

Product Catalogue

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 (WCS), a Fortive operating company, is home to PMA, West Instruments and CAL Controls. This leading group combined their resources and expertise as a single organisation to deliver innovative, cost-effective, and high-quality products that today's process automation marketplace demands.

From simple, entry-level devices to highly sophisticated, functionally-rich solutions, our comprehensive product portfolio includes single and multi-loop controllers, limit devices, indicators, SSRs, power controllers and transmitters along with recorders and tools for data acquisition.

WCS pride ourselves on being a dedicated global team of temperature and process control experts, who can provide in-depth application knowledge, and are always there to support our customers. As a result, our products are repeatedly used in control applications such as plastics machinery, ovens, furnaces, laboratory and test equipment, packaging machinery and food processing and many more.



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Single Loop Panel Mounted Controllers

Model	MAXVU	3300, 9300 & 9400	9500P	6100+, 8100+ & 4100+	6170+, 8170+ & 4170+	N2300	N6400	KS20-1	KS40-1, KS41-1 & KS42-1	KS50-1 & KS52-1	KS90-1 & KS92-1
Product family	MAXVU	CAL	CAL	P-Series	P-Series	N-Series	N-Series	Blueport	Blueport	Blueport	Blueport
Page number	5	6	7	8	9	10	11	12	13	14	15
Front Format											
1/32 DIN (24 x 48mm)		●				●					
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	110mm	112mm	118mm	118mm	118mm
Display											
Display type	Large 2 x 4 digit LED	1 or 2 digit LED ⁽¹⁾	2 x 4 digit LED	2 x 4 digit LED	2 x 4 digit LED	1 x 4 digit LED	2 x 4 digit LED	1 x 4 digit LED + 1 x text	2 x 4 digit LED	2 x 4 digit LED	2 x 4 digit / text / bar LED
Connectors											
Screw terminal - fixed	●		●	●	●	●	●		○	○	○
Screw terminal - plug-in		●						●			
Spade terminals									○	○	○
Inputs											
Thermocouple/RTD	●	●	●	●	●	●	●	●	●	●	●
DC linear V/mA	●		●	●	●	●	●	●	●	●	●
Digital input				1 or 2	1 or 2			2 or 4	1 or 3	1 or 3	2 or 4
Remote setpoint				○	○			○	○	○	○
Outputs											
Max. number of outputs	3	2	3	3	4	3	3	6	3	5	6
Relay	○	○	●	○	○	●	○	○	○	○	○
SSR driver	○	○	○	○	○	●	○	○	○	○	○
DC linear			○	○	○		○	○	○	○	○
Triac				○	○		○				
Transmitter PSU				○	○			○	○	○	○
Features & Functions											
Control type	On/Off, PID	On/Off, PID	On/Off, PID	On/Off, PID	VMD	On/Off, PID	On/Off, PID	On/Off, PID VMD	On/Off, PID VMD	On/Off, PID VMD	On/Off, PID VMD
Profiler			●				●	●	●	●	○
Retransmission output			○	○	○		○	○	○	○	○
Heater break alarm								○	○	○	○
RS485 Modbus comms	○	○	○	○	○	○	○	○	○	○	○
Software	MAXVU Configurator	CALgrafix	CALgrafix	Plus Series Configurator	Plus Series Configurator			BlueControl	BlueControl	BlueControl	BlueControl
Power Supply											
110 VAC	○	○	●	○	○	○	○	○	○	○	○
230VAC	○	○	●	○	○	○	○	○	○	○	○
12VAC / DC		○				○					
24VAC / DC	○	○		○	○	○	○	○	○	○	○
48V AC / DC				○	○		○				

- = Fitted
- = Option

(1) 9400 display: 2 x 4 digit LED

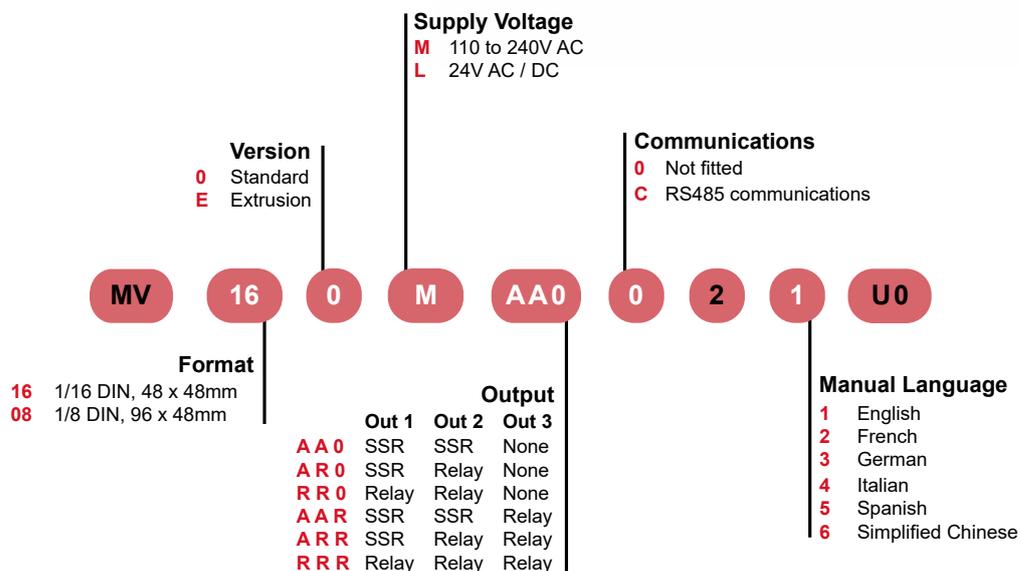
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MAXVU16 & MAXVU8 Compact Controller

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

Benefits and features

- 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 RTU communications
- Heat/cool control strategy
- Ramp/dwell with delay time
- Front panel keys or software set up
- CE, UL and cUL



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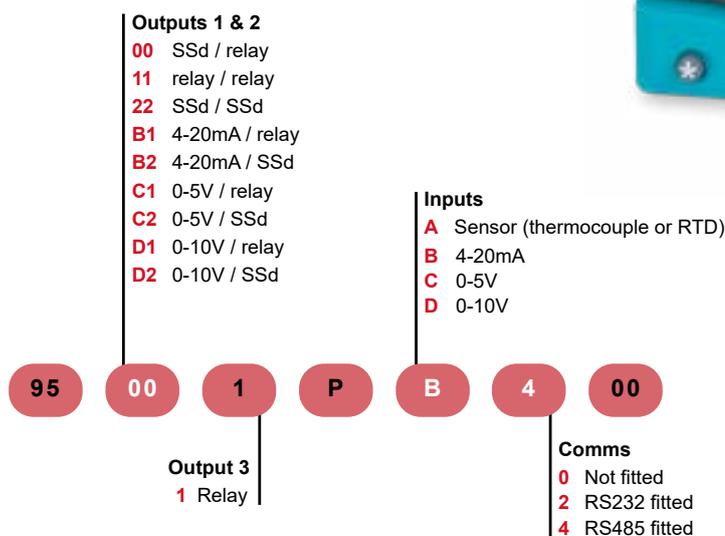
9500P 1/16 DIN Profiler

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.

