

MURPHYMATIC® Electric Motor Controller



Models for Pressure, Temperature and Level

- Compressors
- Supply Pumps
- Hydraulic Power Pumps
- Oil Well Pumps
- Industrial Process



Description

MURPHYMATIC® Electric Motor Controllers feature a unitized controller and SWICHGAGE® for operating electric motor driven equipment controlling or reacting to Pressure, Temperature, or Liquid Level. These controllers combine the outstanding features of a Murphy SWICHGAGE® and Transformer Relay in one convenient controller.

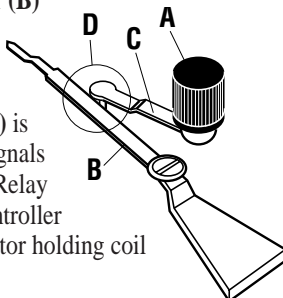
Design your own unit to fit your exact control requirements. Controllers are available for emergency shutdown, start and stop only, start and stop with emergency shutdown and combinations with time delay.

Control limits can be easily adjusted with the SWICHGAGE® contact knobs (A). When the indicating pointer (B)

closes with the limit contact (C), a 24 VAC control circuit (D) is completed and signals the Transformer Relay portion of the controller to operate the motor holding coil circuit.

All internal control circuits are completely prewired at the factory to reduce field installation time. Simply make the process connection, connect line voltage and adjust the SWICHGAGE® contacts to desired limits.

Plug-in relays facilitate field servicing and give additional environmental protection to the control circuits.



Features

- Heavy-duty transformer with multiple primary taps for easier connection to any available power source (110/220/440).
- Low Voltage secondary control circuit (24 VAC) with terminals for remote auxiliary switches.
- Plug-in relays have three SPDT gold flashed contacts providing long life reliability.
- Power relay has extra heavy silver oxide contacts rated 10 amp, 480 VAC.
- SWICHGAGE® incorporates a unique design permitting an adjustable differential between high and low settings throughout the dial range. Analog gauge provides visual reading of operating conditions.

Specifications

Transformer: Primary (power supply) with triple taps for 110/220/440 VAC. 50/60 Hz. Secondary (control supply) 24 VAC. Power Rating: 25 VA

Connections:

Electrical: 3/4 in. conduit (specify others).
Pressure Process: 1/4 NPT thru 1,000 psi (6.89 MPa); 1,500 psi (10.3 MPa) thru 20,000 psi (138 MPa), 1/2 NPT.
Temperature Process: Capillary tube standard length is 5 ft. (1.52 m). Available to 50 ft. (15.24 m).
Sensor connection is 1/2 NPT.
Level Process: 1/4 NPT all ranges.

Terminal Blocks:

High Voltage rated at 30 A, 600 V.
Low Voltage rated at 20 A, 300 V.

Control Relays: Plug-in, 110 V, 10 A contact rating.

SWICHGAGE®: Heavy-duty sensing element, low hysteresis, 2% accuracy, re-calibration pointer, choice of materials.

Contacts:

Power (holding): 10 A, 480 VAC, SPST
Control (auxiliary): 480 VAC, 690 VA pilot duty

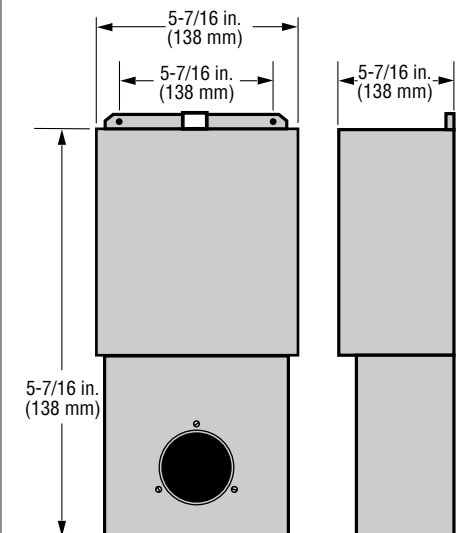
Shipping Dimensions (all models):

28 x 13 x 6 in. (711 x 330 x 152 mm)
“EX” models: 32 x 10 x 16 in. (813 x 254 x 406 mm)

Shipping Weight (all models): 32 lbs (14.5 kgs)

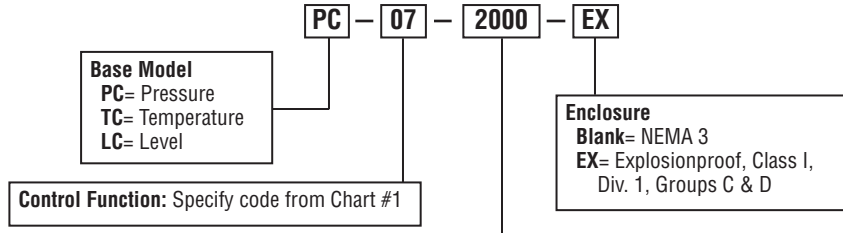
“EX” models: 83 lbs (37.6 kgs)

Dimensions



How to Order

To order the Motor Controller for your application, use the model number designation diagram below.



