

**Selection Guide** 

# **Product Catalog**

**Temperature and Process Control Instrumentation** 





# **Introducing West Control Solutions**

# Focused on providing valued temperature and process control expertise, global presence and support

West Control Solutions is part of Gems Setra, a leading global supplier of sensing and monitoring technologies, operating under Fortive Corporation, and is home to PMA, West Instruments, and CAL Controls. West Control Solutions provides efficient, cost-effective, high-quality products that today's automation marketplace demands.

Easy-to-use products can meet various needs, from simple, entry-level temperature controllers to highly sophisticated, functionally rich solutions for even the most complex control applications. Our comprehensive product range is a top choice for use in several industrial and scientific applications, including plastics machinery, ovens, furnaces, laboratory and test equipment, packaging machinery, food processing, semiconductors, and many more.

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# **Single Loop Panel-Mounted Controllers**

Model	MAXVU	3200	3300, 9300 & 9400	9500P	6100+, 8100+ & 4100+	6170+, 8170+ & 4170+	N2300	Pro 16	Pro 8	Pro 4
		10055	1000 1000 Prov	9500			2306			<b>325</b> 00000
Product Family	MAXVU	CAL	CAL	CAL	P-Series	P-Series	N-Series	West Pro	West Pro	West Pro
Page Number	5	6	7	8	9	10	11	13	14	15
Front Format										
1/32 DIN (24 x 48mm)		٠	•				٠			
1/16 DIN (48 x 48mm)	•		•	•	•	•		•		
1/8 DIN (96 x 48mm)	•				•	•			•	
1/4 DIN (96 x 96mm) 1/8 DIN horizontal (48 x 96mm)					•	•				•
Depth (behind panel)	70mm		107mm	107mm	1/16 110mm, other 100mm	1/16 110mm, other 100mm	110mm	112mm	118mm	118mm
Display										
Display type	Large 2 x 4 digit LED		1 x 2 digit LED (1)	2 x 4 digit LED	2 x 4 digit LED	2 x 4 digit LED	1 x 4 digit LED	1 x 4 digit LED + 1 x text	2 x 4 digit LED	2 x 4 digit/ text bar LED
Connectors										
Screw terminal - fixed	٠		٠	٠	٠	٠	٠		0	o
Screw terminal - plug-in		٠						٠		
Spade terminals									o	o
Inputs										
Thermocouple/RTD	٠	٠	٠	٠	٠	٠	٠	٠	٠	٠
DC linear V/mA	٠			٠	٠	٠	٠	٠	٠	٠
Digital input					1 or 2	1 or 2		2 or 4	1 or 3	2 or 4
Remote set-point					0	0		0	0	o
Outputs										
Max. Number of outputs	3	2	2	3	3	4	3	6	5	6
Relay	0	٠	0	٠	0	0	٠	0	0	o
SSR driver	0	٠	o	0	o	0	٠	0	o	o
DC linear				0	0	0		0	0	o
Triac					0	0				
Transmitter PSU					o	0		0	0	o
Features & Functions										
Control type	On/Off, PID	On/Off, PID	On/Off, PID	On/Off, PID	On/Off, PID	VMD	On/Off, PID	On/Off, PID VMD	On/Off, PID VMD	On/Off, PID VMD
Profiler				٠				•	•	0
Retransmission output				o	0	0		0	0	o
Heater break alarm								0	0	o
RS485 Modbus® comms	0		0	0	0	0	0	0	0	0
Software	MAXVU Configurator		CALgrafix	CALgrafix	Plus Series Configurator	Plus Series Configurator		BlueControl	BlueControl	BlueControl
Power Supply	Semgurator				eegurutor	Seringulator				
110 VAC	o	o	0	٠	o	o	o	0	0	o
230 VAC	o	o	o	•	o	o	o	o	o	o
12 VAC/DC		o	0				o			
24 VAC/DC	0	o	o		o	0	o	0	0	o
48 VAC/DC					0	0				

• Fitted • Option

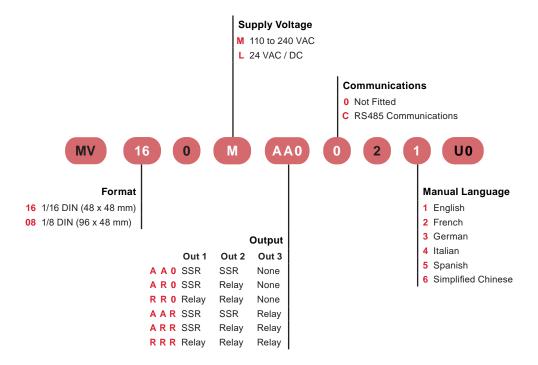
(1)9400 display: 2 x 4 digit LED

## MAXVU16 & MAXVU8 Compact Controller

The MAX*VU* is a cost effective temperature controller which is fast-to-configure, has improved display visibility and with only 70mm depth, reduces costs by minimizing wiring and panel space.

- 1/16 DIN (48 x 48 mm) and 1/8 DIN (96 x 48 mm) 70mm depth
- Large high visibility LED display
- Universal input for thermocouple, PT100, mV, V and mA sensors
- 2 or 3 outputs
- RS485 Modbus<sup>®</sup> RTU communications
- Heat/cool strategy
- Ramp/dwell with delay time
- · Front panel keys or software set up
- CE, UL and cUL





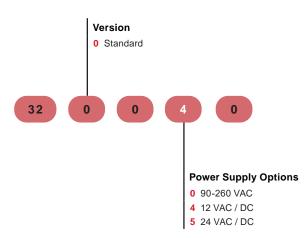
## **CAL 3200 Simple PID Temperature Controller**

The compact CAL 3200 1/32DIN temperature controller is designed to be easy-to-use and reliable within the most demanding process and manufacturing applications.

Designed for industrial or scientific applications CAL3200 has an impact resistant smoked fascia with large rubberized buttons with positive feedback. PID tuning is simple and efficient whilst the unique dAC function minimizes overshoot.

- 1/32 DIN (24 x 48 mm) and 1/16 DIN (48 x 48 mm), 102mm depth
- High impact fascia with rubberized buttons
- Thermocouple, PT100 (2 wire) and mV sensor input 2 outputs
- Plug in terminal block
- Simple menu-driven setup
- Heat/cool control strategy
- CE, UL and cUL





## 3300, 9300 & 9400 Easy-to-Use Controllers

The CAL range provides a choice of compact, impact resistant temperature controllers. The easy-to-use devices provide essential temperature control functionality including heat/cool operation and a simple ramp/dwell program. There is an integrated auto-tune feature for optimum PID settings and a unique dAC function to minimize overshoot.

## **Benefits & Features**

- 1/32 DIN (24 x 48 mm) and 1/16 DIN (48 x 48 mm), 107mm depth
- High impact fascia with rubberized buttons
- Thermocouple, PT100 (2 wire) and mV sensor input
- 2 outputs

- RS232 or RS485 Modbus<sup>®</sup> RTU communications
- Simple menu-driven setup
- Single ramp/soak (dwell) program
- Heat/cool control strategy
- CE, UL, cUL, CSA and FM



<sup>(1)</sup> Models 3311, 9311, 9400, 9411 and 9422 are not currently available in low voltage 12-24V option.

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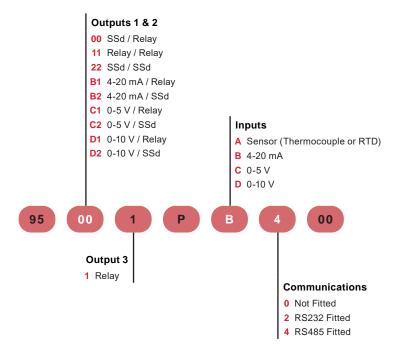
## 9500P 1/16 DIN Profiler

The CAL 9500P is ideal for applications requiring fixed value or ramping temperature profiles in a compact 1/16th DIN unit. The programmer allows up to 31 programs with up to an overall total of 126 segments.

Set up of the instrument can be carried out using the front buttons or alternatively with the CALgrafix software. The tool allows quick configuration and is easy to create recipes using the graphical 'drag and drop' feature. Users can also clone parameter settings of one unit to multiple instruments in the same network.