Benefits and features

- 1/16 DIN (48 x 48 mm), 107mm depth
- High impact fascia with rubberised buttons
- Thermocouple, PT100 (2 wire), mA, V and mV sensor input
- 3 outputs
- RS232 or RS485 Modbus 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



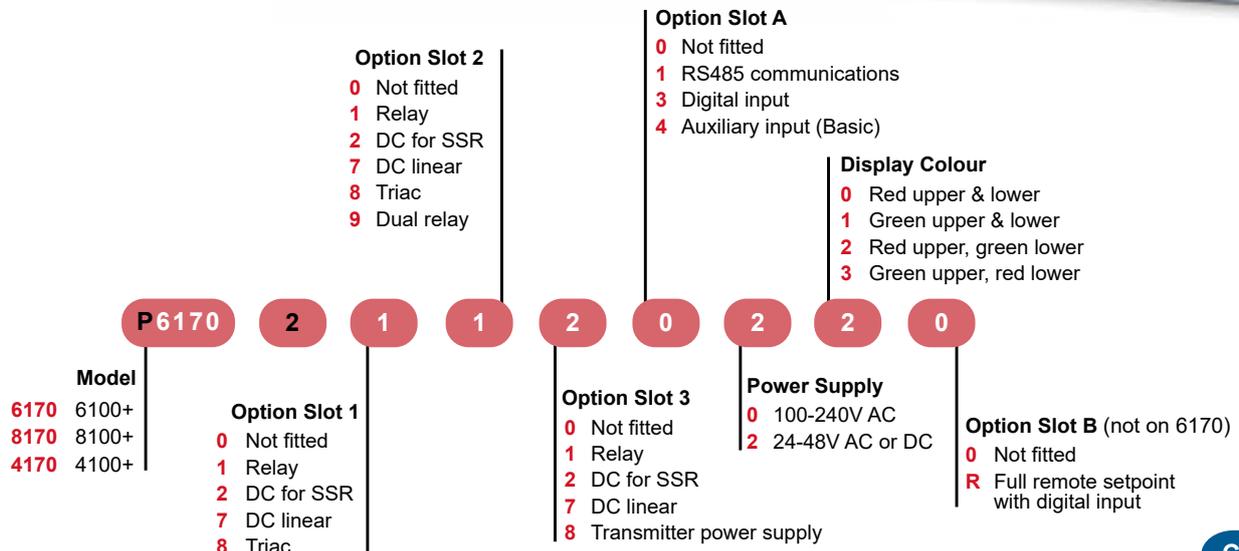
6170+, 8170+ & 4170+ Valve Motor Drive Controller

The 6170+, 8170+ and 4170+ have been designed for open loop 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.

Benefits and 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
- Up to 4 outputs
- Wide range of options available
- RS485 Modbus RTU communications
- Valve Motor Drive control strategy
- Programming port for fast configuration using FTP software
- CE, UL, cUL and CSA



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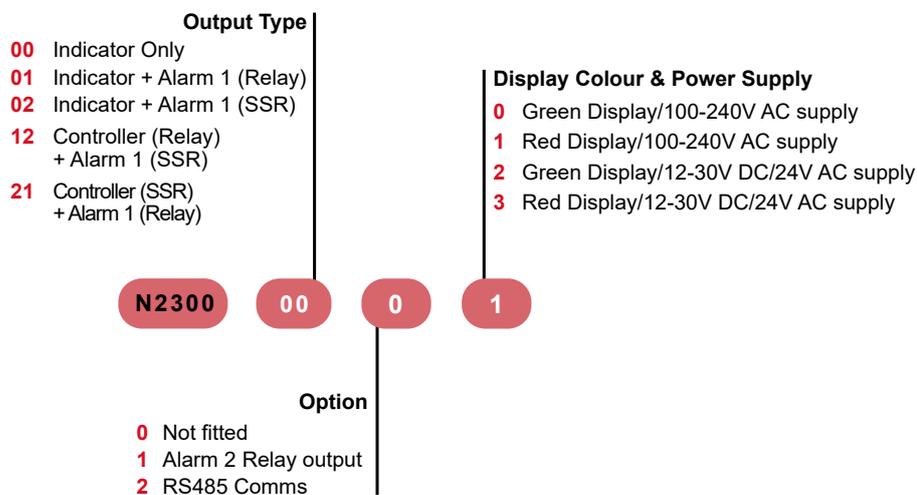
N2300 1/32 DIN Controller

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

The large, tactile rubberised 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 has up to three outputs (relay or solid state driver) for alarm.

Benefits and features

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



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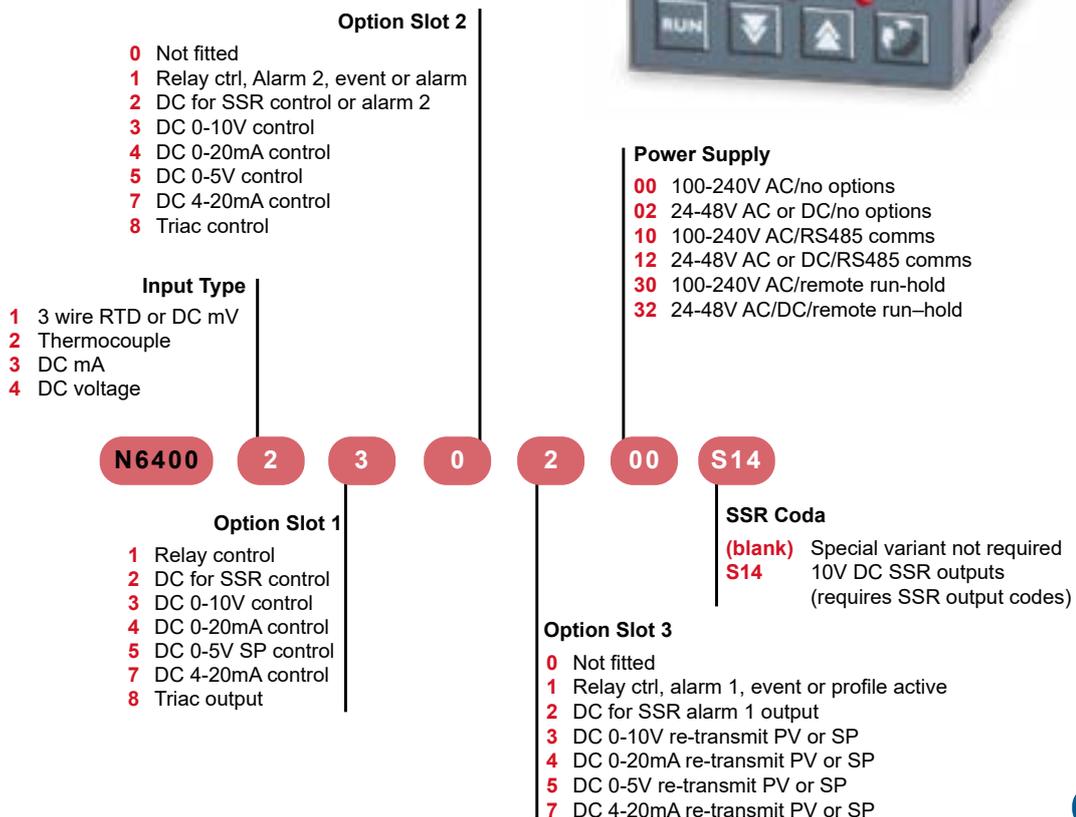
N6400 1/16 DIN Basic Profiler

The N6400 is a powerful, single loop programmable controller. It offers profiling capability with 4 programs each with up to 16 free format segments.

The N6400 is easy-to-use, benefiting from an informative display providing maximum process information at a glance. A dedicated configuration port allows set up directly from a PC.

Benefits and features

- 1/16 DIN (48 x 48 mm), 110 mm depth
- Membrane fascia
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS 485 Modbus communications
- Fast and accurate control via raPID fuzzy logic
- Profiler function 4 programs of 16 segments
- 'Auto hold' facility, remote run hold, event output, power failure recovery and guaranteed soak
- CE, UL and cUL



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KS 20-1 1/16 DIN Advanced Controller

