



TECHNICAL DATA - MODBUS COMMUNICATION FOR ELECTRIC FIRE PUMP CONTROLLER WITH AUTOMATIC TRANSFER SWITCH

To modify IP and SubNet Mask: Go to Config / Advanced / Network Config. Check the "Manual" box. Enter the desired IP address and SubNet Mask. Press Apply. The Modbus node address is 1.

Generals Characteristics

Connection Type	Shielded female connector RJ45	BINARY	16 boolean (1 = TRUE, 0 = FALSE)
Possible IP adress	10.0.1.0 – 10.255.255.255 (Class A private) 172.16.0.0 – 172.31.255.255 (Class B private) 192.168.0.0 – 192.168.255.255 (Class C private)	DIGITAL VALUES	16 bits representing a number. The result refers to a list of values
Frame Format	TCP/IP	ANALOG VALUES	16 bits representing a number. Analog signals values are multiply by 10 for communication purpose, unless otherwise specified.

Controller Info

WORDS 40001-40040 String	Serial Number	WORDS 40041-40080 String	Model
WORDS 40081-40120 String	Package Name	WORDS 40121-40160 String	Software Version
WORD 40161 ANALOG VALUES	Nominal Voltage (V)	WORD 40162 ANALOG VALUES	Nominal Current (A)
WORD 40163 BINARY	Nominal Frequency (0 = 60Hz, 1 = 50Hz)	WORD 40164 ANALOG VALUES	Custom Locked Rotor Current (A)

Alarms Activation

Alarms Activation 1 BINARY	0 Normal Phase Reversal 1 Phase Loss L1 2 Phase Loss L2 3 Phase Loss L3	Alarms Activation 2 BINARY	0 Faulty Pressure Transducer 1 Overpressure 2 Underpressure 3 Low Suction Pressure (option) 4 Flow Start (option) 5 Alternate Phase Reversal 6 Alternate Isolating Switch Open 7 Alternate Circuit Breaker Tripped 8 I/O Electric Board Communication Loss 9 I/O Transfer Switch Board Comm.Loss 10 Weekly Test Required (option) 11 Alternate Lock Rotor Current 12 Low Ambient Temperature (Internal Sensor) 13 High Ambient Temperature (Internal Sensor) 14 Control Voltage Not Healthy 15 Soft Starter Fault (Soft Starter only)
WORD 41001	4 Lock Rotor Current 5 Fail to Start 6 Transfer Switch Trouble 7 Power Loss 8 Service Required 9 Undercurrent 10 Overcurrent 11 Undervoltage 12 Overvoltage 13 Phase Unbalanced 14 Weekly Test Cut-In not reached 15 Weekly Test Check Solenoid Valve	WORD 41002	

Alarms Activation 3 BINARY	0 Motor Trouble 1 Pump Room Alarm 2 Motor Run (option) 3 CANBUS Communication System Failure 4 Pump On Demand 5 Invalid Cut-In 6 Test Mode 7 Low Zone Not Running (option) 8 I/O Expansion 1 Communication Loss (option) 9 I/O Expansion 2 Communication Loss (option) 10 I/O Expansion 3 Communication Loss (option) 11 I/O Expansion 4 Communication Loss (option) 12 Ground Fault 13 Low Water Level 14 Low Spare Temperature (option) 15 Water Reservoir Empty (option)	Alarms Activation 4 BINARY	0 High Water Level (option) 1 Main Relief Valve Open (option) 2 High Motor Temperature (option) 3 High Motor Vibration (option) 4 Flow Meter On (option) 5 User Alarm 1 (option) 6 User Alarm 2 (option) 7 User Alarm 3 (option) 8 User Alarm 4 (option) 9 User Alarm 5 (option) 10 User Alarm 6 (option) 11 User Alarm 7 (option) 12 User Alarm 8 (option) 13 User Alarm 9 (option) 14 User Alarm 10 (option) 15 User Alarm 11 (option)
WORD 41003		WORD 41004	

