



## TECHNICAL DATA - MODBUS COMMUNICATION FOR ELECTRIC FIRE PUMP CONTROLLER

*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 WORD 41001	<ul style="list-style-type: none"> <li>0 Normal Phase Reversal</li> <li>1 Phase Loss L1</li> <li>2 Phase Loss L2</li> <li>3 Phase Loss L3</li> <li>4 Lock Rotor Current</li> <li>5 Fail to Start</li> <li>6 NA</li> <li>7 Power Loss</li> <li>8 Service Required</li> <li>9 Undercurrent</li> <li>10 Overcurrent</li> <li>11 Undervoltage</li> <li>12 Overvoltage</li> <li>13 Phase Unbalanced</li> <li>14 Weekly Test Cut-In not reached</li> <li>15 Weekly Test Check Solenoid Valve</li> </ul>	Alarms Activation 2 BINARY WORD 41002	<ul style="list-style-type: none"> <li>0 Faulty Pressure Transducer</li> <li>1 Overpressure</li> <li>2 Underpressure</li> <li>3 Low Suction Pressure (option)</li> <li>4 Flow Start (option)</li> <li>5 NA</li> <li>6 NA</li> <li>7 NA</li> <li>8 I/O Electric Board Communication Loss</li> <li>9 NA</li> <li>10 Weekly Test Required (option)</li> <li>11 NA</li> <li>12 Low Ambient Temperature (Internal Sensor)</li> <li>13 High Ambient Temperature (Internal Sensor)</li> <li>14 Control Voltage Not Healthy</li> <li>15 Soft Starter Fault (Soft Starter only)</li> </ul>
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Alarms Activation 3 BINARY WORD 41003	<ul style="list-style-type: none"> <li>0 Motor Trouble</li> <li>1 Pump Room Alarm</li> <li>2 Motor Run (option)</li> <li>3 CANBUS Communication System Failure</li> <li>4 Pump On Demand</li> <li>5 Invalid Cut-In</li> <li>6 Test Mode</li> <li>7 Low Zone Not Running (option)</li> <li>8 I/O Expansion 1 Communication Loss (option)</li> <li>9 I/O Expansion 2 Communication Loss (option)</li> <li>10 I/O Expansion 3 Communication Loss (option)</li> <li>11 I/O Expansion 4 Communication Loss (option)</li> <li>12 Ground Fault</li> <li>13 Low Water Level</li> <li>14 Low Spare Temperature (option)</li> <li>15 Water Reservoir Empty (option)</li> </ul>	Alarms Activation 4 BINARY WORD 41004	<ul style="list-style-type: none"> <li>0 High Water Level (option)</li> <li>1 Main Relief Valve Open (option)</li> <li>2 High Motor Temperature (option)</li> <li>3 High Motor Vibration (option)</li> <li>4 Flow Meter On (option)</li> <li>5 User Alarm 1 (option)</li> <li>6 User Alarm 2 (option)</li> <li>7 User Alarm 3 (option)</li> <li>8 User Alarm 4 (option)</li> <li>9 User Alarm 5 (option)</li> <li>10 User Alarm 6 (option)</li> <li>11 User Alarm 7 (option)</li> <li>12 User Alarm 8 (option)</li> <li>13 User Alarm 9 (option)</li> <li>14 User Alarm 10 (option)</li> <li>15 User Alarm 11 (option)</li> </ul>
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Alarms Activation 5 BINARY WORD 41005	<ul style="list-style-type: none"> <li>0 User Alarm 12 (option)</li> <li>1 User Alarm 13 (option)</li> <li>2 User Alarm 14 (option)</li> <li>3 User Alarm 15 (option)</li> <li>4 User Alarm 16 (option)</li> <li>5 User Alarm 17 (option)</li> <li>6 User Alarm 18 (option)</li> <li>7 User Alarm 19 (option)</li> <li>8 User Alarm 20 (option)</li> <li>9 Bell Silenced (option)</li> <li>10 NA</li> <li>11 NA</li> <li>12 NA</li> <li>13 NA</li> <li>14 NA</li> <li>15 Main Contactor Module Failure (option)</li> </ul>	Alarms Activation 6 BINARY WORD 41006	<ul style="list-style-type: none"> <li>0 Bypass Contactor Module Failure (option)</li> <li>1 I/O Expansion 5 Communication Loss (option)</li> <li>2 I/O Expansion 6 Communication Loss (option)</li> <li>3 I/O Expansion 7 Communication Loss (option)</li> <li>4 I/O Expansion 8 Communication Loss (option)</li> <li>5 Low Foam Level (option)</li> <li>6 Low Foam Pressure (option)</li> <li>7 Dry Run From Flow Switch (option)</li> <li>8 Jockey Pump Trouble (option)</li> <li>9 Jockey Pump Running (option)</li> <li>10 NA</li> <li>11 VFD Fault (option)</li> <li>12 VFD Bypass Mode (option)</li> <li>13 VFD Constant Speed Mode (option)</li> <li>14 VFD Underpressure (option)</li> <li>15 VFD Not Ready (option)</li> </ul>
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Alarms Activation 7 BINARY WORD 41007	<ul style="list-style-type: none"> <li>0 VFD Invalid Setpoint (option)</li> <li>1 VFD Reforming Required (option)</li> <li>2 NA</li> <li>3 NA</li> <li>4 NA</li> <li>5 NA</li> <li>6 NA</li> <li>7 NA</li> <li>8 NA</li> <li>9 NA</li> <li>10 NA</li> <li>11 NA</li> <li>12 NA</li> <li>13 NA</li> <li>14 NA</li> <li>15 NA</li> </ul>
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WORD 40201 BINARY	0 MODBUS Remote Manual Start 1 MODBUS Automatic Start
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NFPA Registers

WORD 42001 ANALOG VALUES	Line Voltage L12 (V)
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WORD 42002 ANALOG VALUES	Line Voltage L23 (V)
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WORD 42003 ANALOG VALUES	Line Voltage L31 (V)
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WORD 42004 ANALOG VALUES	Current L1 (A)
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WORD 42005 ANALOG VALUES	Current L2 (A)
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WORD 42006 ANALOG VALUES	Current L3 (A)
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WORD 42007 ANALOG VALUES (10X)	System Pressure (chosen unit)
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WORD 42008 ANALOG VALUES (10X)	Suction Pressure (chosen unit)
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WORD 42009	NA
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WORD 42010	NA
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WORD 42011	NA
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NFPA Alarms 1 BINARY	0 Minimum run delay timing high 1 NA 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
WORD 42012	

NFPA Alarms 2 BINARY	0 Pressure start demand high 1 Remote start demand high 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)
WORD 42013	

NFPA Alarms 3 BINARY	0 Timed trip timing high 1 Motor running high 2 Motor overload alarm high 3 NA 4 Phase reversal alarm high 5 AC voltage low alarm high 6 NA 7 NA 8 NA 9 AC power available high 10 NA 11 NA 12 NA 13 NA 14 NA 15 NA
WORD 42014	

NFPA Alarms 4 BINARY	0 Pump trouble #1 input high 1 Pump trouble #2 input high 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 42015	

WORD 42016 ANALOG VALUES	Start Count
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WORD 42017 ANALOG VALUES	Run Time (Hours)
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WORD 42018 ANALOG VALUES	Hours since last run (Hours)
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WORD 42019	NA
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WORD 43029 ANALOG VALUES	Cut-In (PSI)
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WORD 43030 ANALOG VALUES	Cut-Out (PSI)
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