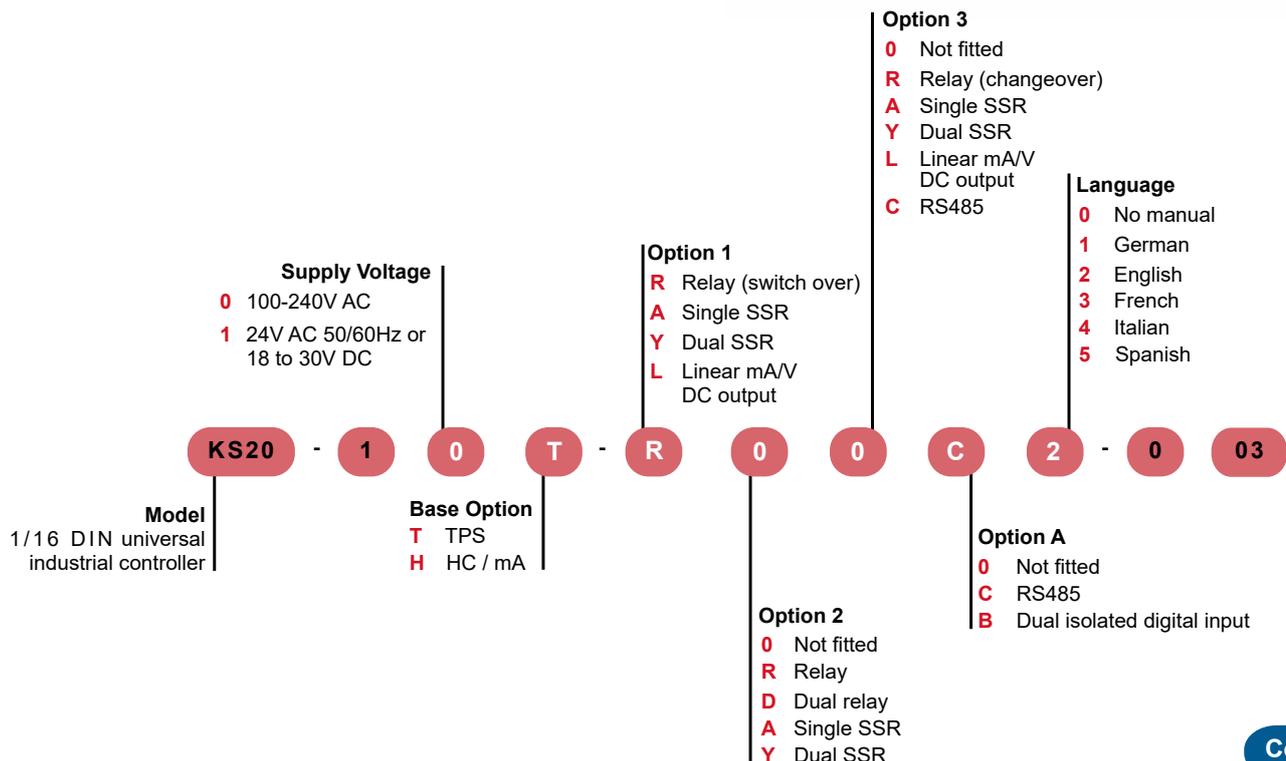
A compact, fully featured controller for demanding applications.

KS 20-1 is the only controller of its size, flexible with up to 6 outputs, 2 digital inputs, a remote setpoint input, RS485 communications and linked to best in class BlueControl[®] software.

The KS 20-1 offers many integrated features for unrivalled performance such as two PID sets to ensure reliable control over a wide setpoint range and separate PID for heat and cool strategies for optimised control and stability. Extensive flexibility is offered with 1 universal input and 1 optional process input, up to 4 digital inputs, 6 outputs and an inbuilt profiler.

Benefits and features

- 1/16 DIN (48 x 48 mm), 112 mm depth
- Display supports backlight colour change and text
- Common BluePort family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 6 outputs
- RS 485 Modbus communications
- PID heat/cool and VMD control strategies
- Optional heater current or remote setpoint
- Customer specific linearisation for sensors
- Transmitter power supply
- Profiler 16 profiles x 16 segments
- CE, UL and cUL



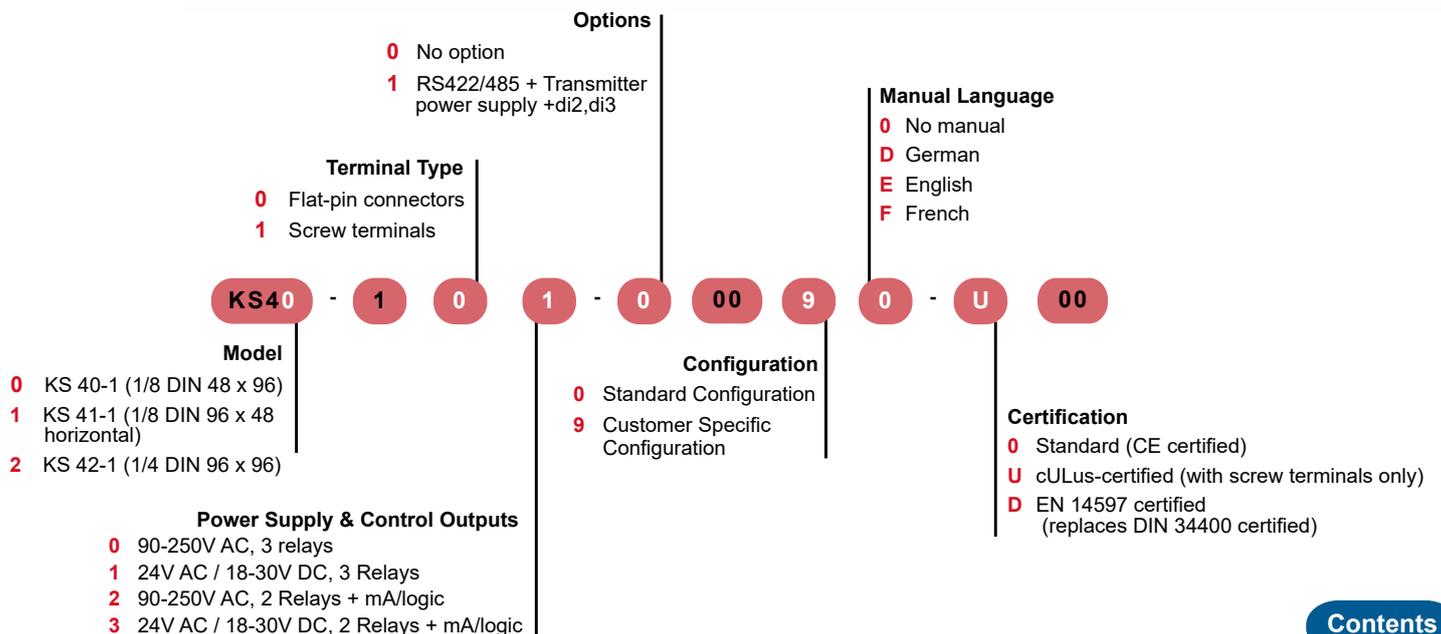
Contents

KS 40-1, KS 41-1 & KS 42-1 Universal Controller

The KS 40-1 , KS 41-1 and KS 42-1 are intended for universal and precise control tasks in all process applications. Embedded monitoring functions supervise sensors and heaters for preventative maintenance.

Benefits and 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 family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS 422/485 Modbus communications
- PID heat/cool and VMD control strategies
- Optional heater current or remote setpoint
- BluePort® Front interface and BlueControl© software
- Maintenance manager and error list
- CE, UL and cUL