- 1/16 DIN (48 x 48 mm), 107mm depth
- · High impact fascia with rubberized buttons
- Thermocouple, PT100 (2 wire), mA, V and mV sensor input
- 3 outputs
- RS232 or RS485 Modbus<sup>®</sup> RTU communications
- Heat/cool control strategy
- Up to 126 segments shared in up to 31 programs
- Profiler functions include event outputs, loop, call, hold back and 3 power recovery modes
- Simple menu-driven setup
- CE, UL and cUL





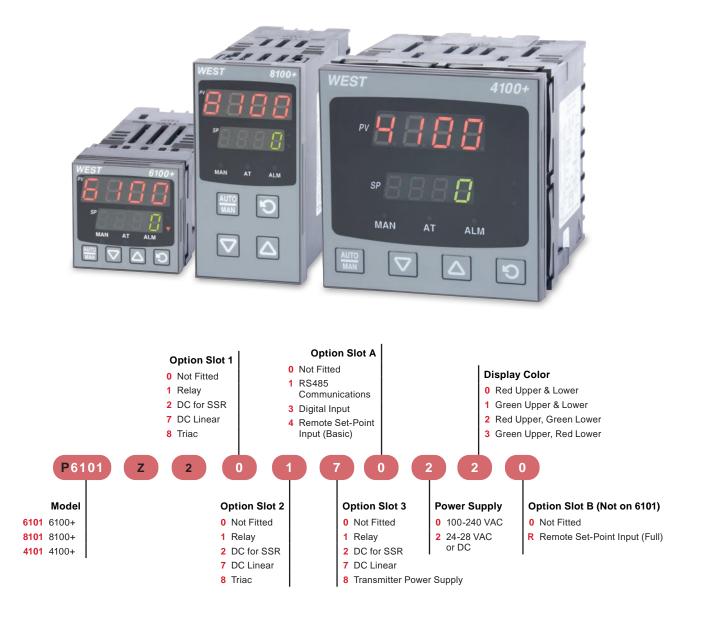
## 6100+, 8100+ & 4100+ Flexible PID Controller

The + series of controllers are used in many temperature and process control applications due to their versatility and ease-of-use. A wide range of input and output options include relay, SSR, transmitter power supply, linear, remote set-point and digital inputs. Control functionality includes remote and dual set-point options, heat/cool control and set-point ramping.

### **Benefits & Features**

- 1/16 DIN (48 x 48 mm), 110mm depth, 1/8 DIN (96 x 48 mm), 100 mm depth and 1/4 DIN (96 x 96 mm), 100mm depth
- Membrane fascia with common + series design
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Wide range of options available
- RS485 Modbus<sup>®</sup> RTU communications
- Heat/cool control strategy
- Programming port for fast configuration using FTP software
- CE, UL, cUL and CSA

• Up to 4 outputs



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

The 6170+, 8170+ and 4170+ have been designed for valve motor drive (VMD) applications. They feature the common + series interface and greater field flexibility. A unique VMD tuning algorithm continuously monitors the process to provide stable control at all times.

- 1/16 DIN (48 x 48 mm), 110mm depth, 1/8 DIN (96 x 48 mm), 100 mm depth and 1/4 DIN (96 x 96 mm), 100mm depth
- Membrane fascia with common + series design
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Wide range of options available
- RS485 Modbus<sup>®</sup> RTU communications
- Valve Motor Drive control strategy
- Programming port for fast configuration using FTP software
- CE, UL, cUL and CSA
- WEST 1170 AT ALM MAN AT ALM 3 Option Slot 2 0 Not Fitted **Option Slot A** 1 Relay **Display Color** 0 Not Fitted 2 DC for SSR 0 Red Upper & Lower 1 RS485 Comms 7 DC Linear 1 Green Upper & Lower 3 Digital Input 8 Triac 2 Red Upper, Green Lower 4 Auxiliary Input 9 Dual Relay (Basic) 3 Green Upper, Red Lower P6171 **Option Slot 3** Model **Option Slot 1 Power Supply** Option Slot B (Not on 6171) **6171** 6170+ 0 Not Fitted 0 Not Fitted 0 100-240 VAC 0 Not Fitted 2 24-28 VAC R Full Remote Set-Point with 8171 8170+ 1 Relay 1 Relay or DC **Digital Input 4171** 4170+ 2 DC for SSR 2 DC for SSR 7 DC Linear 7 DC Linear 8 Triac 8 Transmitter Power Supply
- Up to 4 outputs

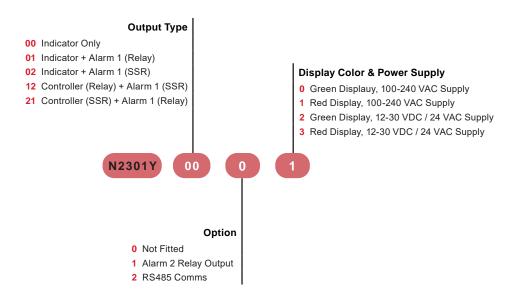
## N2300 1/32 DIN Controller

The West N2300 offers flexibility as a controller or an indicator. In addition to the main 4 digit display the N2300 benefits from three multi-color status LEDs for process, alarm and configuration indication.

The large, tactile rubberized keys provide a more practical human interface which is complemented with a specially developed PID tuning algorithm, Easy-Tune, which continuously monitors and improves control. The N2300 indicator has up to two outputs (relay or solid state driver) for alarm.

- 1/32 DIN (24 x 48 mm), 110 mm depth
- · High impact fascia with rubberized buttons
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS485 Modbus<sup>®</sup> communications
- PID control with manual override tune capability for specialized applications
- Simple operation and easy setup
- CE, UL and cUL





## Pro-16 1/16 DIN Advanced Controller

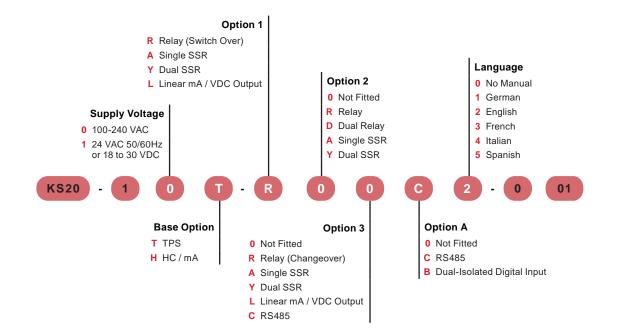
A compact, fully featured controller for demanding applications.

Pro-16 is the only controller of its size, flexible with up to 6 outputs, 2 digital inputs, a remote set-point input, RS485 communications and linked to best in class BlueControl© software.

The Pro-16 offers many integrated features for unrivaled performance such as two PID sets to ensure reliable control over a wide set-point range and separate PID for heat and cool strategies for optimized control and stability. Extensive flexibility is offered with 1 universal input and 1 optional process input, up to 4 digital inputs, 6 outputs and a built-in profiler.

- 1/16 DIN (48 x 48 mm), 112 mm depth
- · Display supports backlight color change and text
- Common West Pro family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 6 outputs
- RS485 Modbus<sup>®</sup> communications
- PID Heat/Cool and VMD control strategies
- · Optional heater current or remote set-point
- Customer-specific linearization for sensors
- Transmitter power supply
- Profiler 16 profiles x 16 segments
- CE, UL and cUL



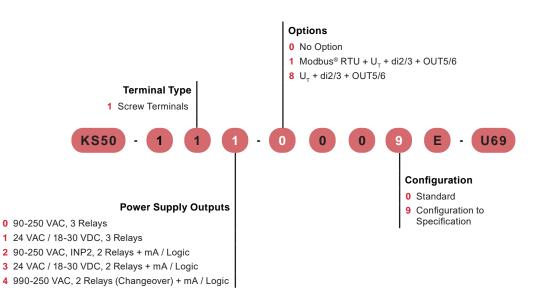


## **Pro-8 Universal Controller**

The Pro-8 devices are intended for universal and precise control tasks in all process applications plus special features for plastics machinery. Embedded monitoring functions supervise sensors and heaters for preventative maintenance.

