

NEW

**6170+**<sup>™</sup>

*Affordable, Well-Featured,  
Easy to Use and Adaptable*

### 1/16 DIN Valve Motor Drive Controller

#### DESCRIPTION

The West Instruments 6170+ is part of a range of new generation '+' Series Valve Motor Drive Controllers (VMD) that share the same distinctive styling as the '+' Series temperature controllers. The VMD provides continuous on-line open loop tuning providing stable control at all times and features easy, user-friendly set up.

The expanded '+' Series Valve Motor Drive Controller platform includes 1/4, 1/8 and 1/16 DIN models that incorporate numerous product specification, communication, display interface and software improvements that surpass competitive VMD offerings in ease of use, delivery and value-per dollar characteristic of the growing '+' Series product family.

By adding more versatile features and user-friendly functionality like digital inputs, an easy-to-use HMI, jumperless and auto-hardware configuration, 24VDC transmitter power supply and MODBUS communication across the range - the new generation West Instruments + Series Valve Motor Drive Controllers transform the complicated into the simple while saving you time (as much as 50% on product set-up), reducing inventory stock and virtually eliminating the likelihood of operator errors.

The + Series Valve Motor Drive Controllers are affordable, well-featured, easy to use and adaptable with performance features that work for you to make Valve Motor Drive control simple.

#### APPLICATIONS:

Ideal for temperature/process control applications requiring a modern, value-priced controller with features designed specifically for valve motor drive applications.

#### INDUSTRIES

- Industrial and lab ovens/furnaces
- And any others where a low cost, small size Valve Motor Drive Controller is required.

#### FEATURES/BENEFITS

- **NEW** Improved easy-to-use HMI
- **NEW** Jumperless input configuration
- **NEW** Auto-hardware recognition
- **NEW** Improved Windows PC configuration software
- Process & Loop Alarms
- Optional remote/dual setpoints
- Optional 10V SSR driver output
- Faster communication speeds in selectable MODBUS or ASCII format
- Backward compatible panel cutout, housing and terminal wiring capability

WEST INSTRUMENTS™ brand

6170+™

Well-Featured, Easy to Setup  
and Use

1/16 DIN Valve Motor Drive Controller

SPECIFICATIONS\*

STANDARD FEATURES

4 per second input sample rate  
Universal input  
**NEW** Improved HMI, 4 button operation, dual 4-digit LED display  
**NEW** Plug-in output modules – install just the function needed  
**NEW** Jumperless input configuration  
**NEW** Auto-detection of installed output modules  
**NEW** Improved PC configuration software  
Process alarms  
**Construction/Enclosure:** Rugged ABS Plastic housing  
**Control Types:** Full PID with Pre-tune, Self-tune and manual tuning modes.

ENVIRONMENTAL CHARACTERISTICS

**Operating Temp:** 32° to 131°F (0° to 55°C)  
**Storage Temp:** -4° to 176°F (-20° to 80°C)  
**Humidity:** 20% to 95% non-condensing RH

ELECTRICAL

**Supply Voltage:** 100-240V, 50/60Hz, Optional 20-48VAC 50/60Hz or 22-65VDC  
**Power Consumption:** 5W / 7.5 VA Maximum

INPUTS

**Thermocouple:** J, T, K, L, N, B, R, S, C; PtRh20% vs. PtRh40%  
**RTD:** 3-wire, PT100  
**DC Linear (Scalable -1999 to +9999)**  
**Volts:** 0-5V, 1-5V, 0-10V, 2-10V  
**DC milliamps:** 0-20mA or 4-20mA  
**DC millivolts:** 0-50mV, 10-50mV  
**Digital Input:** Selects between 2 setpoints or Auto/Manual control. Volt free or TTL input  
**Remote Setpoint / Valve Position Input:** 0 to 20mA, 4 to 20mA, 0 to 5V, 1 to 5V, 0 to 10V, 2 to 10V Scaleable -1999 to 9999. Valve Position Indication mode using Remote Setpoint Input.

OUTPUTS

*Important: Up to 4 outputs possible. Two of the same type outputs are required to open & close the valve. Additional outputs available for alarm, 24VDC transmitter power supply or retransmit of process value or setpoint. Number of outputs and types are optional, see "MODELS" table.*  
**Control & Alarm Relays Contacts:** SPDT 2 Amp resistive at 240V AC, >500,000 operations  
**Dual Relay:** 2 SPST with shared common; 1 Amp resistive at 120/240V AC; >200,000 operations  
**SSR Drive:** Optional drive capability: >10 VDC nominal into 500 ohm 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 500 Ω max, 0 to 10V, 2 to 10V, 0 to 5V into 500 Ω min. Accuracy ±0.25% at 250 Ω (degrades linearly to 0.5% for increasing burden to specified limits). Retransmit of PV or SP only  
**Transmitter Power Supply Output:** 24VDC (nominal) into 910 Ω minimum to power external devices

OUTPUT FUNCTIONS

**Valve Control:** Open Loop Valve Motor Drive  
**Auto/Manual:** Selected from front panel  
**Retransmit:** Process value or setpoint