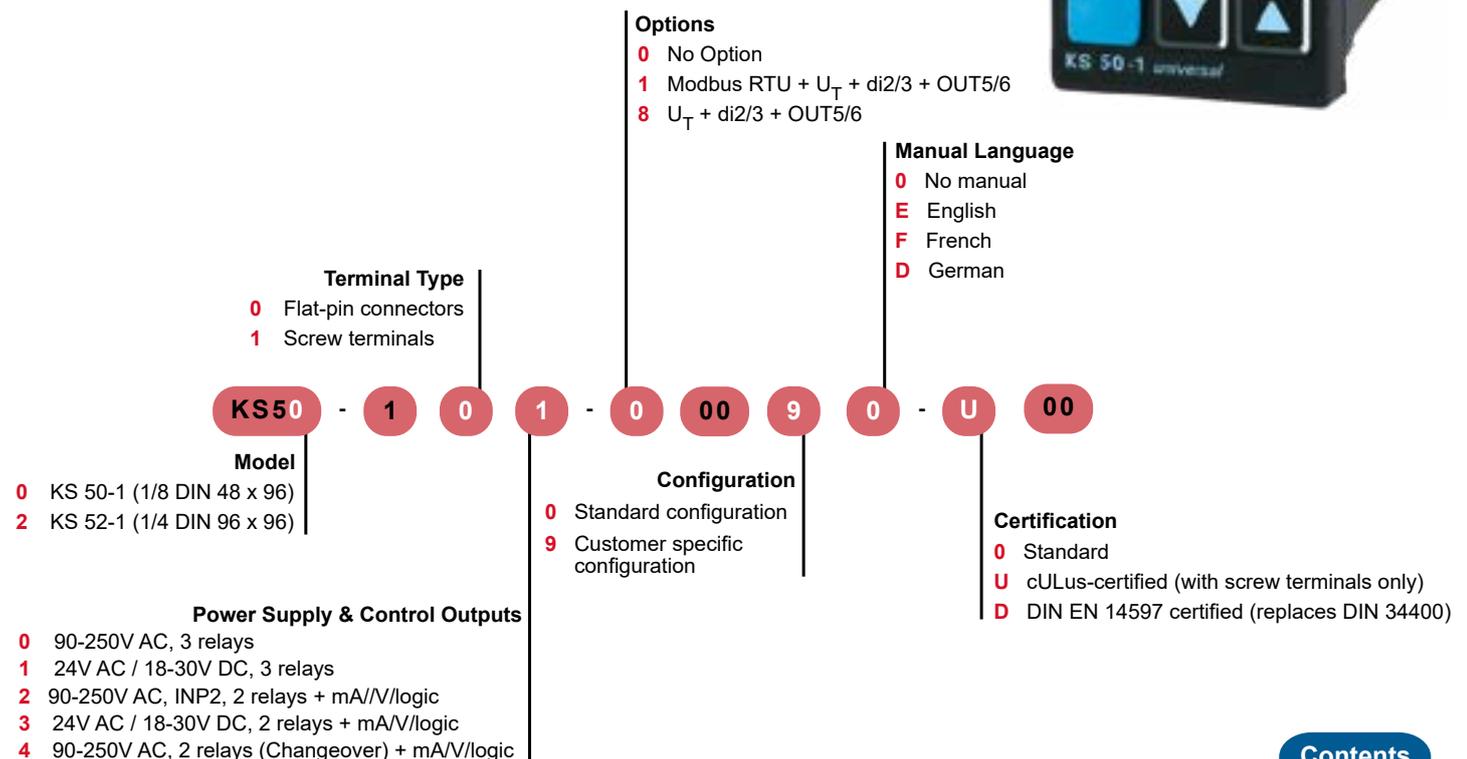
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KS 50-1 & KS 52-1 Universal Controller with Special Features

The KS50-1 and KS52-1 are optimised for use in plastics processing machinery. The KS-50-1 can be adapted to every task: from high-speed hot runners to slow mould temperature control with special functions. Extra inputs and outputs make it possible to start special functions, for example, or to monitor temperature profiles without additional PLCs. Moreover, the Modbus interface can be used to quickly integrate the KS-50-1 controller family into networks.

Benefits and features

- 1/8 DIN (96 x 48 mm) and 1/4 DIN (96 x 96 mm) 118 mm depth
- Common BluePort family styling
- Programmable function key
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Customer-specific linearisation for non-standard sensors
- Up to 3 outputs
- RS 422/485 Modbus communications
- Optional heater current or remote setpoint
- PID heat/cool control strategy with water cooling
- BluePort® Front interface and BlueControl© 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



Contents

Multi-loop Controllers

Model				
Page Number	17	18	19	21
Control Loops				
Maximum number	2	32	30	30
Format				
1/4 DIN (96 x 96mm) panel mount	●		●	
DIN Rail behind panel		●		●
Display				
Display type	Mono LCD	None	colourLCD	None
Connectors				
Screw terminal - fixed	●		●	
Screw terminal - plug In		●		
Spade terminals			○	
Plug in spring terminals				●
Inputs				
Process inputs	2	32	21	30
Thermocouple/RTD	●	●	○	○
DC linear V/mA	●	●	○	○
Digital input	9	0	22	5
Remote setpoint	○	○	○	○
Outputs				
Max. number of outputs	9	48	11	300
Relay	●	○	○	○
SSR driver	○	○	○	○
DC linear	○	○	○	○
Triac	○			
Transmitter PSU	○		○	○
Features & Functions				
Control type	PID, ON/OFF	PID, ON/OFF	Fully programmable	PID, ON/OFF
Retransmission outputs	○	○	○	○
Heater break alarm		○	○	○
Logic capability			○	
Software	BlueControl	MLC 9000+ Workshop Software	ET/KS 98-2 and SIM/ KS 98-2	Blue Control
Communication				
Modbus RTU	○	○	○	○
Profibus		○	○	○
DeviceNet		○		○
CAN Open			○	○
Modbus TCP	○	○	○	○
Ethernet IP				○
Profinet			○	○
Power Supply				
110 VAC	○		○	
230VAC	○		○	
24VAC / DC	○	DC Only	○	DC Only
48V AC / DC	○			

● = Fitted
○ = Option

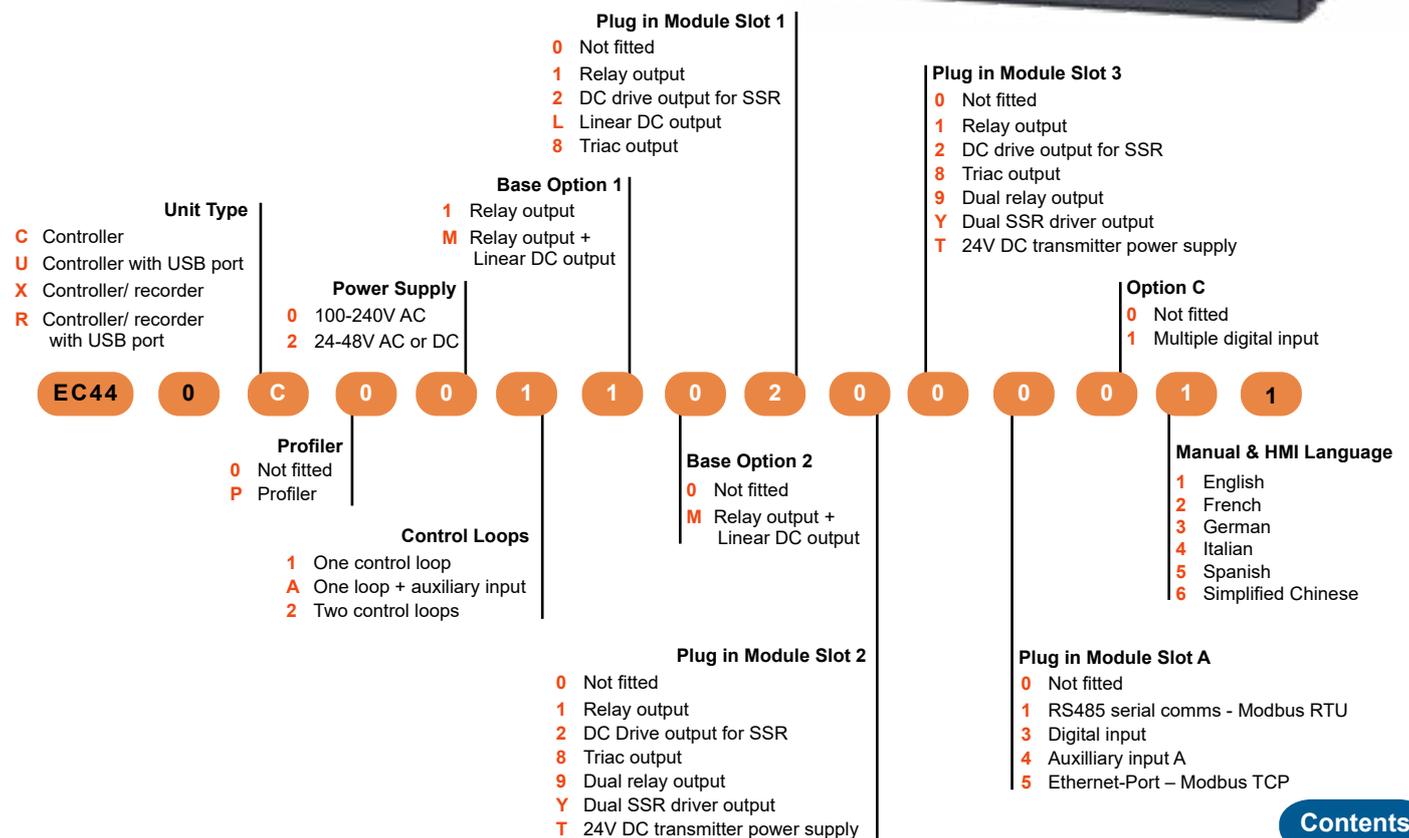
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Pro-EC44 Single/Dual Loop Advanced Controller

Pro-EC44 includes many features to ensure good control performance and easy to use. Single or dual loop 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 datalogging, trending, USB, Ethernet options add even more capability to an already powerful device.