Alarms Activation 5 BINARY	0 User Alarm 12 (option) 1 User Alarm 13 (option) 2 User Alarm 14 (option) 3 User Alarm 15 (option) 4 User Alarm 16 (option) 5 User Alarm 17 (option) 6 User Alarm 18 (option) 7 User Alarm 19 (option) 8 User Alarm 20 (option) 9 Bell Silenced (option) 10 NA 11 NA 12 NA 13 NA 14 NA 15 Main Contactor Module Failure (option)	Alarms Activation 6 BINARY	0 Bypass Contactor Module Failure (option) 1 I/O Expansion 5 Communication Loss (option) 2 I/O Expansion 6 Communication Loss (option) 3 I/O Expansion 7 Communication Loss (option) 4 I/O Expansion 8 Communication Loss (option) 5 Low Foam Level (option) 6 Low Foam Pressure (option) 7 Dry Run From Flow Switch (option) 8 Jockey Pump Trouble (option) 9 Jockey Pump Running (option) 10 NA 11 VFD Fault (option) 12 VFD Bypass Mode (option) 13 VFD Constant Speed Mode (option) 14 VFD Underpressure (option) 15 VFD Not Ready (option)
WORD 41005		WORD 41006	

Alarms Activation 7 BINARY	0 VFD Invalid Setpoint (option) 1 VFD Reforming Required (option) 2 NA 3 NA 4 NA 5 NA 6 NA 7 NA 8 NA 9 NA 10 NA 11 NA 12 NA 13 NA 14 NA 15 NA
WORD 41007	

WORD 40201	0 MODBUS Remote Manual Start
BINARY	1 MODBUS Automatic Start

NFPA Registers

WORD 42001	Line Voltage L12
ANALOG VALUES	(V)

WORD 42002	Line Voltage L23
ANALOG VALUES	(V)

WORD 42003	Line Voltage L31
ANALOG VALUES	(V)

WORD 42004	Current L1
ANALOG VALUES	(A)

WORD 42005	Current L2
ANALOG VALUES	(A)

WORD 42006	Current L3
ANALOG VALUES	(A)

WORD 42007	System Pressure
ANALOG VALUES (10X)	(chosen unit)

WORD 42008	Suction Pressure
ANALOG VALUES (10X)	(chosen unit)

WORD 42009	NA
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WORD 42010	NA
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WORD 42011	NA
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NFPA Alarms 1	0 Minimum run delay timing high
BINARY	1 NA
WORD 42012	2 High zone delay timing high (option)
	3 Sequence delay timing high (option)
	4 Load shed active high (option)
	5 NA
	6 Low suction alarm high (option)
	7 Low suction shutdown active high (option)
	8 System over pressure alarm high (option)
	9 Restart delay timing high
	10 Weekly test demand active high
	11 Failure to start alarm high
	12 Lockout active high (option)
	13 VFD ready high (option)
	14 VFD forward command active high (option)
	15 NA

NFPA Alarms 2	0 Pressure start demand high
BINARY	1 Remote start demand high
WORD 42013	2 Deluge start demand high (option)
	3 Weekly test start demand high
	4 Local start PB demand high
	5 Manual operator start demand high
	6 Audible alarm high
	7 NA
	8 NA
	9 Load shedding delay timing high (option)
	10 NA
	11 NA
	12 Pressure transducer fault high
	13 NA
	14 NA
	15 Controller in bypass mode (soft start/VFD only high)

NFPA Alarms 3	0 Timed trip timing high
BINARY	1 Motor running high
WORD 42014	2 Motor overload alarm high
	3 NA
	4 Phase reversal alarm high
	5 AC voltage low alarm high
	6 NA
	7 Transfer switch in normal position high
	8 Transfer switch in emergency position high
	9 AC power available high
	10 Transfer switch normal power available high
	11 Transfer switch emergency power available high
	12 Emergency circuit breaker open high
	13 Circuit breaker tripped high
	14 Engine start signal low
	15 NA

NFPA Alarms 4	0 Pump trouble #1 input high
BINARY	1 Pump trouble #2 input high
WORD 42015	2 Pump trouble #3 input high
	3 Pump trouble #4 input high
	4 Pump trouble #5 input high (option)
	5 NA
	6 NA
	7 NA
	8 NA
	9 NA
	10 NA
	11 NA
	12 NA
	13 NA
	14 NA
	15 NA

WORD 42016	Start Count
ANALOG VALUES	

WORD 42017	Run Time
ANALOG VALUES	(Hours)

WORD 42018	Hours since last run
ANALOG VALUES	(Hours)

WORD 42019	NA
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WORD 43029	Cut-In
ANALOG VALUES	(PSI)

WORD 43030	Cut-Out
ANALOG VALUES	(PSI)