8170
1/8 DIN Valve Motor Controller

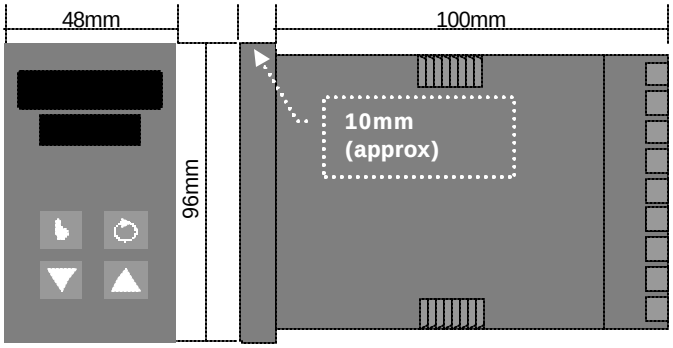
The 8170 is a process controller designed specifically to drive valve motors, with a unique VMD tuning algorithm.

- **Motorised Valve Control**
- **Two process alarms**
- **Loop alarm**
- **RS485 comms**
- **Ramping setpoint**
- **Auto/manual tuning**
- **Dual setpoint selection**
- **PC configuration**

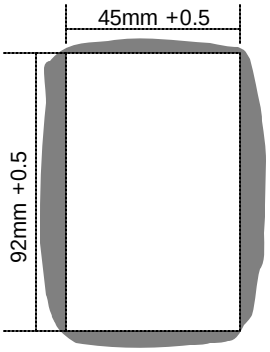
Technical Data

Features	
Control Types	Full PID with Pre-tune, Self-tune, Manual Tuning, or On-Off control
Valve Control	Open loop Valve Motor Drive. Slide-wire feedback from valve is not required
Auto/Manual	Selectable from front panel, with bumpless transfer
Output Configuration	Up to 3 total. 2 for control (Open/Close Valve), 1 for Alarm or retransmit PV or SP (optional)
Alarm 1 & 2 Types	Process high, process low, SP deviation, band, logical OR and hysteresis. Also 1 loop alarm
Human Interface	4 button operation, dual 4 digit 10mm & 8mm high LED displays, plus 3 LED indicators
PC Configuration	Off-line configuration from serial port to dedicated config socket (comms option not required)
Input	
Thermocouple	J, K, R, S, T, B, L, & N.
RTD	3 Wire PT100, 50Ω per lead maximum (balanced)
DC Linear	0-20/4-20mA, 0-50/10-50mV, 0-5/1-5/0-10/2-10V. Scaleable -1999 to 9999, dec point available
Impedance	>100MΩ for Thermocouple and mV ranges, 47KΩ for V ranges and 4.7Ω for mA ranges
Accuracy	+/- 0.25% of input span +/- 1 LSD (T/C CJC better than 0.7°C)
Sampling	4 per second, 14 bit resolution approximately
Sensor Break Detection	<2 secs (except zero based DC ranges), control O/P's turn off, *high alarms activate (*low for RTD, mA or V).
Outputs & Options	
Control Relays	Contacts SPDT 2Amp resistive at 120V AC (motor drive) or 240V AC (via contactor), >500,000 operations
Solid State (Triac) Outputs	0.01 to 1 Amp AC 20 to 280V, 47 to 63Hz
Alarm Relay	Contacts SPDT 2Amp resistive at 240V AC , >500,000 operations
Retransmit Outputs	0-20/4-20mA into 500Ω max, 0-10/0-5V into 500Ω min. Accuracy typically +/- 0.25%
Communications	2 Wire RS485, 1200 to 9600 Baud, ASCII
Dual Setpoint Selection	Selects between 2 SP's using volt free or TTL input (SP1 = -0.6 to 0.8V, SP2 = 2 to 24V)
Operating & Environmental	
Temperature & RH	0 to 55°C (-20 to 80°C storage), 20% to 95%RH non-condensing
Power Supply	100 to 240V 50/60Hz (optional 20 to 55V AC/22 to 65V DC), approx 4 Watts
Front Panel Protection	IEC IP66 (Behind panel protection is IP20)
Approvals and Certification	CE, UL & ULc

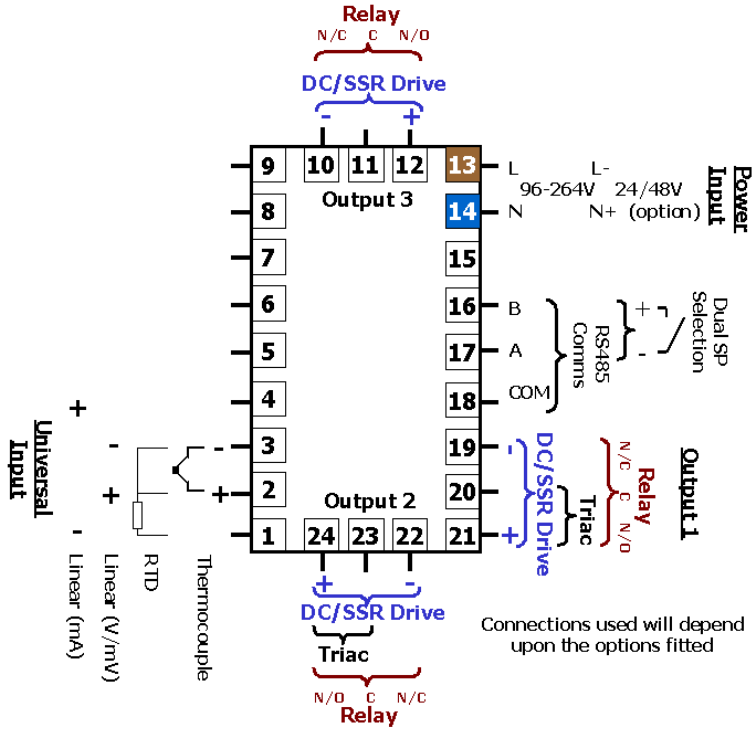
Dimensions



Panel Cut-out



Connection Details



Field Reconfiguration

Input
Configurable to any type, no extra parts required

Output 1
Type is fixed as ordered. Relay or Triac (Valve Open)

Output 2
Type is fixed as ordered. Relay or Triac (Valve Close)

Output 3
Configurable as Alarm via plug-in Relay or SSR modules, or retransmit PV or SP using DC Linear module

Option Slot
Configurable as RS485 comms or dual setpoint selection, via plug-in modules

Order Code

N8170 - x - x - x - x - xx

Input type

3 Wire RTD or DC mV	1
Thermocouple	2
DC mA	3
DC Voltage	4

Output 1

Relay Control (Valve Open)	1
Triac Control (Valve Open)	8

Output 2

Relay Control (Valve Close)	1
Triac Control (Valve Close)	8

Options and Power Supply

00	No Options/100-240V AC line supply
02	No Options/24-48V AC or DC supply
10	RS485 Comms/100-240V AC supply
12	RS485 Comms/24-48V AC or DC supply
30	Dual Setpoint/100-240V AC supply
32	Dual Setpoint/24-48V AC or DC supply

Output 3

0	Not fitted
1	Relay Alarm 1 output
2	DC for SSR Alarm 1 output
3	DC 0-10V Re-Transmit PV or SP
4	DC 0-20mA Re-Transmit PV or SP
5	DC 0-5V Re-Transmit PV or SP
7	DC 4-20mA Re-Transmit PV or SP