Benefits and features

- 1/4 DIN (96 x 96 mm), 117mm depth
- Graphical / text mono LCD display (red/green backlit LCD)
- One or two universal input for thermocouple, PT100, mV, V and mA sensors
- Customer-specific linearisation for non-standard sensors
- Up to 9 outputs
- RS 485 Modbus or Ethernet Modbus 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
- Datalogger with real-time clock
- CE, UL, cUL



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MLC 9000+ Modular Controller System

The MLC 9000+ system comprises of a bus module plus 1 to 8 control modules. 1, 3 & 4 loop control modules are available allowing up to 32 control loops per system. Heater break input is available on 1 and 3 loop modules. Communication modules for connecting to a PLC, HMI, PC or SCADA include Modbus, DeviceNet, Profibus and Modbus TCP.

The MLC 9000+ features a hot swap facility, a module can be replaced and back in service quickly due to automatic reconfiguration.

Benefits and features

- Bus Module: 100 x 30 x 120mm format
Loop Module: 100 x 22 x 120mm format (HxWxD)
- Universal (TC, RTD, DC linear V, DC linear mA/mV)
- Up to 48 outputs per system
- Modbus RTU, Modbus TCP, Profibus, DeviceNet communications
- Heat/cool control strategy
- Quick to setpoint and fast reaction to process disturbances
- On-demand and auto-tuning
- Set-up 32 loops in less than 30 minutes
- CE, UL and cUL



Bus Modules

MLC 9000

BM220

- MB

- BM220 - MB** Modbus RTU
- BM230 - DN** DeviceNet
- BM240 - PB** Profibus-DP
- BM250 - MT** Modbus/TCP

Loop Modules

MLC 9000

Z1200

00

- Z1200** One universal input, two SSR/relay outputs
- Z1300** One universal input, two SSR/relay outputs and one linear output or three SSR/relay outputs
- Z1301** One universal input, one heater break input, two SSR/relay outputs and one linear output or three SSR/SP relay outputs
- Z3611** Three universal inputs, one heater break input, six relay outputs
- Z3621** Three universal inputs, one heater break input, six SSR outputs
- Z3651** Three universal inputs, one heater break input, six outputs (three SSR/three relay)
- Z4660** Four universal inputs, six outputs (four SSR/two relay)
- Z4610** Four universal inputs, six relay outputs
- Z4620** Four universal inputs, six SSR outputs

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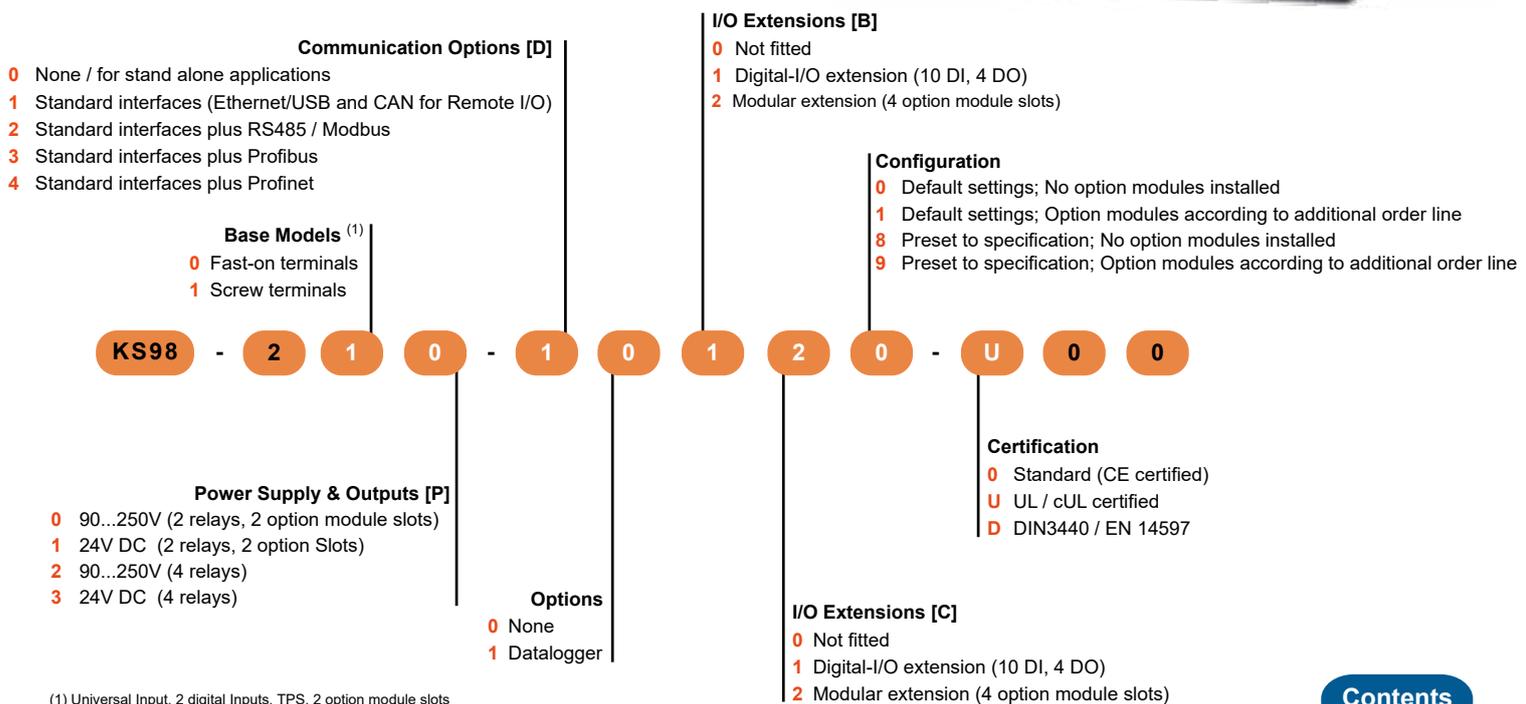
KS 98-2 Multi-function Controller

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 and features

- Modular automation system in a 1/4-DIN (96 x 96mm), 118 mm depth
- 3.5 " colour touch-screen display
- Universal Input (TC, RTD, DC linear mA/mV)
- Expandable with modular inputs and outputs
- Up to 20 additional process inputs supported
- 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



Contents

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 optimised 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/updated



KS 98-2 option modules

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



Modules and Positions

0 0 0 0 0 0 0 0 0 0	Not fitted
- - U U U U U U U U U U	Universal input
- - R R R R R R R R R R	Dual Pt100/1000, Ni100/1000, resistance
- - T T T T T T T T T T	Dual Thermocouple, mV, 0/4...20mA
- - V V V V V V V V V V	Dual -50...1500mV (eg. Zirconia probe), 0...10V
- - P P P P P P P P P P	0/4...20mA Input with transmitter power supply
A A A A A A A A A A	Dual DC drive output for SSR
L L L L L L L L L L	Dual linear out (mA/V DC)
B B B B B B B B B B	Dual bipolar Linear Out (-10V...10V)
- - D D D D D D D D D D	Dual digital I/O

Separate module orders



Available Modules

- U** Universal input
- R** Dual Pt100/1000, Ni100/1000, resistance
- T** Dual Thermocouple, mV, 0/4...20mA
- V** Dual -50...1500mV (eg. Zirconia probe), 0...10V
- P** 0/4...20mA Input with transmitter power supply
- A** Dual DC drive output for SSR
- L** Dual linear out (mA/V DC)
- B** Dual bipolar Linear Out (-10V...10V)
- D** Dual digital I/O

