PowerCore® MPC-20

Murphy's PowerCore MPC-20-R2 is an all-purpose industrial controller that stands up to some of the harshest environments. This powerful controller is targeted for engine-driven pumps and irrigation, with the versatility to work in most engine-driven applications. The controller can be mounted in a sealed control box but is entirely sealed to meet and/or exceed an IP67 rating.

Easily viewable in full-sun conditions, the MPC-20 has a large 3.8-inch monochrome transflective LCD. Interim and Final Tier 4 ISO symbols appear with engine and application information without the appearance of a cluttered screen.

The MPC-20 is configurable by the user to meet the most versatile applications. The ease of initial setup of the I/O does not leave the user feeling paralyzed when an input is needed for a specific function. This allows for quicker uptime and less headache while on the manufacturing floor or in the field.

Although a configuration tool is not required, it provides the ability to configure the controller's set points on the PC and save them in a file for future loading. A standard set point configuration tool is included as a free download to allow customized default settings for building application- or customer-specific configurations.

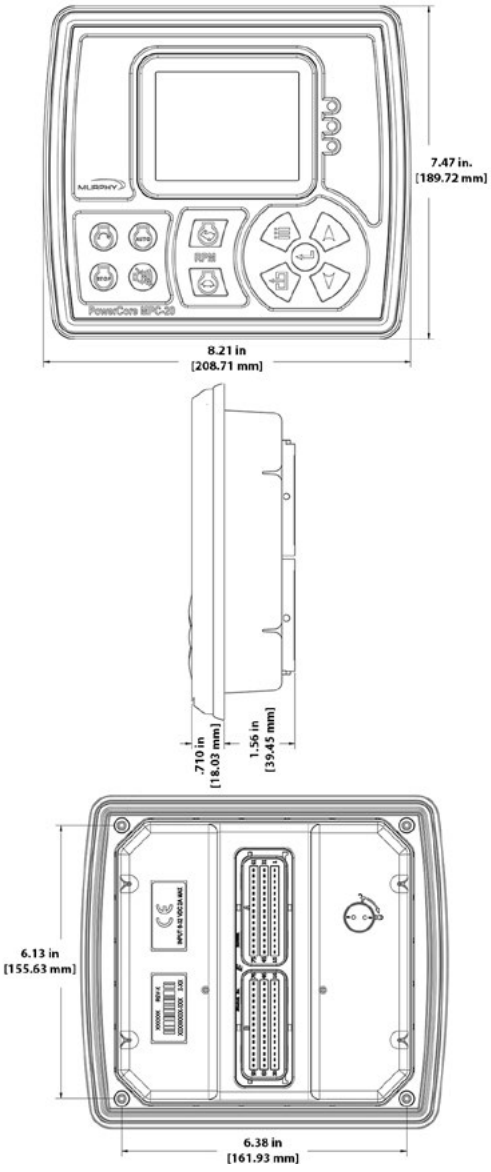
The MPC-20's design has been proven through internal and external testing including HALT (Highly Accelerated Life Testing) and third-party approvals.

*Approved by CSA for non-hazardous locations (Group Safety Publication IEC 61010-1 Third Edition.
Products covered in this document comply with European Council electromagnetic compatibility directive 2014/30/EU and electrical safety directive 2014/35/EU.

Specifications

Display: 3.8" Monochrome LCD, Transflective, 320 x 240 QVGA with White Backlight
Keypad: 11 Tactile Feedback Buttons
LEDs: (1) Red, Shutdown, (1) Amber, Warning, (1) Green, Auto Mode
Outputs:
(2) 1A Max Low-side
(2) 2A Max High-side
(2) 200mA Max 5 VDC
(1) 0-5 VDC Analog
(6) 10 A Max Form C Relays
Inputs:
(8) Analog, Configurable as Resistive, 0-5VDC, 4-20mA or Digital Ground
(6) Digital, Configurable as Battery or Ground
(1) Frequency, (2 Hz - 10 K Hz, 3.6 VAC-120 VAC)
Communications:
(1) CAN 2.0B, 250 kbps, J1939
(1) RS485, MODBUS RTU
(1) USB, Programming
Power Input: 8-32 VDC, Reverse Polarity & Load Dump Protection

Dimensions



Specifications (continued)

