03 = Frozen contact.	
	• b04 = Breaker operation near end of life.	
	• b05 = Safety Maintenance Interlock active.	
	• b06 = Emergency stop active.	
	• b07 = RTD 08 module I2C communication lost.	
	• b08 = Main Contactor Trip Coil continuous.	
	• b09 = Breaker Fail warning.	
	• b10 = IO Expander I2C communication lost.	
	• b11 = RTD module I2C communication lost.	
	• b12 = Internal communication module I2C communication lost.	
	• b13 = 4 - 20mAmodule I2C communication module lost.	
	• b14 = MMI I2C communication lost.	
	• b15 = Ext. communication module I2C communication lost.	
00126	Alarm flags 7.	
	• b00 = RTD 1 temperature level high.	
	• b01 = RTD 1 temperature level low.	
	• b02 = RTD 2 temperature level high.	
	• b03 = RTD 2 temperature level low.	
	• b04 = RTD 3 temperature level high.	
	• b05 = RTD 3 temperature level low.	
	• b06 = RTD 4 temperature level high.	
	• b07 = RTD 4 temperature level low.	
	• b08 = 4 - 20mA input channel 1 high.	
	• b09 = 4 - 20mA input channel 1 low.	
	• b10 = 4 - 20mA input channel 2 high.	
	• b11 = 4 - 20mA input channel 2 low.	
	• b12 = 4 - 20mA output channel 1 high.	
	• b13 = 4 - 20mA output channel 1 low.	
	• b14 = 4 - 20mA output channel 2 high.	
	• b15 = 4 - 20mA output channel 2 low.	
00127	Alarm flags 8.	
	• b00 = RTD 9 temperature level high.	
	• b01 = RTD 9 temperature level low.	
	• b02 = RTD 10 temperature level high.	
	• b03 = RTD 10 temperature level low.	
	• b04 = RTD 11 temperature level high.	
	• b05 = RTD 11 temperature level low.	
	• b06 = RTD 12 temperature level high.	

Configuration words		
Name	**Description**	**Unit**
	• b07 = RTD 12 temperature level low.	
	• b08 = RTD 5 temperature level high.	
	• b09 = RTD 5 temperature level low.	
	• b10 = RTD 6 temperature level high.	
	• b11 = RTD 6 temperature level low.	
	• b12 = RTD 7 temperature level high.	
	• b13 = RTD 7 temperature level low.	
	• b14 = RTD 8 temperature level high.	
	• b15 = RTD 8 temperature level low.	
00128	Alarm flags 9.	
	• b00 = Reserved.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Starts per hour.	
	• b09 = Execution fault.	
	• b10 = Feedback fault.	
	• b11 = Load settings corruption error.	
	• b12 = Ext. configurable trip 01 active.	
	• b13 = Ext. configurable trip 02 active.	
	• b14 = Ext. configurable trip 03 active.	
	• b15 = Ext. configurable trip 04 active.	
00129	Alarm flags 10.	
	• b00 – b15 = Reserved.	
00130	Alarm flags 11.	
	• b00 = ANSI77O channel 5 high, high.	
	• b01 = ANSI77U channel 5 low, low.	
	• b02 = ANSI77O channel 6 high, high.	
	• b03 = ANSI77U channel 6 low, low.	
	• b04 = ANSI77O channel 7 high, high.	
	• b05 = ANSI77U channel 7 low, low.	
	• b06 = ANSI77O channel 8 high, high.	
	• b07 = ANSI77U channel 8 low, low.	
	• b08 = ANSI77O channel 1 high, high.	
	• b09 = ANSI77U channel 1 low, low.	
	• b10 = ANSI77O channel 2 high, high.	
	• b11 = ANSI77U channel 2 low, low.	
	• b12 = ANSI77O channel 3 high, high.	
	• b13 = ANSI77U channel 3 low, low.	

Configuration words		
Name	**Description**	**Unit**
	• b14 = ANSI77O channel 4 high, high.	
	• b15 = ANSI77U channel 4 low, low.	
00131	Trip flags 0.	
	• b00 = Minimum load .	
	• b01 = Short circuit.	
	• b02 = Running stall condition.	
	• b03 = % THD current .	
	• b04 = Vectorial stall.	
	• b05 = Unauthorized current	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Over current .	
	• b09 = Current unbalance .	
	• b10 = Current single phase .	
	• b11 = I Positive sequence .	
	• b12 = I Negative sequence .	
	• b13 = I Zero sequence alarm .	
	• b14 = I Neutral monitor .	
	• b15 = THD magnitude current .	
00132	Trip flags 1.	
	• b00 = Differential current angle.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Watt demand exceeded.	
	• b05 = VAr demand exceeded.	
	• b06 = VA demand exceeded.	
	• b07 = Current demand exceeded.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Reserved.	
	• b13 = Reserved.	
	• b14 = Resereved	
	• b15 = Reserved.	
00133	Trip flags 2.	
	• b00 = Voltage phase rotation.	
	• b01 = V Positive sequence .	
	• b02 = V Negative sequence .	
	• b03 = V Zero sequence .	
	• b04 = % V THD high	
	• b05 = V THD magnitude high	