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KS Vario 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 and 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 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

Buscoupler

KSVC - 1 0 1 - 0 0 1 1 1 - U 00

Controller

Protocol
 0 For Ethernet Mod/TCP, Ethernet IP, Profibus, Modbus, Profinet
 2 For CANopen

Option

- 1 Profibus-DP/V1
- 2 CANopen
- 3 Modbus TCP
- 5 Modbus RTU
- 7 Profinet
- 8 Ethernet IP

KSVC - 1 0 4 - 0 0 33 1 - U 00

Option

- 33 KS VARIO T4/RTD: Vario temperature controller, 4-channel, spring-clamp connection, labeling field, 4 inputs, RTD (resistance element), 3 wire connection + screening, 6 outputs 24 V DC, 1 heating current input, I/O extensible
- 43 KS VARIO T4/UTH: Vario temperature controller, 4-channel, spring-clamp connection, labeling field, 4 inputs, TC (thermocouples), 2 wire connection + screening, 8 outputs 24 V DC, 1 heating current input, I/O extensible
- 34 KS VARIO T6/RTD: Vario temperature controller, up to 30-channel, spring-clamp connection, labeling field, 6 inputs, RTD (resistance element), 3 wire connection + screening, 6 outputs 24 V DC, 1 heating current input, I/O extensible up to 30 channels
- 44 KS VARIO T8/UTH: Vario temperature controller, up to 30-channel, spring-clamp connection, labeling field, 8 inputs, TC (thermocouples), 2 wire connection + screening, 8 outputs 24 V DC, 1 heating current input, I/O extensible up to 30 channels

I/O Extension

KSVC - 1 0 x - 0 x x x 1

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

Contents

DIN Rail Mounted Devices

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	○	○	○	○	○
Spring terminal - plug-in	○	○	○	○	○
Inputs					
Thermocouple/RTD	●	●	●		● ○
DC linear V/mA	●	●	●		● ○
Strain gauge				●	
Digital inputs	●				○
Remote setpoint		●			
Outputs					
Max. number of outputs	3	3	3	2	8 per module
Relay	○	○	●		○
SSR driver	○	○	●		○
DC linear	○	○			○
Triac					
Transmitter PSU		○		●	
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	○	○	○	○	
Heater break alarm					
Software	MAXVU Configurator	BlueControl	BlueControl	BlueControl	BlueControl
Communication					
Modbus RTU	○	○	○	○	
Buscoupler module support (for major Fieldbus)		○	○	○	○
Power Supply					
110 VAC	○	○	○	○	
230VAC	○	○	○	○	
24VAC / DC	○	○	○	○	●

● = Fitted
○ = Option

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MAXVU Rail Behind Panel Controller

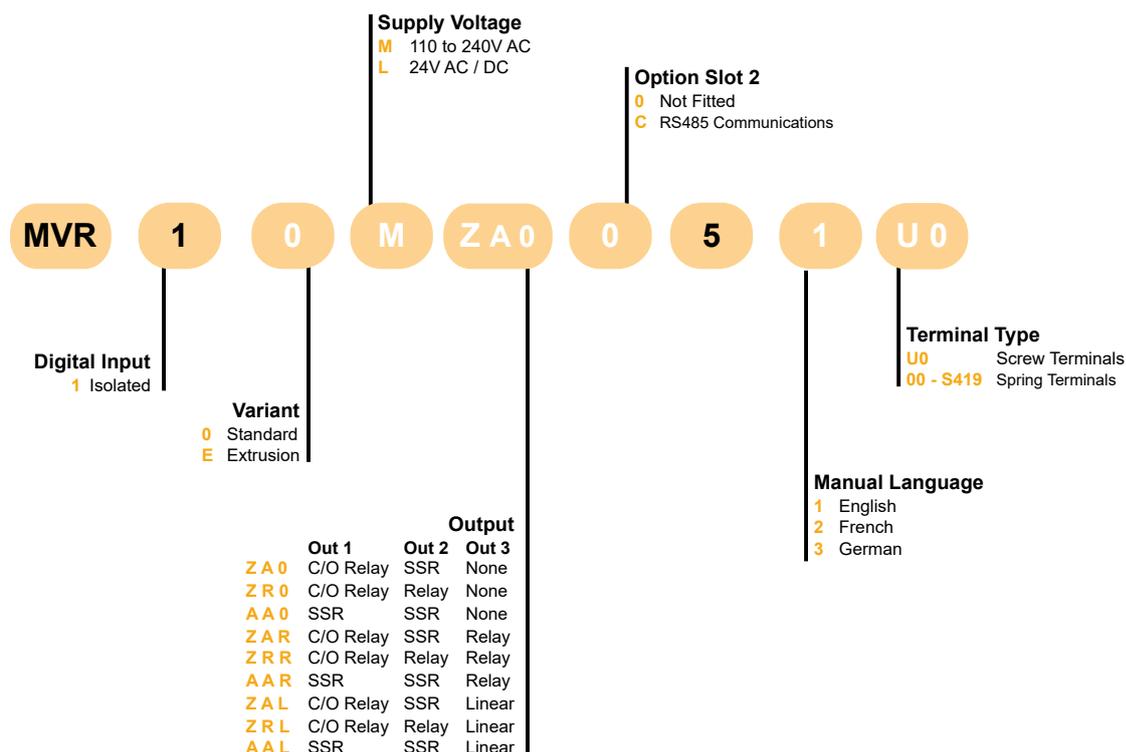
MAXVU Rail is a compact DIN-rail mount temperature controller/transmitter and limiter range for general industrial and scientific equipment requiring a reduced back panel footprint, centralised control or minimal front panel components.

Benefits and 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 RTU communications
- Heat/cool control strategy
- Quick setup menu
- Front configuration port
- CE, UL & cUL



MAXVU Rail Controller / Transmitter



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Rail Line Process Instrumentation System

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

Benefits and features

- DIN rail mounted, 96 x 22.5 x 117.5mm (HxWxD)
- Field bus coupler for Profibus, CAN, Modbus TCP, Modbus 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
- CANopen
- Modbus RTU
- And additional power supply for large systems



Connector

- 0 Without terminal blocks
- 1 Screw terminal
- 2 Spring-clamp terminal

Certification

- 0 None
- U UL/cUL certified

Option

- 1 CANopen
- 2 PROFIBUS DP/DPV1
- 3 MODBUS RTU
- 4 Ethernet MODBUS/TCP
- 5 Profinet IO
- 9 Power supply module 24V

