

# West 4170

## 1/4 DIN Valve Motor Controller



The West 4170 is a process controller designed specifically to drive valve motors, with a unique VMD tuning algorithm.

- Motorized 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 13mm & 10mm high LED displays, plus 3 LED indicators          |
| PC Configuration     | Off-line configuration from serial port to dedicated config socket (comms option not required) |

#### Input

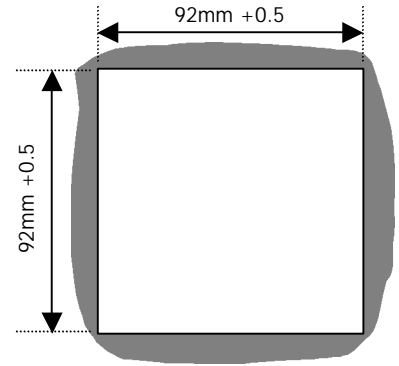
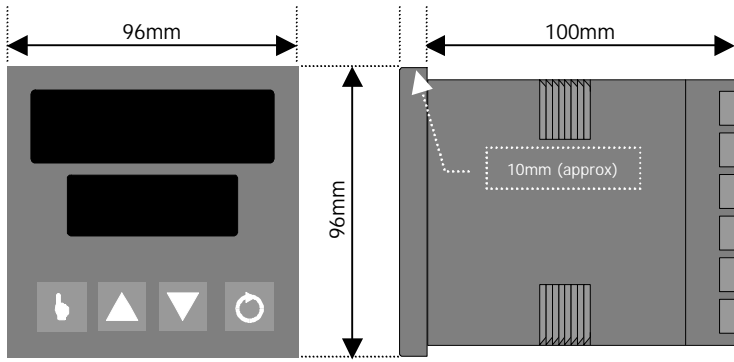
|                        |  |
|------------------------|--|
| Thermocouple           | J, K, R, S, T, B, L, & N.  |
| RTD                    | 3 Wire PT100, 50Ω per lead maximum (balanced)  |
| DC Linear              | 0-20/4-20mA, 0-50/10-50mV, 0-5/1-5/0-10/2-10V. Scaleable -1999 to 9999, dec point 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 for T/C and mV ranges, low alarms activate for RTD, mA or V ranges |

#### Outputs & Options

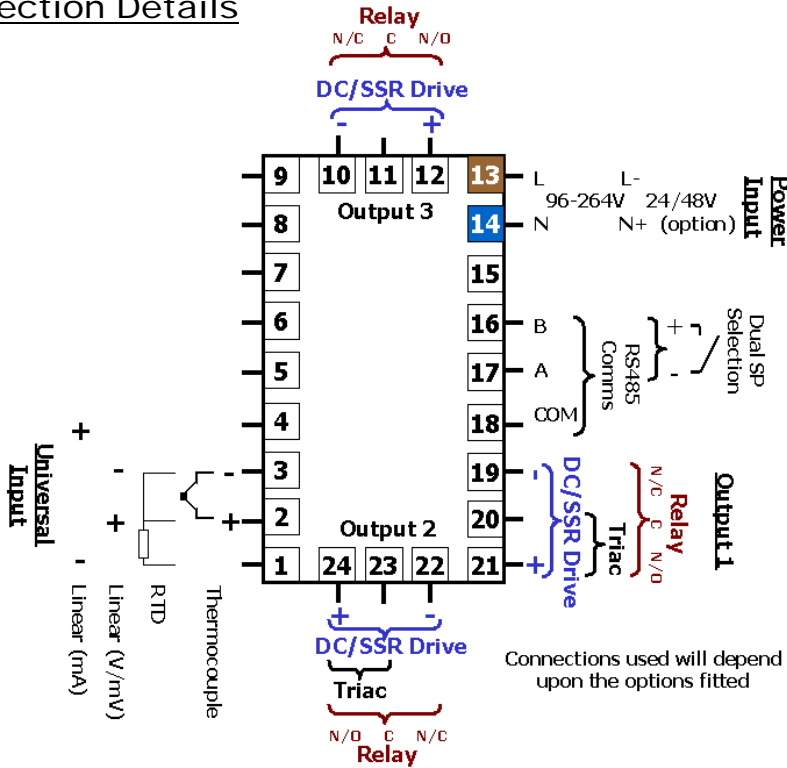
|                             |   |
|-----------------------------|---|
| Control Relays              | Contacts SPDT 2Amp resistive at 120V AC (motor drive) or 240V AC (via contactor), >500,000 operations |
| Solid State (Triac) Outputs | 0.01 to 1 Amp AC 20 to 280V, 47 to 63Hz   |
| Alarm Relay                 | 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, West 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                | 90 to 264V 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  |



## 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

N4171/ Z 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/90-264V AC line supply      |
| 02 | No Options/24-48V AC or DC line supply |
| 10 | RS485 Comms/90-264V AC line supply     |
| 12 | RS485 Comms/24-48V AC or DC supply     |
| 30 | Dual Setpoint/90-264V AC line 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 |

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