Configuration words		
Name	**Description**	**Unit**
	• b06 = Differential Voltage.	
	• b07 = Reserved.	
	• b08 = Overvoltage .	
	• b09 = Undervoltage .	
	• b10 = Voltage symmetry .	
	• b11 = Low line voltage frequency .	
	• b12 = High line voltage frequency .	
	• b13 = Min. Volts/Hz .	
	• b14 = Max. Volts/Hz .	
	• b15 = Rate of frequency change .	
00134	Trip flags 3.	
	• b00 = Resereved	
	• b01 = Voltage not present .	
	• b02 = Reserved	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Reserved.	
	• b09 = Reserved.	
	• b10 = Reserved.	
	• b11 = Reserved.	
	• b12 = Reserved..	
	• b13 = Reserved.	
	• b14 = Reserved.	
	• b15 = Reserved.	
00135	Trip flags 4.	
	• b00 = Apparent power limit .	
	• b01 = Reserved.	
	• b02 = Power factor limit .	
	• b03 = Forward Direction active power.	
	• b04 = Forward Direction reactive power.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Auxiliary undervoltage.	
	• b09 = Auxiliary overvoltage.	
	• b10 = Earth leakage > setpoint.	
	• b11 = Earth fault > setpoint.	
	• b12 = Insulation lockout < 20kOhm.	
	• b13 = Reserved.	
	• b14 = Earth detector.	

Configuration words		
Name	**Description**	**Unit**
	• b15 = Reserved.	
00136	Trip flags 5.	
	• b00 = Overspeed 4-20mA input on Ch 02.	
	• b01 = Underspeed 4-20mA input on Ch 02.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Speed switch 01 running or standstill.	
	• b09 = Speed switch 02 running or standstill.	
	• b10 = Overspeed pulse count high 01.	
	• b11 = Underspeed pulse count low 01.	
	• b12 = Overspeed pulse count high 02.	
	• b13 = Underspeed pulse count low 02.	
	• b14 = Overspeed 4-20mA input on Ch 01.	
	• b15 = Underspeed 4-20mA input on Ch 01.	
00137	Trip flags 6.	
	• b00 = CT and VT 01 connection failed.	
	• b01 = EL CBCT connection failed.	
	• b02 = CT and VT 02 connection failed.	
	• b03 = Frozen contact.	
	• b04 = Breaker operation near end of life.	
	• b05 = Safety Maintenance Interlock active.	
	• b06 = Emergency stop active.	
	• b07 = RTD 08 module I2C communication lost.	
	• b08 = Main Contactor Trip Coil continuous.	
	• b09 = Breaker Fail warning.	
	• b10 = IO Expander I2C communication lost.	
	• b11 = RTD module I2C communication lost.	
	• b12 = Internal communication module I2C communication lost.	
	• b13 = 4 - 20mAmodule I2C communication module lost.	
	• b14 = MMI I2C communication lost.	
	• b15 = Ext. communication module I2C communication lost.	
00138	Trip flags 7.	
	• b00 = RTD 1 temperature level high.	
	• b01 = RTD 1 temperature level low.	
	• b02 = RTD 2 temperature level high.	
	• b03 = RTD 2 temperature level low.	
	• b04 = RTD 3 temperature level high.	
	• b05 = RTD 3 temperature level low.	