RL40 - 1 1 2 - 00000 - U 00

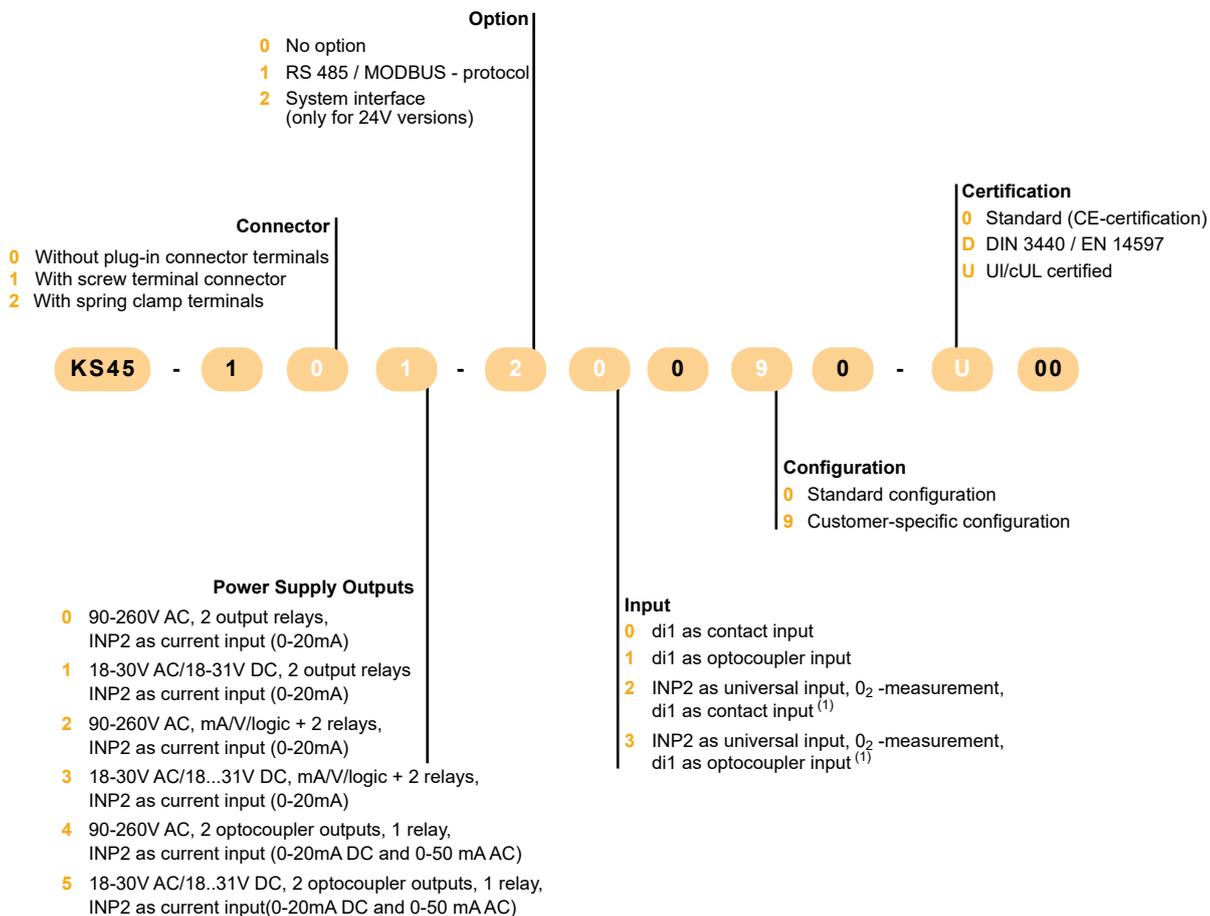
[Contents](#)

KS 45 Rail Line Universal Controller

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

Benefits and 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 linearisation for non-standard sensors
- CE, UL, cUL and Type tested to EN 14597



(1) Not on versions with optocoupler outputs (KS45-1x4... and KS45-1x5...)

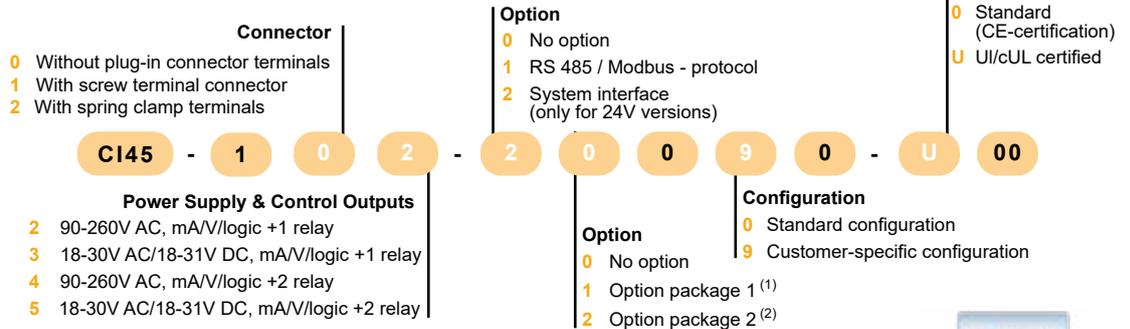
CI 45 & SG 45 Rail Line Transmitter

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

CI 45 Universal Transmitter

Benefits and features

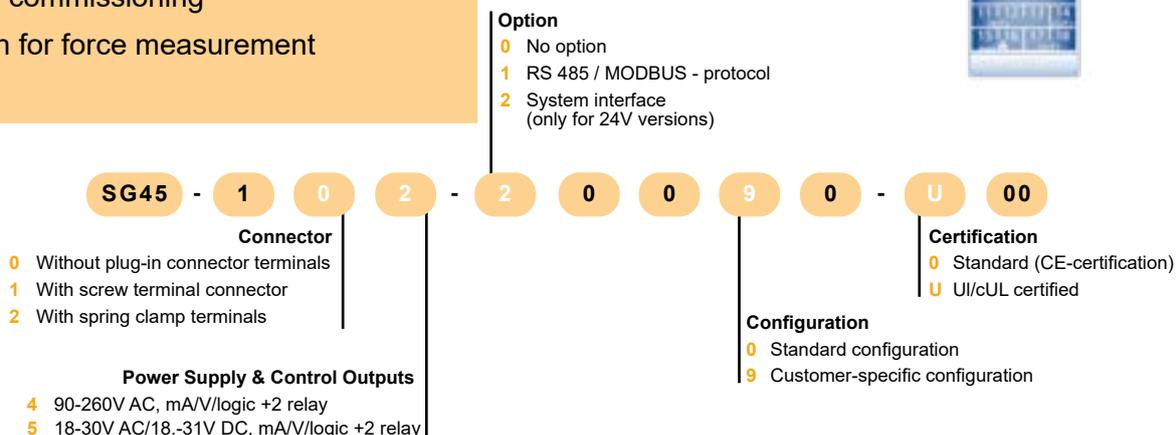
- DIN-Rail mounted 99mm x 22.5mm x 117.5mm (HxWxD),
- LCD configuration and status display
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Optional second universal input
- 3 outputs including one universal output
- Counter/frequency input, frequency output
- RS485 Modbus RTU or system fieldbus communications
- User input calibration
- Slave pointer (min/max indicator)
- Fast sampling rate
- Customer-specific linearisation for non-standard sensors
- CE, UL and cUL



SG 45 Strain Gauge Transmitter

Benefits and features

- Special-purpose transmitter for strain gauge input
- Mechanics, user interface and communications as KS45
- 24 bit measuring bridge input
- 2 relay outputs
- Voltage supply for the strain gauge bridge
- Simple scaling during commissioning
- 4 or 6-wire connection for force measurement
- CE, UL and cUL



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

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.

Rail Line I/O expansion modules

- Din-Rail mounted 99mm x 22.5mm x 117.5mm (HxWxD),
- LED indicators for status
- Digital and analogue 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 analogue signals
- Reinforced galvanic isolation
- Linearisation and measured value correction
- CE, UL and cUL



Analogue Inputs

- 4220 **RL 422-0** Analogue inputs, 4 x I / U / TPS / potentiometer
- 4221 **RL 422-1** Analogue inputs 2 x I/U galv. isolated
- 4230 **RL 423-0** RTD 4 x Pt100 galvanic isolated
- 4231 **RL 423-1** RTD 4 x Pt1000 galvanic isolated
- 4232 **RL 423-2** RTD 4 x Pt100/Pt1000
- 4233 **RL 423-3** RTD 2 x Pt100 galvanic isolated
- 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 ($\pm U / \pm I$, 16 Bit) differential inputs; 2 x AO ($\pm U / \pm I$, 12 Bit)

Digital Inputs

- 4420 **RL 442-0** Digital inputs 2 x 4 24 V DC (npn /contact, potential-free)
- 4421 **RL 442-1** Digital inputs 2 x 4 24 V DC (npn /contact, potential-free)
- 4422 **RL 442-2** Digital inputs 8 x 1 24 V DC (individual supply)
- 4430 **RL 443-0** 4 x Digital inputs (115/230V AC)

Connector

- 0 Without terminal blocks
- 1 Screw terminal
- 2 Spring-clamp terminal

Certification

- 0 Standard (CE-certification)
- U UI/cUL certified

RL40 - **1** **0** **0** - **0000** **0** - **U** **00**

Analog Outputs

- 4310 **RL 431-0** 4 x I / U ($\pm 10V / \pm 20mA$, 12 Bit)
- 4610 **RL 461-0** Combi module, 2 x AI ($\pm U / \pm I$, 16 Bit) differential inputs; 2 x AO ($\pm U / \pm I$, 12 Bit)