- 1/8 DIN (96 x 48 mm), 118 mm depth
- Common West Pro family styling
- Programmable function key
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Customer-specific linearization for non-standard sensors
- Up to 3 outputs
- RS422/485 Modbus<sup>®</sup> communications
- Optional heater current or remote set-point
- PID heat/cool control strategy with water cooling
- Front interface and BlueControl<sup>®</sup> software
- Maintenance manager and error list
- Emergency operation after sensor break using % power output average
- Extended temperature range to 60°C
- CE, UL, cUL and EN 14597



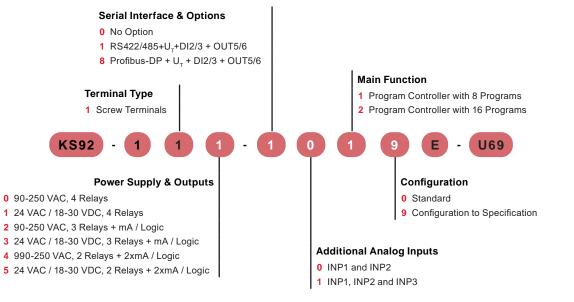


## **Pro-4 Advanced Controller**

The industrial and process controller Pro-4, takes over automatic control functions in all industrial sectors, precisely and economically. They offer the choice of simple On/Off control, PID control or stepping motor control. A bar-graph / text display provides the user with additional clear messages and process information.

- 1/4 DIN (96 x 96 mm), 118 mm depth
- Day/night display with additional text/bar line
- Common West Pro family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Optional second Universal input
- Customer-specific linearization for nonstandard sensors
- Up to 6 outputs
- RS422/485 Modbus<sup>®</sup> or Profibus communications
- PID heat/cool and VMD control strategies
- Front interface and BlueControl<sup>®</sup> software
- Profiler function 16 programs x 16 segments
- Maintenance manager and error list
- CE, UL, cUL and EN 14597





# **Multi-Loop Controllers**

	Pro-EC44	KS 98-2	KS Vario
Model	0000		
Page Number	17	19	21
Control Loops			
/laximum number	2	30	30
ormat			
/4 DIN (96 x 96mm) panel mount	•	•	
DIN rail behind panel			•
Display			
Display type	Mono LCD	Color LCD	None
Connectors			
Screw terminal - fixed	•	•	
Screw terminal - plug In			
Spade terminals		0	
Plug in spring terminals			•
nputs			
Process inputs	2	21	30
hermocouple/RTD	•	0	0
DC linear V/mA	•	0	0
Digital input	9	22	5
Remote set-point	0	o	0
Dutputs			
/ax. Number of outputs	9	11	300
Relay	•	o	0
SR driver	0	0	0
DC linear	0	o	0
riac	0		
ransmitter PSU	0	0	
eatures & Functions			
Control type	On/Off, PID	Fully programmable	On/Off, PID
etransmission outputs	0	0	0
leater break alarm		0	0
ogic capability		0	
Software	BlueControl	ET/KS 98-2 and SIM/KS 98-2	Blue Control
Communication	Didecontrol		Dide Control
/lodbus <sup>®</sup> RTU	0	0	0
rofibus		0	0
		ç	
DeviceNet		-	0
AN open		0	0
lodbus <sup>®</sup> TCP	0	0	0
thernet IP			0
rofinet		0	0
ower Supply			
10 VAC	0	0	
230 VAC	0	0	
4 VAC/DC	0	0	DC only

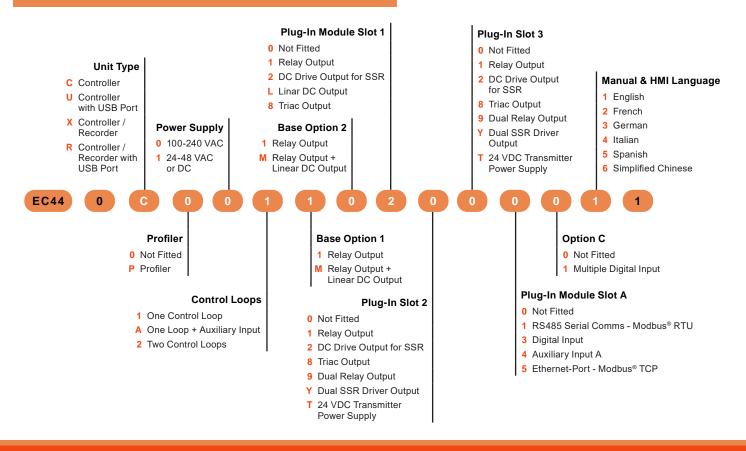
• Fitted • Option

## **Pro-EC44 Single/Dual-Loop Advanced Controller**

Pro-EC44 includes many features to ensure good control performance and easy to use. Single or dualloop capability in a single device, cascade, valve and ratio enhanced control with support for advanced features so Pro-EC44 has the flexibility to fit many application needs. In addition data-logging, trending, USB, Ethernet options add even more capability to an already powerful device.

- 1/4 DIN (96 x 96 mm), 117mm depth
- Graphical/text mono LCD display (red/green backlit LCD)
- 1 or 2 universal inputs for thermocouple, PT100, mV, V and mA sensors
- Customer-specific linearization for non-standard sensors
- Up to 9 outputs
- RS 485 Modbus<sup>®</sup> or Ethernet Modbus<sup>®</sup> TCP communications
- USB configuration and data access
- PID heat/cool and VMD control strategies
- · Gain scheduling, ratio and cascade control
- Profiler function 64 programs with up to 255 segments
- Data logger with real-time clock
- CE, UL, cUL





## **KS 98-2 Multi-Function Controller**

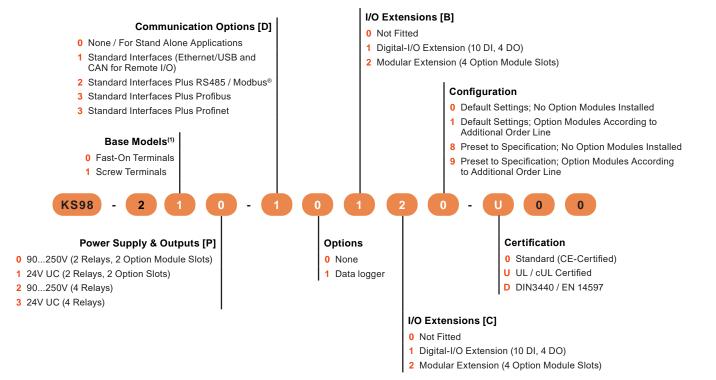
PMA's multi-function instrument KS 98-2 combines PID control, process monitoring, sequence control, data logging and alarms.

Function blocks from an extensive library can be used to build an application by easily selecting and connecting the blocks graphically using the "ET/KS98"-utility. This method is ideal for creating tailored control, including user interface pages with minimal effort. As a complete solution in a single unit, the KS 98-2 multi-function instrument helps to reduce programming, installation cost and control cabinet space.

## **Benefits & Features**

- Modular automation system in a 1/4-DIN (96 x 96mm), 118 mm depth
- 3.5 " color touch-screen display
- Universal Input (TC, RTD, DC linear mA/mV)
- · Expandable with modular inputs and outputs
- Up to 20 additional process inputs
- Up to 26 outputs
- Ethernet, USB, CAN, RS485, Profibus DP, Profinet
- Measure, control, calculate, and record
- Process visualization, operation, alarm and alerts
- Comprehensive application-oriented functionality
- · Graphical programming utility with simulator
- CE, cULus, DIN EN 14597





(1) Universal Input, 2 digital inputs, TPS, 2 option module slots

### Multi-Loop Panel-Mounted Controllers

## **KS 98-2 Multi-function Controller**

KS 98-2 offers comprehensive modular input and output options to adapt the unit to the application needs. The unit is optimized to handle the precise measurements required in the process industry via I/O modules supporting a variety of sensor types and also have galvanic isolation. Additional signal conditioners and isolating amplifiers are not necessary in most applications, saving cost and less installation.

