

76 SERIES

1/4 DIN ANALOG CONTROLLER

ORDERING

SETPOINT/ INDICATION

A Analog/Non Indicating
 B Analog/Analog Process Meter
 R* Analog Indicator Only

OUTPUT FORM

0 None (Indicator Only)
 A On-Off
 B Dual On-Off
 C Time Proportioning
 D Time Proportioning/On-Off
 E Dual Time Proportioning
 F Constant Current 4-20mA
 G Constant Current/On-Off
 J Electric Motor Modulation
 K † High Limit (Only with analog setpoint and 7 amp relay switching)

CONTROL MODE

0 None
 1 On-Off
 2 Proportional + Manual Reset
 3 Proportional + Integral
 4 Prop. + Integral + Derivative

TYPE OF SWITCHING (1ST OUTPUT)**

0 None or 4-20mA Reverse Acting
 2 7 amp SPST Relay Reverse Acting
 5 7 amp SPDT Relay Reverse Acting
 A 4-20mA Direct Acting
 C 7 amp SPST Relay Direct Acting
 F 7 amp Relay SPDT Direct Acting

TYPE OF SWITCHING (2ND OUTPUT)***

0 None
 2 7 amp SPST Relay Direct Acting
 4 7 amp SPST Relay Reverse Acting

ALARM

0 None
 3 Relay, Process Direct
 4 Relay, Deviation Direct
 7 Relay, Process Reverse
 8 Relay, Deviation Reverse

CALIBRATION (For available ranges, see Form 3265)

INPUT SIGNAL

2 Thermocouple Upscale Break
 3 Thermocouple Downscale Break
 4 Millivolts DC
 5 Volts DC
 6 Milliamps DC
 9 Other, consult factory

REMOTE SIGNAL

0 None
 1 0-1000 ohms Analog Remote Setpoint
 2 †† 1-5VDC Remote Setpoint
 3 †† 1-5VDC Process Signal-Output
 4 †† Combination of 2 & 3

SPECIALS

00 Standard instrument, consult factory for features not listed here.
 BN Prop. Band zeros @ setpoint
 BS 1% Hyst On/Off Outputs
 BT High Limit Remote Reset
 DN High Limit Auto Reset on Power-Up

* If R is specified, insert 0 for output form and control mode unless remote setpoint is specified.
 ** 4 and E only for output forms A, C or first outputs on B, D, and E. 1st output reverse acting standard for heating.
 *** 2nd output not available with SPDT relay as 1st output. 2nd output direct acting standard for cooling.
 ****With remote setpoint options, controllers are supplied less local setpoint.
 † Alarms are not available with High Limit.
 †† This option required linear input range.

WARRANTY

This instrument is backed by the Partlow comprehensive 1 year warranty. A complete warranty statement is published in the back of the product instruction manual. If you have further questions about warranties, please contact the Partlow factory.

ORDERING INFORMATION

For pricing and additional ordering information, refer to Form 3265, Electronic Price book, Page 31.

LR39885



Approved

DESCRIPTION

The 76 Series is a complete line of analog electronic controllers. They are designed to provide low cost control for a variety of process variables. It is a 1/4 DIN instrument that provides a high degree of versatility .

A wide range of setpoints, output forms, control modes, alarms and display features make the 76 Series an ideal instrument for today's harsh industrial environments.

The 76 Series line of instruments are very reliable, even in environments plagued by environmental electronic noise.

CONTROLLERS

SPECIFICATIONS

Inputs

Thermocouple types - 10mV minimum, 100mV maximum span with cold junction compensation. Total resistance of thermocouple and leadwire up to 300 ohms without affecting accuracy, up to 1500 ohms of leadwire resistance with less than – 2.5% calibration shift.

Thermocouple break protection - Standard upscale or downscale.

DC Voltage - 1V minimum. 10V maximum span.

DCmV - 10mV minimum, 100mV maximum span, without cold junction compensation.

Input Impedance - 1.5 megohms typical, 300K ohms min.

Setpoint

(For total performance specs, see Performance Accuracy)

Accuracy – 0.5% of span (typical)

Display

Process Meter (Analog Setpoint) - 6" calibrated, accuracy – 2% of scale, central 80% of span. Also indicator-only model.

Outputs

On-Off - 0.45% of span differential.

Time Proportional - Cycle time 5 to 50 seconds, field-changeable to 0.5 to 5 seconds.

Dual On-Off - Adjustable from -25% to +25% of scale range from primary setpoint, within instrument span limit. Second output setpoint tracks primary output setpoint.

Proportional/On-Off - Adjustable from -10% to +10% of scale range from primary setpoint, within instrument span limit. Second output setpoint tracks primary output setpoint.

Dual Proportional - Adjustable from -5% to +5% of scale range from primary setpoint. Second output setpoint tracks primary output setpoint.

Electro-mechanical relay: 7 amp max, 120 Vac resistive load
5 amp max, 240 Vac resistive load
Inductive rating 360VA

Constant Current -4 to 20mA into 0-750 ohms; output is short circuit proof.

Motor Modulation - Any slidewire with values between 100 and 1000 ohms; adjustable deadband 1 to 50% of proportional band.

Control Adjustments

Gain (Proportional Band) - Adjustable from 2 to 50 (proportional band 50 to 2%) on single output models; 6 to 150 (proportional band 16 to 0.6%) for primary output on dual proportioning models.

Manual Reset - Adjustable – 10% of span, field-changeable to – 25%

Integral (Auto Reset) - Adjustable from off to 1 repeat per minute standard, to 10 repeats per minute available.

Reset Windup Inhibition - Prevent automatic reset from contributing to overshoot at initial start-up.

Derivative (Rate) - Adjustable from .01 to 3 minutes.

Performance

Accuracy Reference - – 0.5% of span, at ambient of 25 C. Power supply 115 or 230V – 1%, 50/60 Hz. Source resistance, 10 ohms thermocouple. Humidity 10 to 15% RH.

Rated - – 1% of span, at ambient of 0 to 55 C. Power supply 115 or 230V – 10%, 50/60 Hz. Source resistance, 300 ohms thermocouple. Humidity 0 to 70% RH.

Normal Mode Rejection - 65db at 60 Hz, 61 db at 50 Hz.

Common Mode Rejection - 85db to 240V min. at 60 Hz, 115db to 240V typical at 60 Hz.

Frequency Response - DC to 2Hz

Control Sensitivity - Less than 1 microvolt

Line Voltage Stability - 10% change in line voltage will shift control less than 0.1% of span.

Temperature Stability - 8 microvolts/ C max, 2 microvolts/ C typical

Repeatability - – 0.1% of span

Power Consumption - 6 watts

Agency Approvals

Controls UL and CSA
Limits FM