Configuration words		
Name	**Description**	**Unit**
	• b06 = RTD 4 temperature level high.	
	• b07 = RTD 4 temperature level low.	
	• b08 = 4 - 20mA input channel 1 high.	
	• b09 = 4 - 20mA input channel 1 low.	
	• b10 = 4 - 20mA input channel 2 high.	
	• b11 = 4 - 20mA input channel 2 low.	
	• b12 = 4 - 20mA output channel 1 high.	
	• b13 = 4 - 20mA output channel 1 low.	
	• b14 = 4 - 20mA output channel 2 high.	
	• b15 = 4 - 20mA output channel 2 low.	
00139	Trip flags 8.	
	• b00 = RTD 9 temperature level high.	
	• b01 = RTD 9 temperature level low.	
	• b02 = RTD 10 temperature level high.	
	• b03 = RTD 10 temperature level low.	
	• b04 = RTD 11 temperature level high.	
	• b05 = RTD 11 temperature level low.	
	• b06 = RTD 12 temperature level high.	
	• b07 = RTD 12 temperature level low.	
	• b08 = RTD 5 temperature level high.	
	• b09 = RTD 5 temperature level low.	
	• b10 = RTD 6 temperature level high.	
	• b11 = RTD 6 temperature level low.	
	• b12 = RTD 7 temperature level high.	
	• b13 = RTD 7 temperature level low.	
	• b14 = RTD 8 temperature level high.	
	• b15 = RTD 8 temperature level low.	
00140	Trip flags 9.	
	• b00 = Reserved.	
	• b01 = Reserved.	
	• b02 = Reserved.	
	• b03 = Reserved.	
	• b04 = Reserved.	
	• b05 = Reserved.	
	• b06 = Reserved.	
	• b07 = Reserved.	
	• b08 = Starts per hour finished.	
	• b09 = Execution fault.	
	• b10 = Feedback fault.	
	• b11 = Load settings corruption error.	
	• b12 = Ext. configurable trip 01 active.	
	• b13 = Ext. configurable trip 02 active.	
	• b14 = Ext. configurable trip 03 active.	

Configuration words		
Name	**Description**	**Unit**
	• b15 = Ext. configurable trip 04 active.	
00141	Trip flags 10.	
	• b00 – b15 = Reserved.	
00142	Trip flags 11.	
	• b00 = ANSI77O channel 5 high, high.	
	• b01 = ANSI77U channel 5 low, low.	
	• b02 = ANSI77O channel 6 high, high.	
	• b03 = ANSI77U channel 6 low, low.	
	• b04 = ANSI77O channel 7 high, high.	
	• b05 = ANSI77U channel 7 low, low.	
	• b06 = ANSI77O channel 8 high, high.	
	• b07 = ANSI77U channel 8 low, low.	
	• b08 = ANSI77O channel 1 high, high.	
	• b09 = ANSI77U channel 1 low, low.	
	• b10 = ANSI77O channel 2 high, high.	
	• b11 = ANSI77U channel 2 low, low.	
	• b12 = ANSI77O channel 3 high, high.	
	• b13 = ANSI77U channel 3 low, low.	
	• b14 = ANSI77O channel 4 high, high.	
	• b15 = ANSI77U channel 4 low, low.	
00143	Release time of control contactor	
00144	Release time of Shunt trip	
00145	Release total time to clear fault	
00146	Aux V level	
00148	Breaker wear maximum number of operations w0	
00149	Breaker wear maximum number of operations w1	
00162	Analogue input 1 level	
00163	Analogue input 2 level	
00164	Analogue output 1 level	
00165	Analogue output 2 level	
00166	RTD 1 level	
00167	RTD 2 level	
00168	RTD 3 level	
00169	RTD 4 level	
00170	RTD 5 level	
00171	RTD 6 level	
00172	RTD 7 level	
00173	RTD 8 level	
00174	RTD 9 level	
00175	RTD 10 level	
00176	RTD 11 level	
00177	RTD 12 level	

Configuration words		
Name	**Description**	**Unit**
00178	Speed RPM 01	
00179	Speed RPM 02	
00180	Speed analogue 01	
00181	Speed analogue 02	
00182	Logic Function 00	
00183	Logic Function 01	
00184	Logic Function 02	
00185	Logic Function 03	
00186	Logic Function 04	
00187	Counter A	
00188	Counter B	
00189	Starter Function 00	
00190	Starter Function 01	
00191	Starter Function 02	
00192	Starter Function 03	
00193	Starter Function 04	
00194	Product PID	
00195	Product Software Revision	
00196	IL1 THD %	
00197	IL2 THD %	
00198	IL3 THD %	
00199	I THD %	
00200	I THD Magnitude - w0	
00201	I THD Magnitude - w1	
00202	VL1 THD %	
00203	VL2 THD %	
00204	VL3 THD %	
00205	V THD %	
00206	V THD Magnitude - w0	
00207	V THD Magnitude - w1	
00208	Warning Flags 28	
00209	Warning Flags 29	
00210	Tele meter 1 level	
00211	Tele meter 2 level	
00212	Tele meter 3 level	
00213	Tele meter 4 level	
00214	Tele meter 5 level	
00215	Tele meter 6 level	
00216	Tele meter 7 level	
00217	Tele meter 8 level	

Table 6.3.b: Configuration word selection.