#### **Hardware Flexibility**

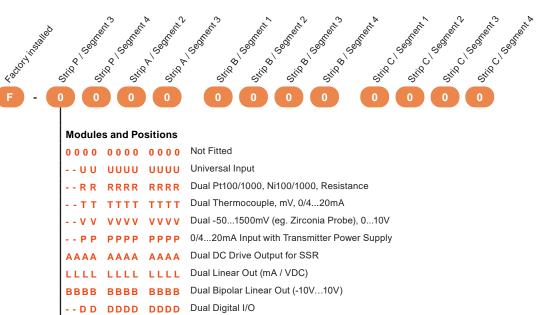
- Unprecedented number of I/O in a 1/4-DIN device
- Fully adaptable with up to 12 internal I/O-modules
- Almost every 1/4 DIN controller can be replaced/upgraded

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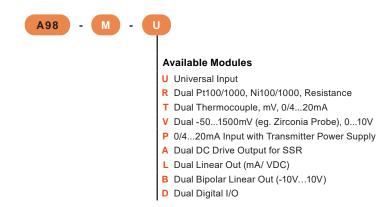
### KS 98-2 Option Modules

To be installed into KS98-2 in order line above Please indicate for all option module slots (12 digits)

A98



#### Separate Module Orders



## KS Vario Modular I/O Multi-Loop Control System

The KS vario behind panel multi-loop controller system was specifically developed for machine temperature control in combination with PLC systems. To ensure easy integration to wider plant systems, many common fieldbus systems are supported. By selecting the necessary I/O modules, the system can be configured for up to 30 control loops very economically and in precise increments.

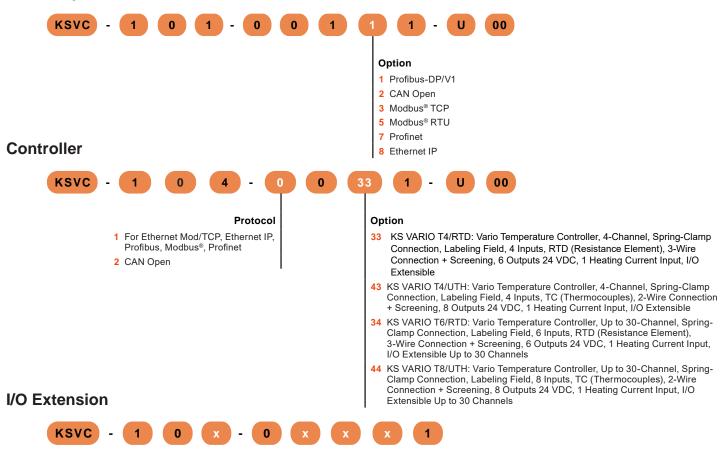
#### **Benefits & Features**

- Remote I/O style mechanical design Single module 12.2 x 120 x 71.5mm
- Up to 30 process inputs for thermocouple, PT100, mV, V and mA sensors
- · Variety of outputs for control and alarms
- RS485 Modbus, Ethernet Modbus<sup>®</sup> TCP, Profibus, Profinet, Ethernet/IP and CAN open communications
- PID control loops can be assigned to process inputs
- Additional process measurements and signals can be integrated
- Highly modular expansion
- Heater current monitoring
- CE, UL, cUL and CSA



For full dimensions see datasheet

#### **Bus Coupler**



For a full list of available modules please refer to the KS Vario price list or visit www.west-cs.com to get in contact.

### Multi-Loop Panel-Mounted Controllers

# **DIN Rail Panel-Mounted Controller**

Model	MAXVU Rail	KS 45	CI 45	SG 45	Rail Line I/O modules
Device Type	Controller/Transmitter	Controller	Transmitter	Strain Gauge Transmitter	I/O
Page Number	23	25	26	26	27
Dimensions (mm)					
Height	107	99	99	99	99
Width	22	22	22	22	22
Depth	123	117	117	117	117
Display					
Display type	OLED	LCD	LCD	LCD	LED indicator
Connectors				-	
Screw terminal - plug in	0	0	0	0	0
Spring terminal - plug-in	0	0	0	o	0
Inputs				-	
Thermocouple/RTD	•	٠	•		0
DC linear V/mA	•	٠	•		o
Strain gauge				•	
Digital inputs	•			-	
Remote set-point		•			0
Outputs					
Max. Number of outputs	3	3	3	2	8 per module
Relay	0	0	•		0
SSR driver	0	0	•		0
DC linear	0	0			0
Triac					
Transmitter PSU		0		•	
Features & Functions					
Control type	On/Off, PID	On/Off, PID	Measurement and alarm	Measurement and alarm	
Max. Number of alarms	2	3	3	3	
Retransmission output	o	0	0	o	
Heater break alarm					
Software	MAXVU Configurator	BlueControl	BlueControl	BlueControl	BlueControl
Communication					
Modbus <sup>®</sup> RTU	o	0	0	o	<u>.</u>
Bus coupler module support (for major Fieldbus)		0	o	o	o
Power Supply				<u>.</u>	<u>.</u>
110 VAC	o	o	o	o	<u>.</u>
230VAC	o	o	o	o	
24VAC/DC	o	0	o	o	•

• Fitted • Option

## MAXVU Rail Behind Panel Controller

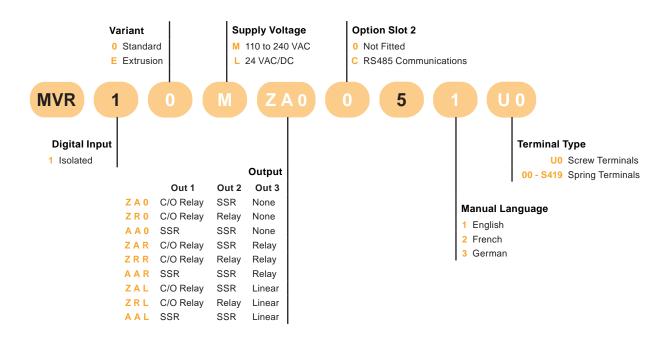
MAXVU Rail is a compact DIN-rail mount temperature controller/transmitter and limiter range for general industrial and scientific equipment requiring a reduced back panel footprint, centralized control or minimal front panel components.

## **Benefits & Features**

- DIN rail mounted, 107 x 22 x 103mm (HxWxD)
- OLED text/icon matrix display
- Thermocouple, PT100 or linear DC sensor input
- Isolated digital input
- Up to 3 outputs
- RS485 Modbus<sup>®</sup> RTU communications
- Heat/cool control strategy
- Quick setup menu
- Front configuration port
- CE, UL & cUL



## MAXVU Rail Controller / Transmitter



## **Rail Line Process Instrumentation System**

Rail Line offers high accuracy measurement modules and independent control, monitoring and limiter modules for decentralized automation installations. It provides connectivity to the common field bus systems.

## **Benefits & Features**

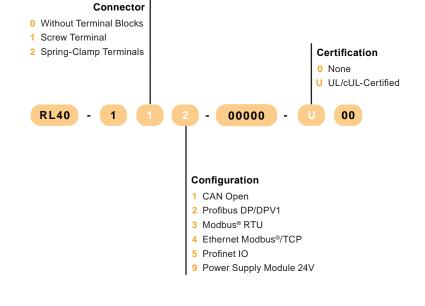
- DIN rail mounted, 96 x 22.5 x 117.5mm (HxWxD)
- Field bus coupler for Profibus, CAN, Modbus<sup>®</sup> TCP, Modbus<sup>®</sup> RTU and Profinet
- Up to 62 modules in a system
- · Configurable fail safe mode
- Stand alone function modules
- Hot swap capability
- Plug-in terminals
- CE, UL & cUL

## **Field Bus Couplers**

- Profibus DP
- Profinet IO
- Modbus/TCP
- CAN open
- Modbus<sup>®</sup> RTU
- And additional power supply for large systems







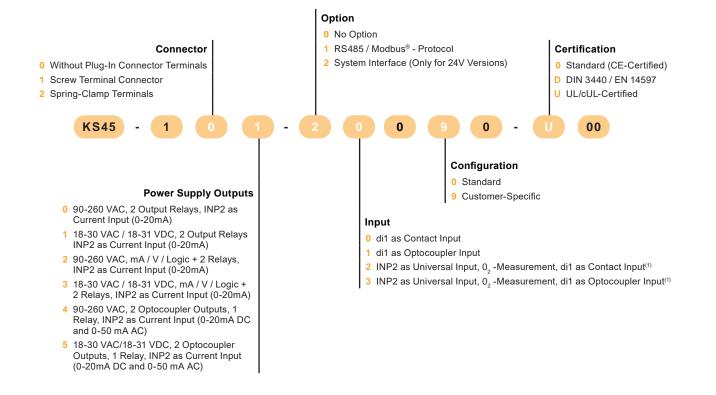
## KS 45 Rail Line Universal Controller

The KS 45 process controller is a stand alone version for direct connection via RS485 Modbus<sup>®</sup> or system version with bus coupler and inter-module connections permit additional controllers, transmitters and limiters to be fitted without additional power or communications wiring.

