WEST Temperature Control Solutions

Product **Specification**

West P4170 1/4 Din Valve Motor Controller

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.

- **Jumperless Configuration**
- **Auto Detected Hardware**
- **Process & Loop Alarms**
- **Modbus Communications**
- **Auto or Manual Tuning**
- **Motorised Valve Control**
- **Valve Position Indication**
- **Remote/Dual Setpoint Options**

Technical Data

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 5 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 13mm & 10mm 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
Outputs & 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 100mV, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V or ≥2KΩ Potentiometer Scaleable -1999 to 9999. For Valve Position Indication or Remote Setpoint Input. Local/Remote setpoint selected from digital input (supplied as part of Full Auxiliary) or front panel.
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 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)
Standards	CE, UL & ULC recognised

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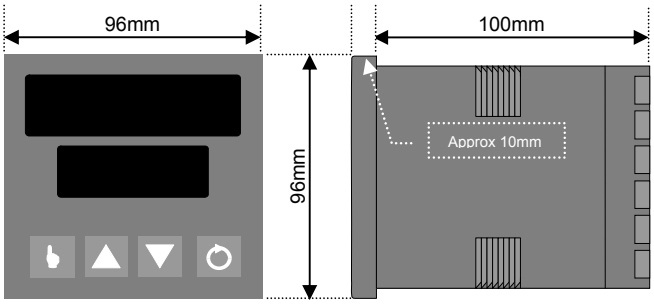
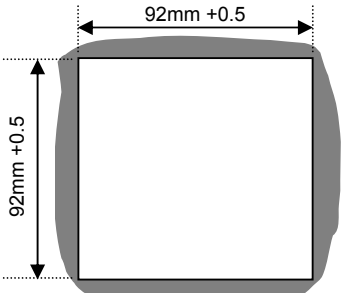
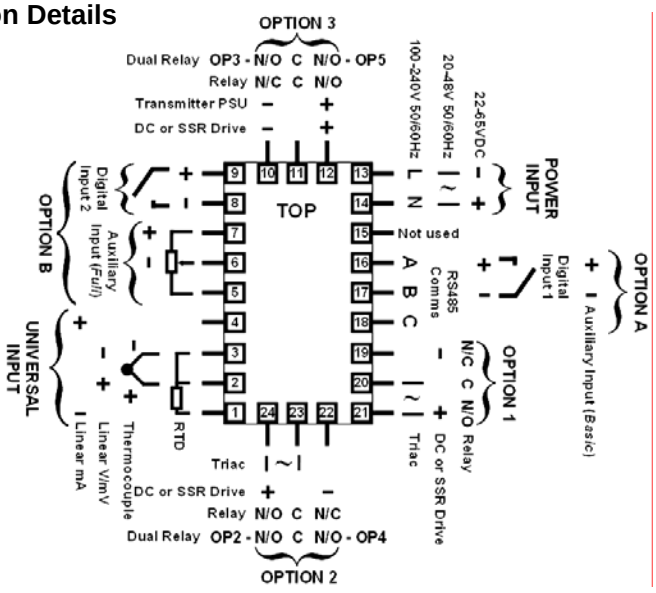
Dimensions



Cut out



Connection Details



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**
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**

Order Code

P4170 - x - x - x - x - x - x - x - x - x

Input Type

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

Option Slot 1

Not fitted	0
Relay	1
DC for SSR	2
DC 0-10V	3
DC 0-20mA	4
DC 0-5V	5
DC 2-10V	6
DC 4-20mA	7
Triac	8

Option Slot 2

Not fitted	0
Relay	1
DC Driver for SSR	2
DC 0-10V	3
DC 0-20mA	4
DC 0-5V	5
DC 2-10V	6
DC 4-20mA	7
Triac	8
Dual Relay	9

Option Slot B

0	Not fitted
R	Auxiliary Input *(Full)*

Display Colour

0	Red Upper & Lower
1	Green Upper & Lower
2	Red Upper, Green Lower
3	Green Upper, Red Lower

Power Supply

0	100-240V AC
2	24-48V AC or DC

Option Slot A

0	Not fitted
1	RS485 Communications
3	Digital Input
4	Auxiliary Input *(Basic)*

Option Slot 3

0	Not fitted
1	Relay
2	DC Driver for SSR
3	DC 0-10V
4	DC 0-20mA
5	DC 0-5V
6	DC 2-10V
7	DC 4-20mA
8	Transmitter Power Supply
9	Dual Relay

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WEST Control Solutions

Temperature & Process Input Controllers

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- **Multi-Loop Controllers**
- **Programmable Controllers**
- **Valve Motor Drive Controllers**
- **Process Indicators**

Please contact our sales and service teams at the following address for further product information.

H210
0710

Tempcon Instrumentation Ltd.
Unit 19, Ford Lane Business Park, Ford Lane
Ford, Nr. Arundel, West Sussex. BN18 0UZ
Tel: ++44 (0) 1243 558270 Fax: ++44 (0) 1243 558288
Email: info@tempcon.co.uk Web site: www.tempcon.co.uk