



## West 6170+, 8170+ & 4170+ Valve Motor Controller



- Jumperless Configuration
- Auto Detected Hardware
- Process & Loop Alarms
- Modbus Communications
- Auto or Manual Tuning
- Motorised Valve Control
- Valve Position Indication
- Remote/Dual Setpoint Options
- Available in 1/16, 1/8 & 1/4 DIN Format

The new Plus Series VMD Controllers have been specifically designed for open loop valve motor drive applications and feature the improved Plus Series interface and greater field flexibility.

### Specification

#### Features

Control Types	Full PID with Pre-tune, Self-tune and manual tuning modes.
Valve Control	Open Loop Valve Motor Drive.
Auto/Manual	Selectable from front panel or via digital input, with bumpless transfer.
Output Configuration	Up to 4 possible, two required for valve control, additional outputs for alarm, 24VDC transmitter power supply or retransmit of process value or setpoint.
Alarm 1 & 2 Types	Process high, process low, SP deviation, band, logical OR / AND. Also 1 loop alarm for process control security. Process alarms have adjustable hysteresis.
Human Interface	4 button operation, dual 4 digit 10mm & 8mm (6170+ and 8170+) and 13mm & 10mm (4170+) high LED displays, optional choice of colours (Red/Red, Red/Green, Green/Red or Green/Green), plus 5 LED indicators
PC Configuration	Off-line configuration from PC serial port to dedicated configuration socket (communications option not required). Configuration Software for Windows 98 or higher. West Part Number: PS1-CON

#### Input

Thermocouple	J, K, C, R, S, T, B, L, N & PtRh20%vsPtRh40%.
RTD	3 Wire PT100, 50Ω per lead maximum (balanced)
DC Linear	0 to 20mA, 4 to 20mA, 0 to 50mV, 10 to 50mV, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V. Scaleable -1999 to 9999, with adjustable decimal point
Impedance	>10MΩ for Thermocouple and mV ranges, 47KΩ for V ranges and 5Ω for mA ranges
Accuracy	±0.1% of input range ±1 LSD (T/C CJC better than 1°C)
Sampling	4 per second, 14 bit resolution approximately
Sensor Break Detection	<2 seconds (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

#### Output & Options

Control & Alarm Relays	Contacts SPDT 2 Amp resistive at 240V AC (120V AC Max for direct VMD), >500,000 operations. (1A 2xSPST 200,000 operations for Dual Relay)
Control SSR Driver Outputs	Drive capability >10V DC in 500Ω minimum
Triac Outputs	0.01 to 1 Amp AC, 20 to 280Vrms, 47 to 63Hz. 140V Max for direct VMD.
DC Linear Outputs	0 to 20mA, 4 to 20mA into 500Ω max, 0 to 10V, 2 to 10V, 0 to 5V into 500Ω min. Accuracy ±0.25% at 250Ω (degrades linearly to 0.5% for increasing burden to specified limits) Retransmit of PV or SP Only.
Transmitter Power Supply	Output 24VDC (nominal) into 910Ω minimum to power external devices
Serial Communications	2 Wire RS485, 1200 to 19200 Baud, Modbus protocol
Digital Input	Selects between 2 setpoints or Auto/Manual control. Volt free or TTL input

Remote Setpoint / Valve  
Position Auxiliary Input

0 to 20mA, 4 to 20mA, 0 to 5V, 1 to 5V, 0 to 10V or 2 to 10V. Scaleable -1999 to 9999.  
For Valve Position Indication or Remote Setpoint Input.