## **Benefits & Features**

- DIN-Rail Mounted 99mm x 22.5mm x 117.5mm (HxWxD)
- LCD configuration and status display
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Optional second universal input
- 3 outputs including one universal output
- RS485 Modbus® RTU or system fieldbus communications
- PID heat/cool and VMD control strategies
- · Fast sampling rate
- Timer and programmer
- · Customer-specific linearization for non-standard sensors
- CE, UL, cUL and type tested to EN 14597





<sup>(1)</sup>Not on versions with optocoupler outputs (KS45-1x4... and KS45-1x5...)

## CI 45 & SG 45 Rail Line Transmitter

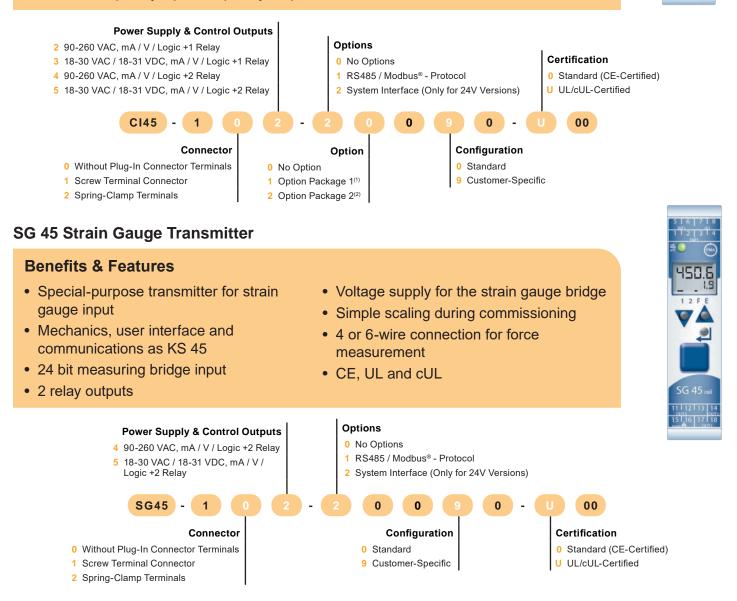
High accuracy transmitters, stand alone version for direct connection via RS485 Modbus® or system version with bus coupler and inter-module connections permit additional controllers, transmitters and limiters to be fitted without additional power or communications wiring.

### **CI 45 Universal Transmitter**

#### **Benefits & Features**

- DIN-Rail Mounted 99mm x 22.5mm x 117.5mm (HxWxD)
- LCD configuration and status display
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Optional second universal input
- 3 outputs including one universal output
- Counter/frequency input, frequency output
  CE, UL and cUL

- RS485 Modbus<sup>®</sup> RTU or system fieldbus communications
- User input calibration
- Slave pointer (min/max indicator)
- Fast sampling rate
- Customer-specific linearization for nonstandard sensors



(1) Option package 1: additional universal input INP2, plus: O2-measuring; counter input; functions tare, sample & hold and integrator <sup>(2)</sup> Option package 2: additional to option package 1: digital input as optocoupler and frequency input / output

#### **DIN Rail Mounted Devices** 23

## **Rail Line Data Acquisition Modules**

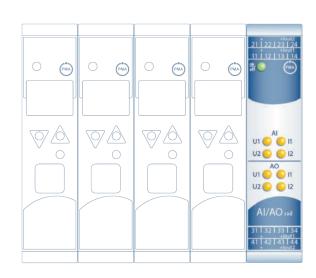
Rail Line offers a variety of sophisticated I/O modules for data acquisition and monitoring. They can be used in combination with the specialized function modules or just as remote I/O.

## **Benefits & Features**

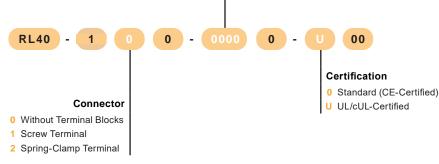
- DIN-rail mounted 99mm x 22.5mm x 117.5mm (HxWxD)
- LED indicators for status
- Digital and analog input & output modules
  - Pt 100 in 2 or 4-wire connection
  - Thermocouples
  - mA/V
  - Relays
  - Potential-free digital inputs
  - NPN/PNP inputs
- · Fits with system fieldbus communications
- High precision analog signals
- Reinforced galvanic isolation
- Linearization and measured value correction

4220 RL 422-0 Analog Inputs, 4 x I / U / TPS / Potentiometer

• CE, UL and cUL



#### 4221 RL 422-1 Analog Inputs 2 x I / U Galvanic. Isolated 2 x AO (±U / ±I, 12 Bit) 4230 RL 423-0 RTD 4 x Pt100 Galvanic Isolated **Digital Outputs** 4231 RL 423-1 RTD 4 x Pt1000 Galvanic Isolated 4232 RL 423-2 RTD 4 x Pt100/Pt1000 4510 RL 451-0 Digital Outputs 2 x 4 24 VDC / 2A 4233 RL 423-3 RTD 2 x Pt100 Galvanic Isolated 4520 RL 452-0 Relay Outputs 4 x 230 VDC / 5A 4240 RL 424-0 2 x TC Galvanic Isolated 4241 RL 424-1 2 x TC / O2 (mV) 4242 RL 424-2 4 x TC Galvanic Isolation 2/2 4610 RL 461-0 Combi module, 2 x AI (±U / ±I, 16 Bit Differential Inputs; 2 x AO (±U / ±I, 12 Bit) **Digital Inputs** 4420 RL 442-0 Digital Inputs 2 x 4 24 VDC (PNP / Contact, Potential-Free) 4421 RL 442-1 Digital Inputs 2 x 4 24 VDC (NPN / Contact, Potential-Free) 4422 RL 442-2 Digital Inputs 8 x 1 24 VDC (Individual Supply) 4430 RL 443-0 4 x Digital Inputs (115/230 VAC)



#### Analog Inputs Analog Outputs

4310 RL 431-0 4 x I / U (±10V / ±20mA, 12 Bit)

- 4610 RL 461-0 Combi Module, 2 x AI (±U / ±I, 16 Bit) Differential Inputs;
- 4511 RL 451-1 Digital Outputs 2 x 4 24 VDC / 2A (Free Wheeling Diode)

# **Panel-Mounted Indicators**

	6010+ & 8010+	D280-1	EI2410	EI2041
Model	50 IQ		100 : •	4000
Family	+ Series	Blueport	Thermostat	Thermostat
Page Number	29	30	31	31
Front Format				
Thermostat format (29 x 71mm)			•	•
1/32 DIN (24 x 48mm)				
1/16 DIN (48 x 48mm)	o			
1/8 DIN horizontal (48 x 96mm)	o	•		
Depth	110mm / 100mm	118mm	71mm	71mm
Display				
Display type	4 digit LED	5 digit LED	4 digit LED	4 digit LED
Connectors				
Screw terminal	•	0	•	•
Spade terminals		O		
Inputs				
Thermocouple/RTD	•	•		
DC linear V/mA	•	•		•
NTC			•	
Outputs				
Max. Number of outputs	3	3	0	2
Relay	0	0		0
SSR driver	o			
DC linear	0	0		
Triac	0			
Transmitter PSU	o	0		•
Features & Functions				
Alarm	•	٠	Visual display only	•
Retransmission output	0	0		
RS485 communications	0	0		0
Software	Plus Series Configurator	BlueControl		
Power Supply				
110 VAC	0	0	0	0
230 VAC	o	0	o	o
12 VAC/DC			o	0
24 VAC/DC	0	0	0	0
48 VAC/DC	o			

• Fitted • Option

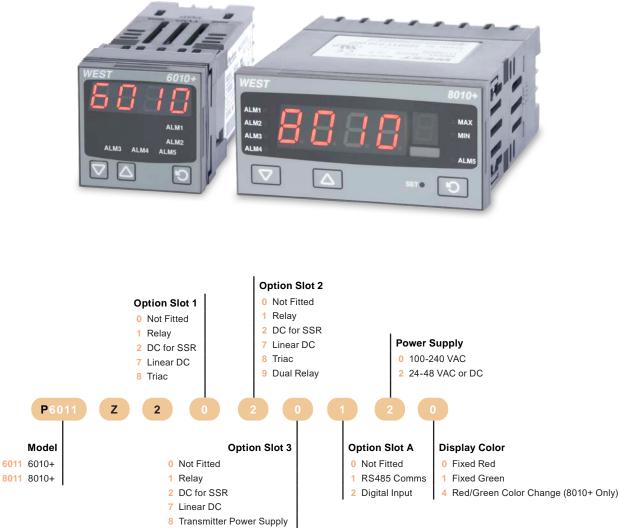
## 6010+ & 8010+ Process Indicators

The 6010+ and 8010+ digital panel process indicators are designed for optimal ease of use in a wide variety of temperature and related process applications. Output options allow for PV retransmission or transmitter power supply and up to 4 alarm relays (latching or non-latching).