Range
Pressure: Specify code from Chart #2
Temperature: Specify code from Chart #3, capillary type (see below) and length of capillary (in feet). Example: **350P05**
P= Copper capillary with PVC armor, Copper bulb
G= Copper capillary with Galvanized armor, Copper bulb
S= Copper capillary with Stainless Steel armor, Stainless steel bulb
T= Stainless Steel capillary with Stainless Steel armor, Copper bulb
Level: Specify code from Chart #4 and type liquid to be monitored. Example: **20**. Standard calibration is for water; specify for other.

Chart 1

Control Functions	Code No.
Start-Stop SWICHGAGE® is wired to start on high contact, stop on low contact.	60
Start-Stop with Emergency Shutdown , TATTLETALE® indication, manual reset. PC and TC: SWICHGAGE® is wired to Shut Down on high and low limits. LC: SWICHGAGE® is wired to Start on high level and Stop on low level.	61
Start-Stop with Emergency Shutdown , TATTLETALE® indication, manual reset, adjustable delay up to 5 minutes for start-up lockout and automatic restart* after power failure. PC and TC: SWICHGAGE® is wired through the time delay to Shut Down on high and low limits. LC: SWICHGAGE® is wired to Start on high level and Stop on low level.	62
Shutdown with TATTLETALE® indication; manual reset. SWICHGAGE® is wired to shut down on high and low limits.	07
Shutdown with TATTLETALE® indication manual reset; adjustable time delay up to 5 minutes for start-up lockout and automatic restart* after power failure. PC and TC: SWICHGAGE® is wired through the time delay to Shut Down on high and low limits. LC: SWICHGAGE® is wired to Start on high level and Stop on low level.	93

Chart 2

Pressure Ranges	Code No.
30" vac-0 psi (-101 kPa - 0 kPa)	30V
30" vac-15 psi (-101 kPa - 103 kPa)	30V15
30" vac-30 psi (-101 kPa - 207 kPa)	30V30
30" vac-100 psi (-101 kPa - 689 kPa)	30V100
30" vac-200 psi (-101 kPa - 1.38 MPa)	30V200
30" vac-300 psi (-101 kPa - 2.07 MPa)	30V300
0-15 psi (0-103 kPa)	15
0-30 psi (0-207 kPa)	30
0-60 psi (0-414 kPa)	60
0-100 psi (0-689 kPa)	100
0-160 psi (0-1.10 MPa)	160
0-200 psi (0-1.38 MPa)	200
0-300 psi (0-2.07 MPa)	300
0-400 psi (0-2.76 MPa)	400
0-600 psi (0-4.14 MPa)	600
0-1,000 psi (0-6.89 MPa)	1000
0-1,500 psi (0-10.3 MPa)	1500
0-2,000 psi (0-13.8 MPa)	2000
0-3,000 psi (0-20.7 MPa)	3000
0-5,000 psi (0-34.5 MPa)	5000
0-10,000 psi (0-68.9 MPa)	10000
0-20,000 psi (0-138 MPa)	20000

Chart 3

Temperature Ranges	Code No.
-60 to 60°F (-50 to 15°C)	60
-40 to 136°F (-54 to 57°C)	136
15 to 250°F (9 to 121°C)	250
130 to 350°F (54 to 178°C)	350
260 to 450°F (127 to 232°C)	450

Chart 4

Level Ranges	Code No.
20 ft. (6.0 m)	20
30 ft. (9.1 m)	30
60 ft. (18.3 m)	60

Warranty

A two-year limited warranty on materials and workmanship is given with this Murphy product. Details are available on request and are packed with each unit.

*Unless emergency shutdown TATTLETALE® button has tripped.

NOTE: Specify for other operating sequence:

Start From _____
 Stop From _____
 Shutdown From _____
 Time Delay Lockout On _____

In order to consistently bring you the highest quality, full featured products, we reserve the right to change our specifications and designs at any time.