### Operating & Environment

Temperature & RH

0 to 55°C (-20 to 80°C storage), 20% to 95% RH non-condensing

Power Supply

100 to 240V 50/60Hz 7.5VA (optional 20 to 48V AC 7.5VA/22 to 65V DC 5 watts)

Front Panel Protection

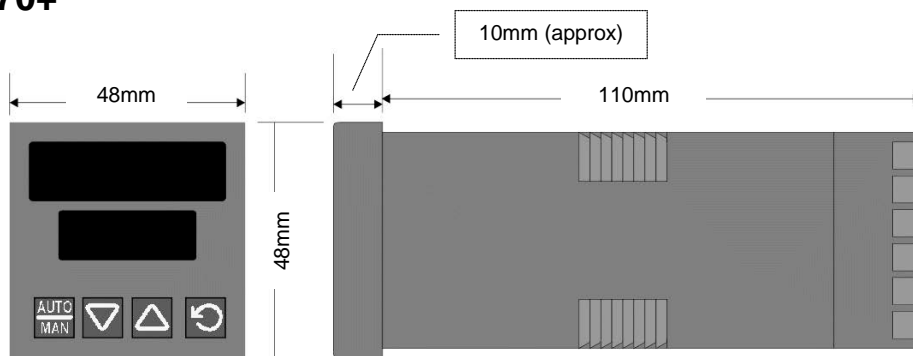
IEC IP66 (Behind panel protection is IP20), NEMA4X

Standards

CE, UL & ULC recognised

## Dimensions

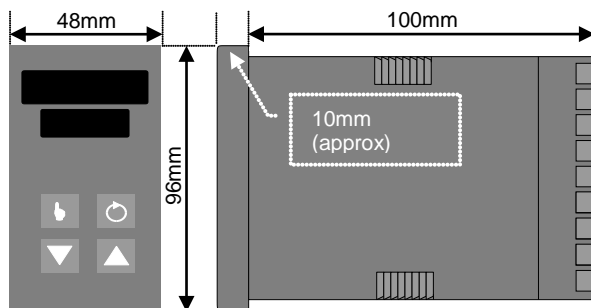
### 6170+



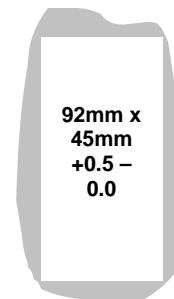
Cut out



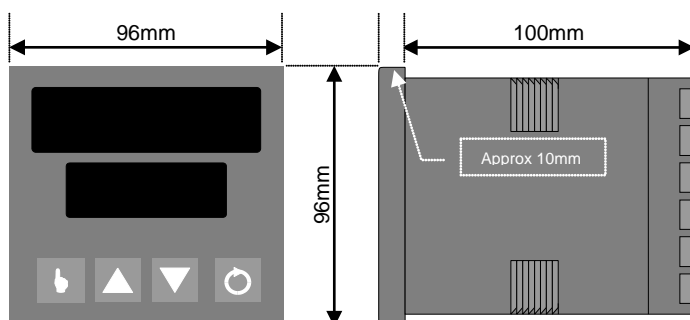
### 8170+



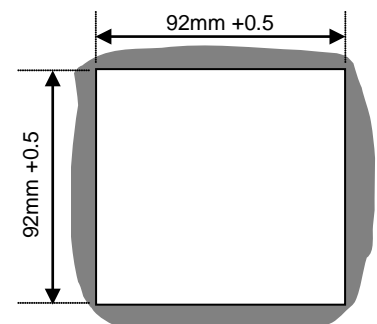
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### 4170+