## **Benefits & Features**

- 1/16 DIN (48 x 48 mm), depth 110mm and 1/8 DIN horizontal (48 x 96 mm), depth 100 mm
- Membrane fascia with common + series design
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 4 outputs

- RS485 Modbus<sup>®</sup> RTU communications
- Latching or non-latching alarm outputs
- Programming port for fast configuration using FTP software
- Multi-point scaling and tare features
- CE, UL, cUL and CSA



9 Dual Relay (8010+ Only)

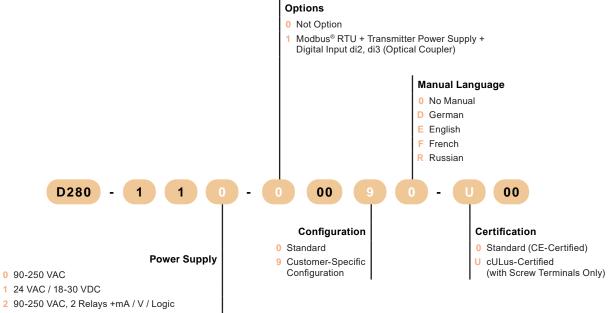
## **D280-1 5-Digit Process Indicator**

The PMA Digital 280-1 indicator ensures a fast reaction time with a scan rate of 100 ms.

The instrument offers customer-specific linearization for special sensors (16 segments). The maximum and minimum values are stored and can be displayed when needed. In addition to an indicator the Digital 280-1 can also be used as a controller.

- 1/8 DIN (horizontal 48 x 96 mm), 118mm depth
- 5-digit, 20mm large display
- Common BluePort<sup>®</sup> family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS485 Modbus<sup>®</sup> RTU communications
- BluePort<sup>®</sup> front interface and BlueControl<sup>®</sup> software
- Maintenance manager and error list
- Widely configurable alarms
- CE, UL and cUL





## El2410 & El2041 Basic Indicators

Compact digital indicators for temperature and process measurement. El2410 offers temperature indication within a range of -60 to 150°C using a NTC sensor. El2041 rescales linear DC signals to display process data in the required units.

#### EI2410

## **Benefits & Features**

- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- NTC sensor input
- Zero point shift input calibration
- Temperature units selection °F or °C
- Min and max values can be stored
- Upper and lower adjustable alarm limits
- CE

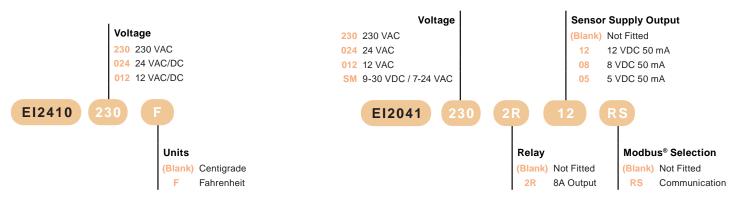
### EI2041

### **Benefits & Features**

- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- Input types (0-20mA, 4-20mA, 0-1V, 0-10V)
- Up to 2 relay outputs
- Scale adjustable between -1999 and 4000
- Adjustable decimal point with process units
- Min and max values can be stored on the display
- RS485 Modbus<sup>®</sup> RTU communications
- Alarm function
- TPS output
- CE

## EI2410









# **Limit and Monitor Devices**

	MAXVU Rail Limiter	6700+, 8700+ & 4700+	TB 45	TB 40-1	STB 50	STB 55
Model	2000 2000				O ZLARC I I I I I I I I I I I I I I I I I I I	21.5°C
Family	MAXVU	+ Series	Rail Line	Blue Port		
Page Number	33	34	35	36	37	38
Format						
1/16 DIN (48 x 48mm)		•				
1/8 DIN (96 x 48mm)		•		•		
1/4 DIN (96 x 96mm)		•			•	
DIN rail behind panel	•		•			•
Depth (inside panel)	123mm	110mm / 100mm	118mm	118mm	119mm	110mm
Display						
Display type	OLED	2 x 4 digit LED	LCD	2 x 4 digit LED	LCD	LCD
Connectors						
Screw terminal - fixed		•		0		0
Screw terminal - plug-in	•		0			
Faston terminals				0		
Spring clamp terminal			0		•	
Inputs						
Thermocouple/RTD	•	•	•	•	•	•
DC linear V/mA	•	•	•	•		
Digital inputs	1	1 or 2	1	1 or 3	1	1
Outputs						
Max. Number of outputs	3	3	3	3	3	3
Relay	•	•	•	•	•	•
SSR driver	o	o				
DC linear	o	o	•	•	•	•
Triac		o				
Transmitter PSU		o				
Certification						
FM	•	•				
EN14597			•	•	•	•
SIL2					•	•
Features & Functions						
RS485 communications	o	o	0	o		
Software		Plus Series Configurator	BlueControl	BlueControl		
Power Supply	-	-				
110 VAC	o	o	0	o	0	o
230 VAC	o	o	0	o	0	o
24 VAC/DC	0	0	0	0	0	0

• Fitted • Option

## MAXVU Rail Behind Panel Temperature Limiter

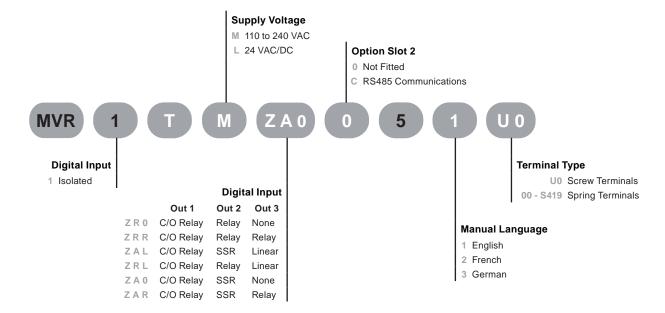
MAXVU Rail is a compact DIN-rail mount temperature limiter for equipment requiring a reduced back panel footprint, centralized control or minimal front panel components.

## **Benefits & Features**

- DIN rail mounted, 107 x 22 x 103mm (HxWxD)
- OLED Text / Icon matrix display
- Thermocouple, PT100 or linear DC sensor input
- Isolated digital input
- Up to 3 outputs
- RS485 Modbus<sup>®</sup> RTU communications
- · Limit alarm plus separate warning
- · Quick setup menu
- Front configuration port
- CE, UL & cUL & FM



Limit Device Approval: FM



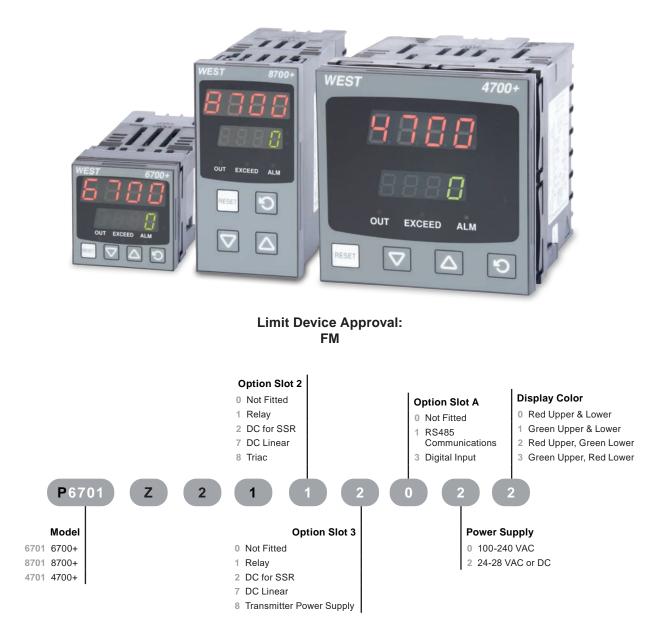
## **MAXVU Rail Limiter**

## 6700+, 8700+ & 4700+ Panel Mount Limit Controller

The + series of limiter are used in a broad range of temperature control applications where independent protection is required. The devices have commonality with the + series controllers in both styling and operation so can both easily be integrated within the same equipment.