Total Current Consumption:
18W Max without 2 2A High-sides active
146W Max with 2 2A High-sides active
Dimensions:
Width: 8.2 in. (208.7 mm)
Height: 7.5 in. (189.7 mm)
Depth: 2.3 in. (57.5 mm)
Mass: 0.9 kg (2.0 lb)
Operating Temperature: -40°F to 185°F (-40°C to 85°C)
Storage Temperature: -40°F to 185°F (-40°C to 85°C)
EMI/RFI: SAE J1113
Shock: 50G in X, Y, Z Axes
Vibration: Random, 7.86 Grms (5-2000Hz), 3 Axes
Sealing: IP67 Complete Controller, IP66 Panel Mount with Gasket (Minimum 14 Ga Metal Plate)
Case: Polycarbonate
Mating Connector: Delphi, SICMA 90 Position
Shipping Weight: 2lbs. 7.1 oz (1.11 kg)
Shipping Dimensions: 9.5 x 9 x 5 in. (241 x 229 x 127 mm)

How to Order

Part Number	Model/Description
40700504	MPC-20-R2 Controller
40051031	Panel Gasket, IP66, MPC-20
40700496	PowerCore 90 Position Connector Kit
40000554	PowerCore 90 Position 3 ft. Conn Whip Harness
40000567	Hand Crimper for PowerCore 90 Position Connector

Connectors

Delphi SICMA 90 Way Connector 1-30	
PIN	Function
1	Switched Battery (positive)
2	Battery (negative)
3	Analog Input 1 (Resistive,0-5V,4-20mA)
4	Analog Input 2 (Resistive,0-5V,4-20mA)
5	Analog Input 3 (Resistive,0-5V,4-20mA)
6	Analog Input 4 (Resistive,0-5V,4-20mA)
7	Analog Input 5 (Resistive,0-5V,4-20mA)
8	Analog Input 6 (Resistive,0-5V,4-20mA)
9	Analog Input 7 (Resistive,0-5V,4-20mA)
10	Analog Input 8 (Resistive,0-5V,4-20mA)
11	Reserved
12	RS485 (negative)
13	RS485 (positive)
14	Reserved
15	Reserved
16	USB D+
17	USB Ground
18	Relay 4 Normally Closed
19	Relay 4 Common
20	Relay 4 Normally Open
21	Reserved
22	Relay 5 Normally Closed
23	Relay 5 Common
24	Relay 5 Normally Open
25	Reserved
26	Relay 6 Normally Closed
27	Relay 6 Common
28	Relay 6 Normally Open
29	Low-side FET 1 (1A Max) -DC
30	Low-side FET 2 (1A Max) -DC

Delphi SICMA 90 Way Connector 31-60	
PIN	Function
31	Battery (positive)
32	Battery (negative)
33	Digital Input 1 (+DC or -DC)
34	Digital Input 3 (+DC or -DC)
35	Digital Input 5 (+DC or -DC)
36	Reserved
37	Reserved
38	Reserved
39	Reserved
40	Analog Output (0-5VDC)
41	Reserved
42	Reserved
43	Reserved
44	Reserved
45	Reserved
46	USB D-
47	USB Shield
48	Reserved
49	Reserved
50	Reserved
51	Reserved
52	Reserved
53	Reserved
54	Reserved
55	Reserved
56	Reserved
57	Reserved
58	Reserved
59	Reserved
60	Reserved

Delphi SICMA 90 Way Connector 61-90	
PIN	Function
61	Battery (positive)
62	Battery (negative)
63	Digital Input 2 (+DC or -DC)
64	Digital Input 4 (+DC or -DC)
65	Digital Input 6 (+DC or -DC)
66	High-side FET 1 (2A Max) +DC
67	High-side FET 2 (2A Max) +DC
68	Reserved
69	Frequency Input
70	Battery (negative)
71	Reserved
72	CAN Low
73	CAN High
74	Reserved
75	Reserved
76	USB VBUS
77	USB ID
78	Relay 1 Normally Closed
79	Relay 1 Common
80	Relay 1 Normally Open
81	Reserved
82	Relay 2 Normally Closed
83	Relay 2 Common
84	Relay 2 Normally Open
85	Reserved
86	Relay 3 Normally Closed
87	Relay 3 Common
88	Relay 3 Normally Open
89	5VDC Output 1 (200mA Max) +DC
90	5VDC Output 2 (200mA Max) +DC