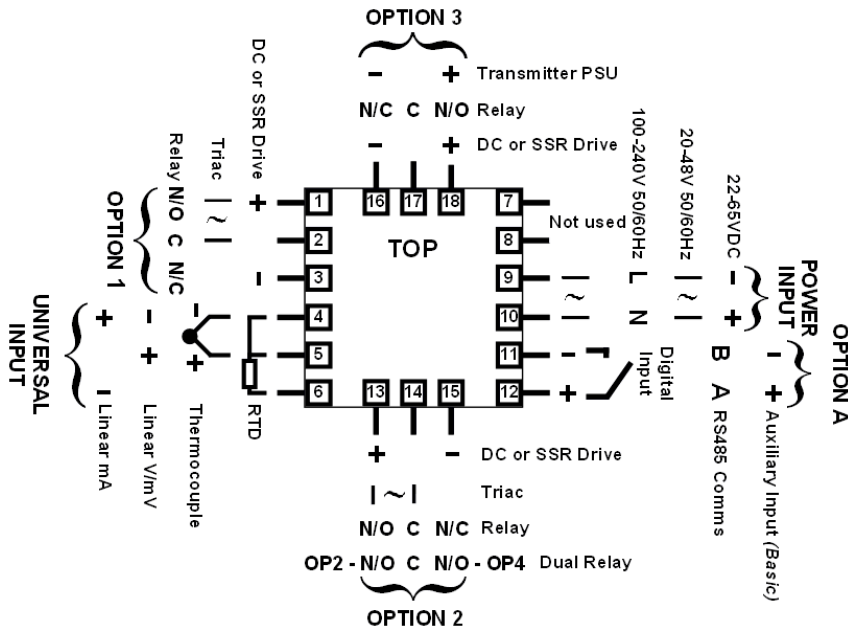


Cut out



## Wiring Connections

### 6170+



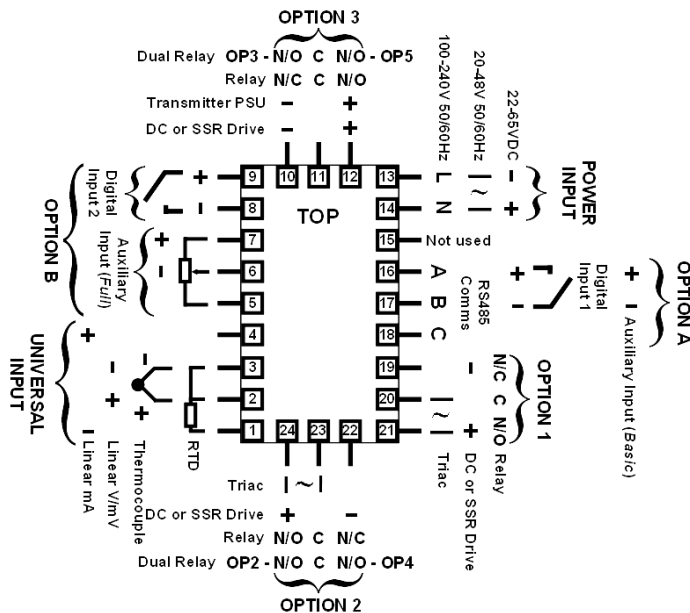
### Field Reconfiguration

#### Input

Jumper-free configuration for any type  
(no extra parts required)

Option Slot 1	Part Number
Relay Output .....	PO1-C10
Linear mA/V DC Output .....	PO1-C21
SSR Driver Output .....	PO1-C50
Triac Output .....	PO1-C80
Option Slot 2	Part Number
Relay Output .....	PO2-C10
Linear mA/V DC Output .....	PO2-C21
SSR Driver Output .....	PO2-C50
Triac Output .....	PO2-C80
Dual Relay Output .....	PO2-W09
Option Slot 3	Part Number
Relay Output .....	PO2-C10
Linear mA/V DC Output .....	PO2-C21
SSR Driver Output .....	PO2-C50
24VDC Transmitter PSU .....	PO2-W08
Option Slot A	Part Number
Digital Input .....	PA1-W03
Auxiliary Input (Basic) .....	PA1-W04
RS485 Comms .....	PA1-W06