## **Benefits & Features**

- 1/16 DIN (48 x 48 mm), 110mm depth, 1/8 DIN (96 x 48 mm), 100 mm depth and 1/4 DIN (96 x 96 mm), 100mm depth
- Membrane fascia with common + series design
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Wide range of options available
- RS485 Modbus<sup>®</sup> RTU communications
- · Limit alarm plus separate warning
- Programming port for fast configuration using FTP software
- CE, UL, cUL, CSA and FM



• Up to 3 outputs

## **TB 45 Behind Panel Temperature Limiter**

The TB 45 temperature monitor/limiter offers a stand alone version for direct connection via RS485 Modbus<sup>®</sup> or system version with bus coupler and inter-module connections which permit additional controllers, transmitters and limiters to be fitted without additional power or communications wiring.

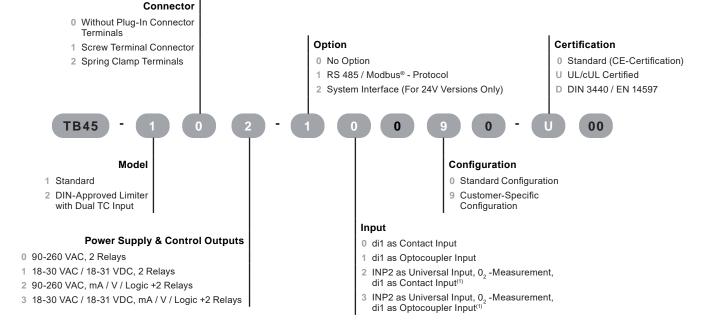
## **Benefits & Features**

- DIN-Rail Mounted 99mm x 22.5mm x 117.5mm (HxWxD),
- LCD configuration and status display
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Optional second input
- · 2 alarm outputs and retransmission output
- RS485 Modbus<sup>®</sup> RTU or system fieldbus communications
- · Limit alarm plus separate warning
- Meets requirement of TB and TW to EN14597
- CE, UL and cUL

See other Rail Line products on page 24.



Limit Device Approval: EN14597 TB & TW



<sup>(1)</sup> Only available on standard version (model = 1).

The TB40-1 limiter is used in a broad range of temperature control applications including furnaces and steam equipment where independent protection is required.

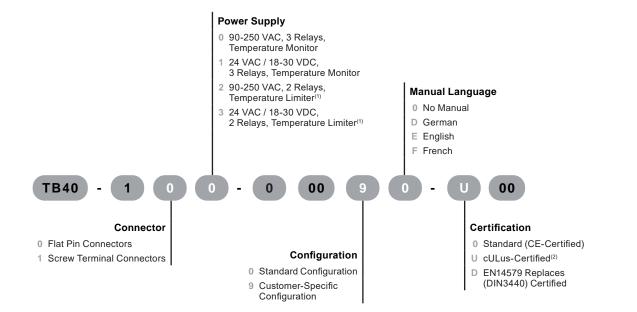
The devices have commonality with the BluePort<sup>®</sup> controllers in both styling and operation so can easily be integrated within the same equipment.

## **Benefits & Features**

- 1/8 DIN (horizontal 48 x 96 mm), 1/8 DIN (96 x 48 mm) and 1/4 DIN (96 x 96 mm), 118 mm depth
- Common BluePort<sup>®</sup> family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS 422/485 Modbus® communications
- BluePort<sup>®</sup> Front interface and BlueControl<sup>®</sup> software
- · Limit alarm plus separate warning
- Meets requirement of TB and TW to EN14597
- CE, UL and cUL



Limit Device Approval: EN14597 TB & TW



 $^{(1)}$  TB (EN14597, 2009-1), not available with cULus  $^{(2)}$  With screw terminals only, not available as Temperature limiter TB (EN14597, 2009-1)

## **STB 50 Panel Mount Safety Limiter**

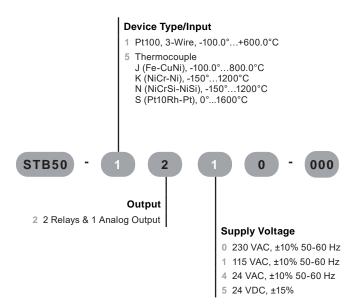
The STB 50 safety temperature limiter is used as a panel mounted device when thermal processes must be monitored and the system must be transferred into a safe operational state in case of fault.

## **Benefits & Features**

- 1/8 DIN (96 x 48 mm), 119 mm depth
- Panel-mounted device
- Graphic-LCD-display, with white LCD-backlight
- Inputs RTD Pt100 or double-thermocouple
- · 2 alarm outputs and retransmission output
- Usable as limiter and exhaust gas limiter
- · Safety limit alarm plus separate warning
- Memory function for error message
- Certified according to DIN EN 14597 SIL2



Limit Device Approval: SIL2, EN14597



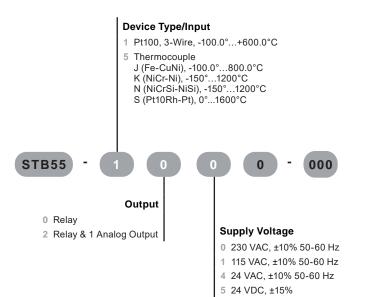
The STB55 safety temperature limiter is used as a behind panel device when thermal processes must be monitored and the system must be transferred into a safe operational state in case of fault.

## Benefits & Features

- Rail Mounted (100 x 50 mm), 110 mm depth
- Behind panel device
- Graphic-LCD-display, with white LCD-backlight
- Inputs RTD Pt100 or double-thermocouple
- 2 alarm outputs and retransmission output
- · Usable as limiter and exhaust gas limiter
- Safety limit alarm plus separate warning
- Memory function for error message
- Certified according to DIN EN 14597 SIL2



Limit Device Approval: SIL2, EN14597



# **Digital Thermostats**

	ET2001 & ET2011	ET2411 & ET2412	EDT2411, EDT2412 & EDT2423	ETM2432 Timer
Model	88	100 :: •	5 :: +	2800
Page Number	40	41	41	42
Display				
Display type	1 x 4 digit LED	1 x 4 digit LED	1 x4 digit LED	1 x 4 digit LED
Single line	•	•	•	•
Connectors				
Screw terminal	•	•	•	٠
Inputs				
J thermocouple	o			
PT100	o			
NTC		•	•	
Digital input				3
Outputs				
Max. Number of outputs	2	2	3	2
Relay	•	•	•	٠
SSR	o			
Features & Functions				
Control type	On/Off, PID	On/Off	On/Off	Timed relay
Defrost function			•	
RS485 communications			o	
CAL-key programming			o	
Power Supply				
110 VAC	o	o	o	o
230 VAC	o	o	o	o
12 VAC/DC	o	o	o	o
24 VAC/DC	o	o	o	0

• Fitted • Option

## ET2001 & ET2011 Industrial Digital Thermostats

The CAL thermostat range is a complete family of small format devices for basic heating or cooling applications. The ET thermostats are cost-effective thermostat devices for both industrial heating or cooling applications, two output version also includes alarm function.

## **Benefits & Features**

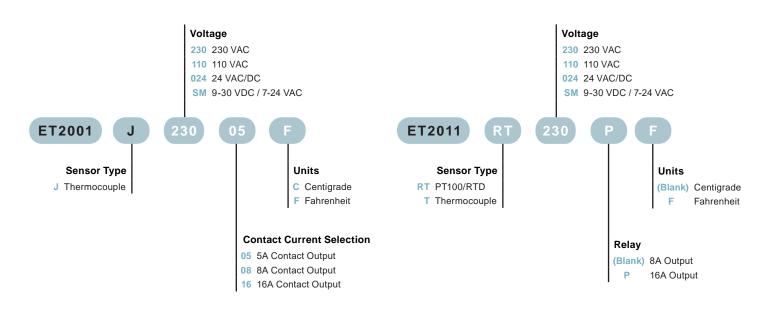
- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- J Thermocouple, PT100 (ET2011 only)
- Up to 2 outputs

- High current relay output available
- Heating or cooling control strategy
- On/Off or PID (ET2011) Control
- CE



### **Single Output - Relay**





## ET2XXX & EDT24XX Commercial Digital Thermostats

The ET2411 and ET2412 are specifically designed for use with NTC sensors. They are easy to configure, have a large clear display for good visibility and a compact design that is fast to install.