8.4 Monitoring Modbus/TCP Diagnostic on Front-End

To make the diagnostics visible on the frontend, select **"Enable continuous read of settings."**
The frontend will then show the following diagnostics under the ***"Internal communication module"***.

MAC Address : MAC Address of Modbus/TCP Device
Revision : Revision of Communication Software

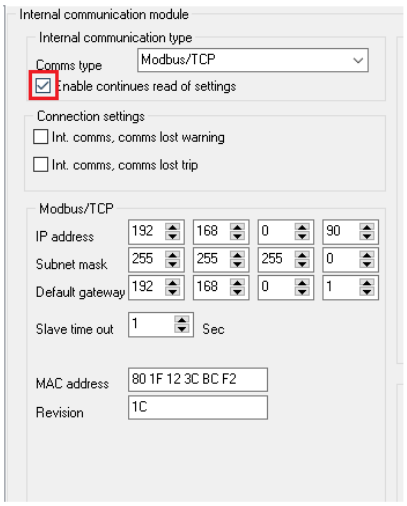
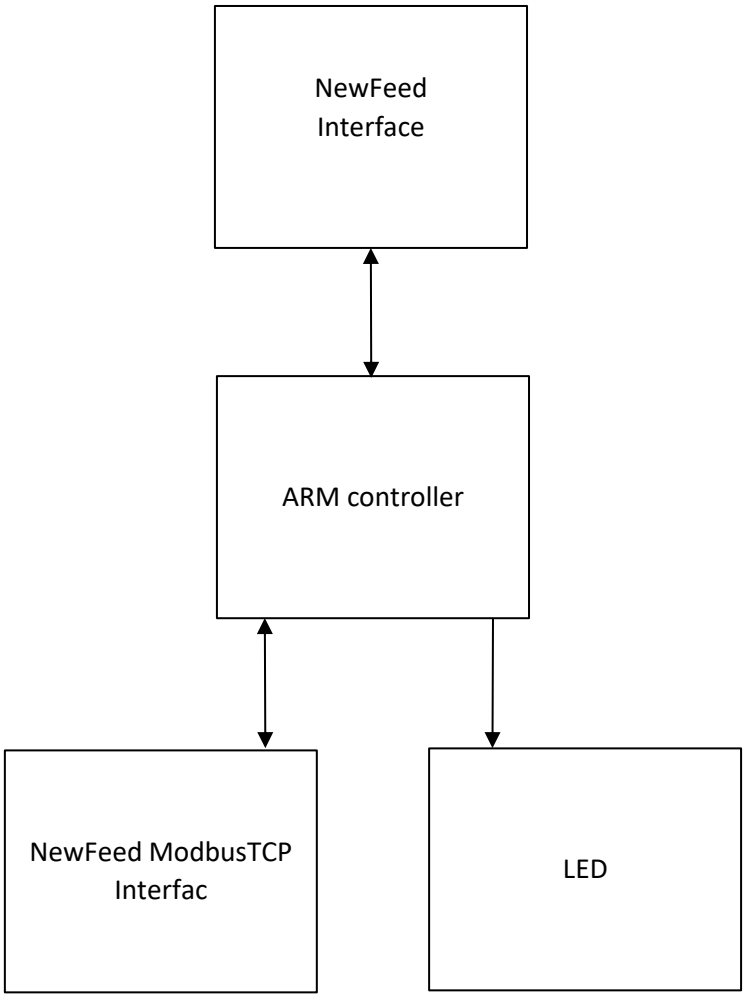


Figure 6.4.a: Modbus/TCP diagnostic data.

9 DIAGRAMS

9.1 Block Diagram of NewFeed Relay



10 Part Numbers

Description.	Part No	Bin No.
NewFeed with Ethernet module. • Modbus/TCP • PROFINET	FPR0462	

Table 8: Ordering information

11 Revision History

Revision History		
Date	**Revision**	**Description**
30 Nov 2022	1A-00	- Correct Modbus registers has been added as well as function codes.
15 May 2023	1B-00	- Add Logic Settings - Add Starter Settings - Add Extended Settings (ANSI 77) - Removed CTMB01 words. - CTMB02 replaced with Reserved.
16 May 2023	1B-01	- Remove GOT. - Add Units to Assignable words. - Change Red bullets to Blue.

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