ELECTRICAL PERFORMANCE

**Accuracy:** ± 0.1% of input range ± 1 LSD (T/C CJC better than 1 degree C)  
**Input sample rate:** 4 per second, 14 bit resolution  
**Impedance:** >10M ohm for the thermocouple and mV ranges, 47k ohm for V ranges and 5 ohm for mA ranges  
**Sensor Break Detection:** <2 seconds (except zero based DC ranges) control outputs turn off. **IC & mV ranges:** high alarms activate. **RTD, mA or V ranges:** low alarms activate

COMMUNICATIONS INTERFACE

**User-selectable:** 2-wire, RS-485 serial communications option with choice of Modbus RTU or ASCII protocol; 1200 to 19200 baud  
**PC Configuration:** Offline configuration from serial port to dedicated configuration socket (comms option not required)

RATINGS/AGENCY APPROVALS

**Conformance:** CE, UR, cUR UL File # 67237  
**Safety:** EN61010  
**EMC:** EN61326

PROTECTION

IEC IP66 (NEMA 4X) front panel  
IEC IP20 (behind the panel protection)

PHYSICAL DIMENSIONS

**Panel Cutout:** 1.77" x 1.77" (45mm x 45mm)  
**Height:** 1.89" (48mm)  
**Width:** 1.89" (48mm)  
**Depth:** 4.33" (110mm)  
**Weight:** 0.46 lbs (0.21 kg)  
**Mounting:** Plug in panel with fixing strap

OPTIONS/ACCESSORIES

**NEW** 24VDC transmitter power supply option  
**NEW** Faster RS-485 serial communication speeds and user-selectable (Modbus® or ASCII) option  
**Digital Input 1 (Optional):** Selects between two setpoints or auto/manual control; volt free or TTL input  
**Basic Remote Setpoint Input (Optional):** 0-20mA, 4-20mA, 0-10V, 2-10V, 0-5V; scalable -1999 to 9999; local or remote setpoint selected from front panel  
**Optional Choice of LED colors:** (red/red, red/green, green/red, green/green); plus five indicators

WARRANTY

3 Years

\* Specifications are for base models with standard features only unless otherwise noted. Specifications subject to change without notice in accordance with our DBS policy of continuous improvement. All product and brand names are trademarks of their respective owners. All rights reserved.

West Instruments™ brand and 6170+™ are trademarks of Danaher Industrial Controls Group. All rights reserved.  
© 2005 DICG Corp.  
West Instruments brand 6170+ Data Sheet (3/06)

### 1/16 DIN Valve Motor Drive Controller

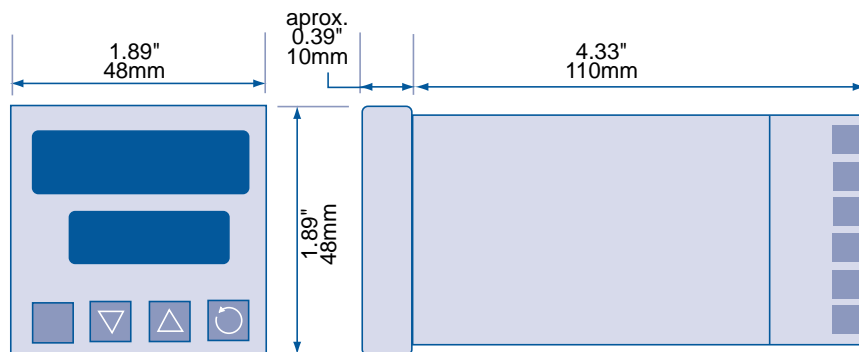
#### MODELS

Code 1: Model #	Code 2: Input	Code 3: Option Slot 1	Code 4: Option Slot 2	Code 5: Option Slot 3	Code 6: Option Slot A	Code 7: Voltage	Code 8: Display Color
<b>P6171Z</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I/16 DIN Valve Motor Drive	1 3 Wire RTD or DC mV 2 Thermocouple 3 DC mA 4 DC Voltage	0 Not fitted 1 Relay 2 SSR Driver 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA 8 Triac	0 Not fitted 1 Relay 2 SSR Driver 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA 8 Triac 9 Dual Relay	0 Not fitted 1 Relay 2 SSR Driver 3 DC 0-10V 4 DC 0-20mA 5 DC 0-5V 6 DC 2-10V 7 DC 4-20mA 8 Transmitter Power Supply	0 Not fitted 1 RS485 Communications 3 Digital Input 4 Auxiliary Input (Basic)	0 100-240V AC 2 24-48V AC or DC	0 Red Upper & Lower 1 Green Upper & Lower 2 Red Upper, Green Lower 3 Green Upper, Red Lower

\* Two outputs of the same type are required to open and close the valve. Use 1 x Dual Relay, 2 x Relay, 2 x Triac or 2 x SSR.

\*\*Two triac outputs maximum.

#### DIMENSIONS - 1/16 DIN



Panel Cutout: 45mm x 45mm (1.77" x 1.77")

ISE, Inc.

Phone: (440) 237-3200 • Fax: (440) 237-1744

10100 Royalton Rd.  
Cleveland, OH 44133 USA