The EDT defrost thermostats have additional features to ensure optimum control and performance of a refrigeration system such as compressor protection, defrost control, real-time clock, communications and fast CAL-Key memory programming.

## ET2411 & ET2412 Digital Thermostats

### **Benefits & Features**

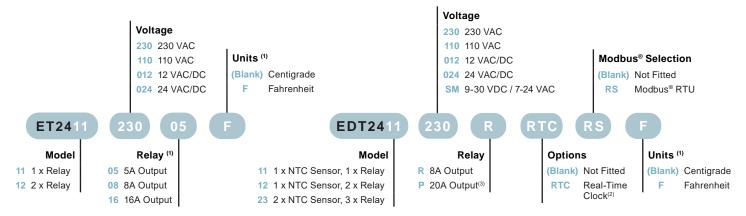
- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- NTC Sensor input -60 to 150°C
- Up to 2 outputs
- High current relay output available
- · Heating or cooling On/Off control strategy
- CE

## EDT2411, EDT2412 & EDT2423 Digital Thermostats

### **Benefits & Features**

- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- Up to Two NTC Sensor input -60 to 150°C
- Up to 3 outputs
- High current relay output available
- RS485 Modbus® communications
- Compressor, defrost and fan control
- Real-time clock option
- CAL-key configuration
- CE

## ET2411 & ET2412



(1) These options are only available or ET2411 (2) Only available with 8A relay devices (3) Not on EDT2423



EDT2411, EDT2412 & EDT2423

EDT24



## ETM2432 Digital Timer

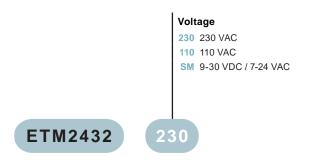
In the same style as the thermostat range, a digital timer is available for associated monitoring and timebased control.

The ETM2432 is fully adjustable with nine timer modes and designed for easy integration within a control installation to fit the user's needs.

- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- External start, reset and hold digital inputs
- Dual contact timed output
- HH:MM or MM:SS
- Scale 0:01 to 99:59 minutes or 0:01 to 99:59 hours

- Adjustable increasing and decreasing steps
- Time remaining displayed
- Start/stop control from front panel
- Upper and lower adjustable timer limits
- CE





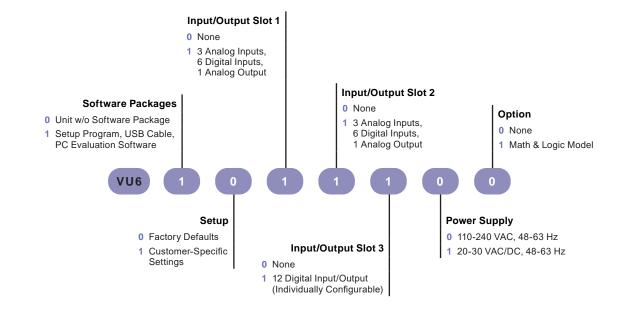
# **Paperless Recorders**

## **DataVU 6 Paperless Recorder**

The DataVU 6 paperless recorder features a resistive touchscreen and an intuitive, icon-based operation and visualization concept that makes it very easy to use. DataVU 6 supports up to 6 internal channels and up to 24 total by adding external I/O.

- 144 x 144 x 119 mm (H x W x D)
- TFT display with touch operation
- Up to 6 internal analog inputs
- Up to 2 analog outputs
- RS485 Modbus<sup>®</sup> and Modbus<sup>®</sup> TCP communications
- Modbus® master function
- 18 external analog and digital channels
- 1 GB internal data memory
- Horizontal and vertical line graph
- CE, UL and cUL



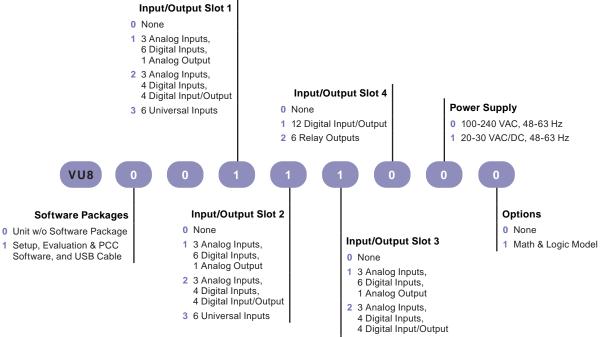


## **DataVU 8 Paperless Recorder**

The DataVU 8 paperless recorder features a resistive touchscreen and an intuitive, icon-based operation and visualization concept that makes it very easy to use.

- 144 x 144 x 121 mm (H x W x D)
- TFT display with touch operation
- Up to 6 internal analog inputs
- Analog, digital, and relay outputs available
- Modbus<sup>®</sup> RTU, Modbus<sup>®</sup> TCP, Profinet communications
- Modbus<sup>®</sup> master function
- Up to 10 customer-specific process screens
- 1 GB internal data memory
- · Horizontal and vertical line graph
- CE, UL and cUL





## **Pressure Transmitters**

## **P30-2 Pressure Transmitter**

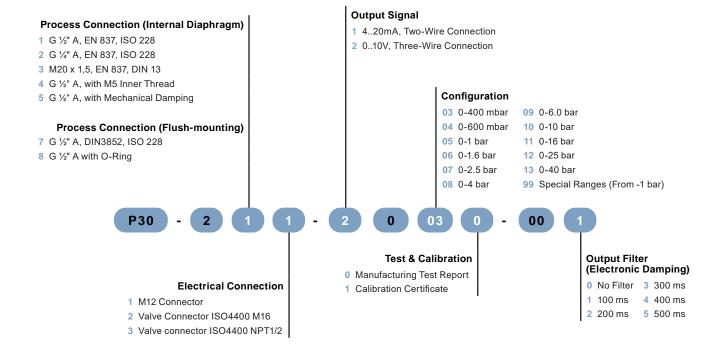
Industrial pressure transmitters for safe measurement and monitoring of many applications including gases, vapors and liquids. Designed to withstand harsh environments in the process industry.

P30-2 is suitable for applications up to 40 bar gauge pressure.

### **Benefits & Features**

- Premium pressure transmitter for gauge pressure measurement with 3 years warranty
- · High repeatability and long-term stability
- High overload resistance
- Measuring ranges up to 40 bar (600psi)
- Customer-specific measuring ranges available
- Flush-mounted or manometer connection
- Housing and connection made from 316L





**Pressure Transmitters** 

## **P40-2 Pressure Transmitter**

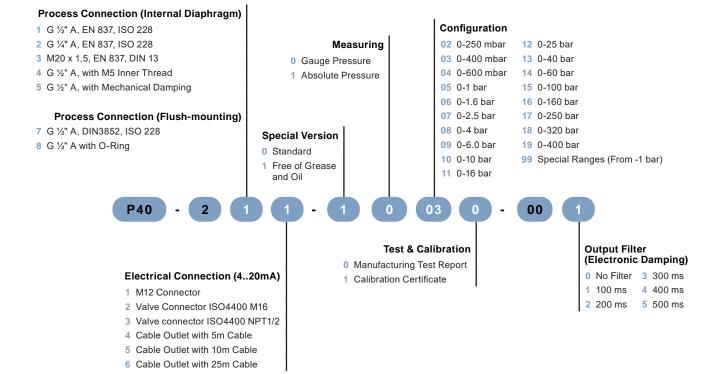
Industrial pressure transmitters for safe measurement and monitoring of many applications including gases, vapors and liquids. Designed to withstand harsh environments in the process industry.

P40-2 is suitable for applications up to 400 bar gauge and absolute pressure with excellent accuracy and repeatability.

## **Benefits & Features**

- Premium pressure transmitter for gauge and absolute pressure measurement with 3 years warranty
- High repeatability and long-term stability
- High overload resistance
- Measuring ranges up to 400 bar (6000psi)
- Customer-specific measuring ranges available
- · Flush-mounted or manometer connection
- Housing and connection made from 316L





For a full list of available modules please refer to the Pressure Transmitters brochure or visit www.west-cs.com to get in contact.

## Contact

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