### 8170+ & 4170+



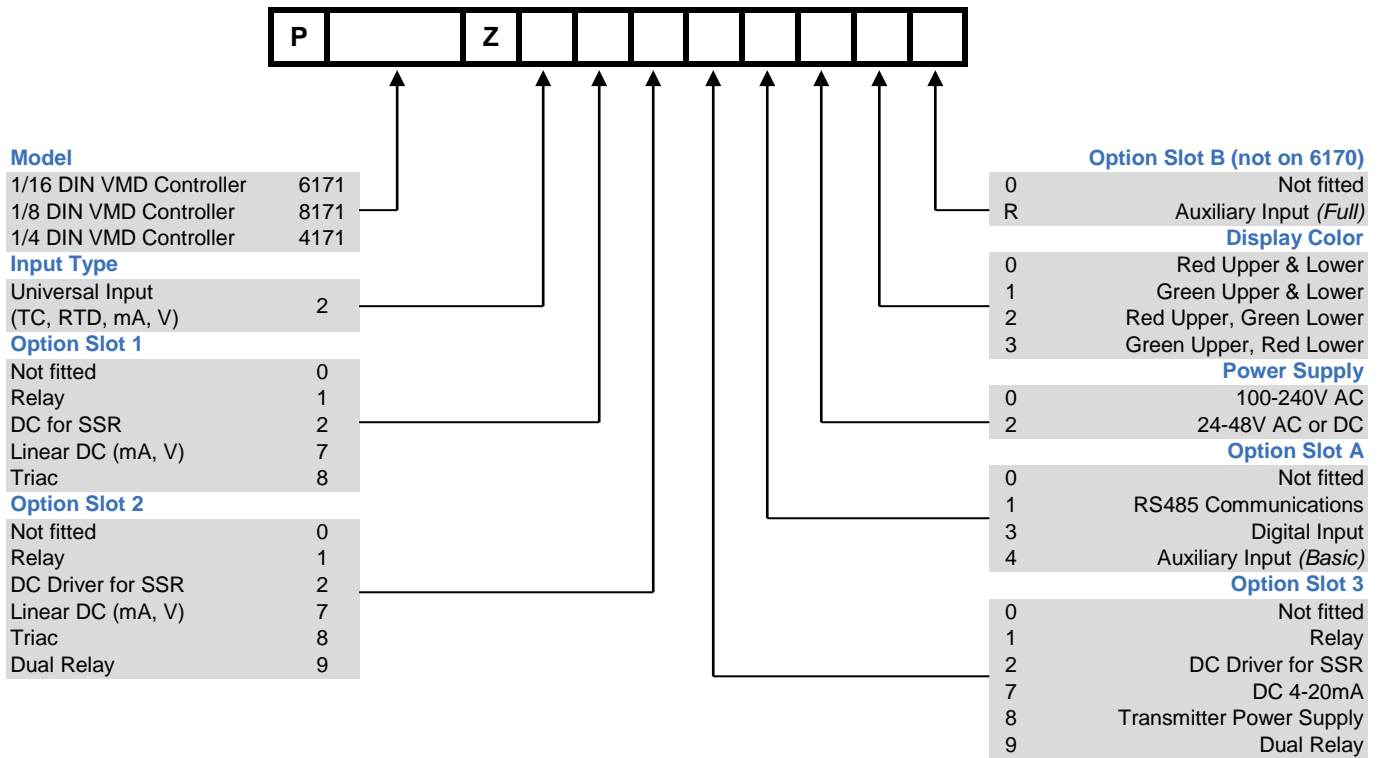
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Triac Output .....	PO1-C80
Option Slot 2	Part Number
Relay Output .....	PO2-C10
Linear mA/V DC Output .....	PO2-C21
SSR Driver Output .....	PO2-C50
Triac Output .....	PO2-C80
Dual Relay Output .....	PO2-W09
Option Slot 3	Part Number
Relay Output .....	PO2-C10
Linear mA/V DC Output .....	PO2-C21
SSR Driver Output .....	PO2-C50
24VDC Transmitter PSU .....	PO2-W08
Dual Relay Output .....	PO2-W09
Option Slot A	Part Number
Digital Input .....	PA1-W03
Auxiliary Input (Basic) .....	PA1-W04
RS485 Comms .....	PA1-W06
Option Slot B	Part Number
Auxiliary Input (Full) .....	PB1-W0R

## Ordering Code



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Brochures and datasheets are available for the complete range of West Control Solutions products, contact your local sales office or visit our website at: [www.west-cs.com](http://www.west-cs.com) for more information.

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