Digital Output

- 4510 **RL 451-0** Digital outputs 2 x 4 24 V DC/2A
- 4511 **RL 451-1** Digital outputs 2 x 4 24 V DC/2A (free wheeling diode)
- 4520 **RL 452-0** Relay outputs 4 x 230 V DC/5A

Panel Mounted Indicators

Model				
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)	○			
1/8 DIN horizontal (48 x 96mm)	○	●		
Depth	110mm / 100mm	118mm	71mm	71mm
Display				
Display type	4 digit LED	5 digit LED	4 digit LED	4 digit LED
Connectors				
Screw terminal	●	●	●	●
Spade terminals		●		
Inputs				
Thermocouple/RTD	●	○		
DC linear V/mA	●	○		●
NTC			●	
Outputs				
Max. number of outputs	3	3	0	2
Relay	○	○		○
SSR driver	○			
DC linear	○	○		
Triac	○			
Transmitter PSU	○	○		●
Features & Functions				
Alarm	●	●	Visual display only	●
Retransmission output	○	○		
RS485 communications	○	○		○
Software	Plus Series Configurator	BlueControl		
Power Supply				
110 VAC	○	○	○	○
230VAC	○	○	○	○
12VAC / DC			○	○
24VAC / DC	○	○	○	○
48V AC / DC	○			

● = Fitted
○ = Option

[Contents](#)

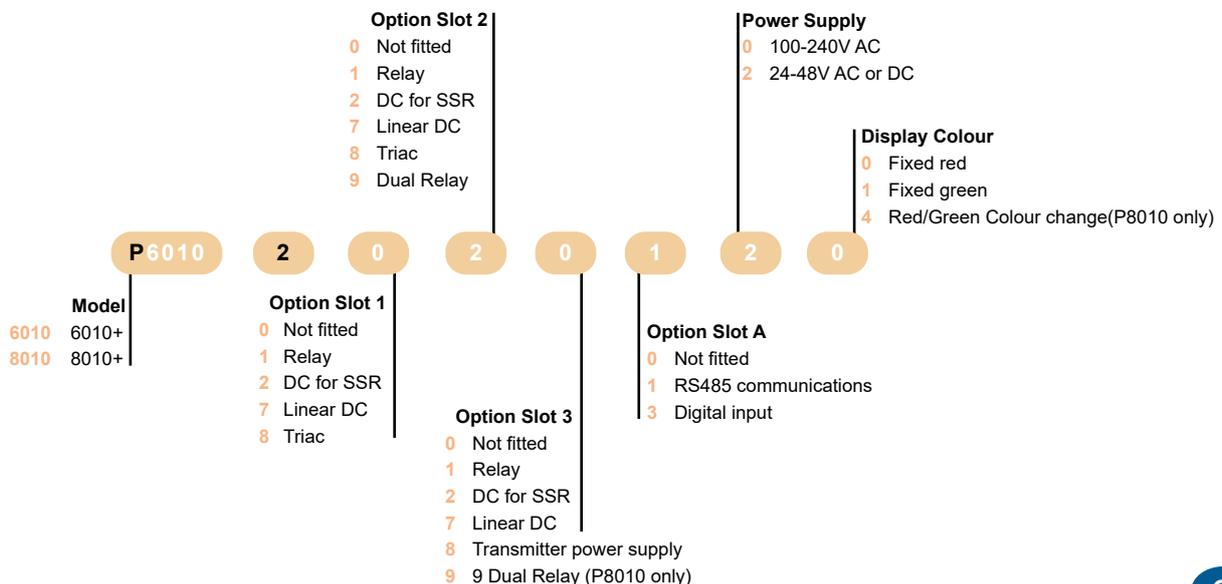
6010+ & 8010+ Process Indicators

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 and 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 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



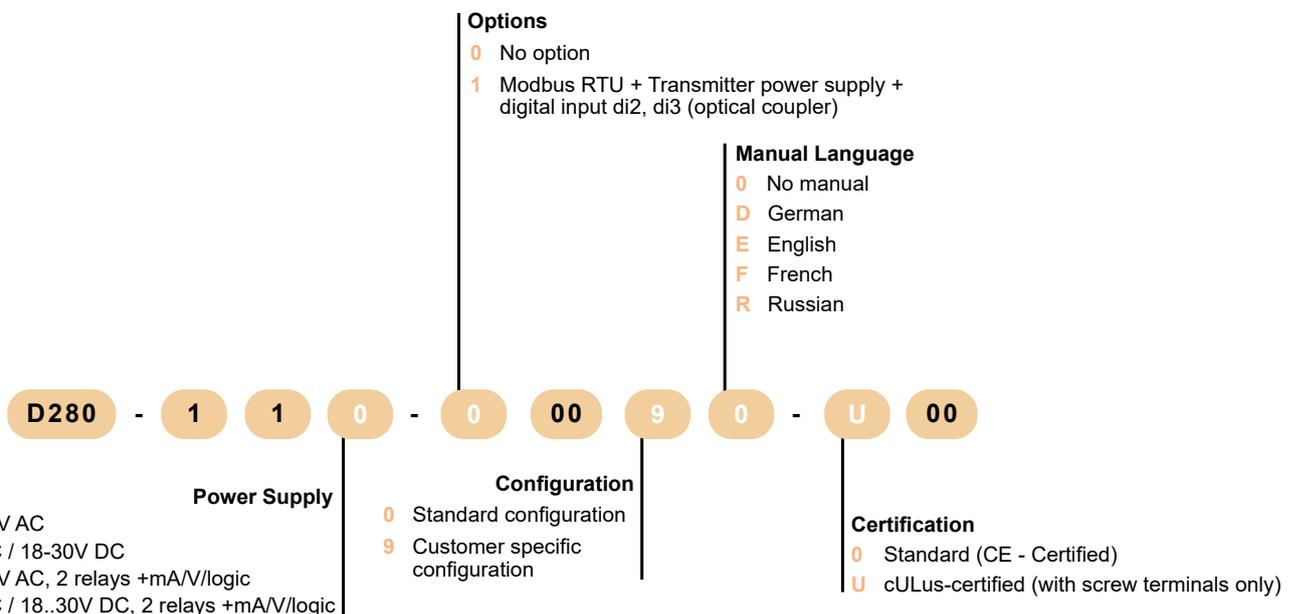
Contents

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 linearisation 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.

Benefits and features

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



[Contents](#)

EI2410 & EI2041 Basic Indicators

Compact digital indicators for temperature and process measurement.

EI2410 offers temperature indication within a range of -60 to 150°C using a NTC sensor.

EI2041 rescales linear DC signals to display process data in the required units.

EI2410

Benefits and 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



EI24041

Benefits and 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 RTU communications
- Alarm function
- TPS output
- CE



EI2410

Voltage

- 230 230V AC
- 024 24V AC/DC
- 012 12V AC/DC

EI2410

230

F

Units

- (blank) Centigrade
- F Fahrenheit

EI2041

Voltage

- 230 230V AC
- 024 24V AC
- 012 12V AC
- SM 9-30V DC / 7-24V AC

EI2041

230

2R

12

RS

Relay

- (blank) Not fitted
- 2R 8A output

Sensor Supply Output

- (blank) Not fitted
- 12 12V DC 50mA
- 08 08V DC 50mA
- 05 05V DC 50mA

Modbus Selection

- (blank) Not fitted
- RS Modbus Communications

Contents

Limit and Monitor Devices

Model	MAXVU Rail Limiter	6700+, 8700+ & 4700+	TB 45	TB 40-1	STB 50	STB 55
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		●		○		●
Screw terminal - plug-in	●		○			
Faston terminals				○		
Spring clamp terminals			○		●	
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	○	○				
DC linear	○	○	●	●	●	●
Triac		○				
Transmitter PSU		○				
Certification						
FM	●	●				
EN14597			●	●	●	●
SIL2					●	●
Features & Functions						
RS485 communications	○	○	○	○		
Software	MAXVU Configurator	Plus Series Configurator	BlueControl	BlueControl		
Power Supply						
110 VAC	○	○	○	○	○	○
230VAC	○	○	○	○	○	○
24VAC / DC	○	○	○	○	○	○

● = Fitted
○ = Option

Contents

MAXVU Rail Behind Panel Temperature Limiter

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

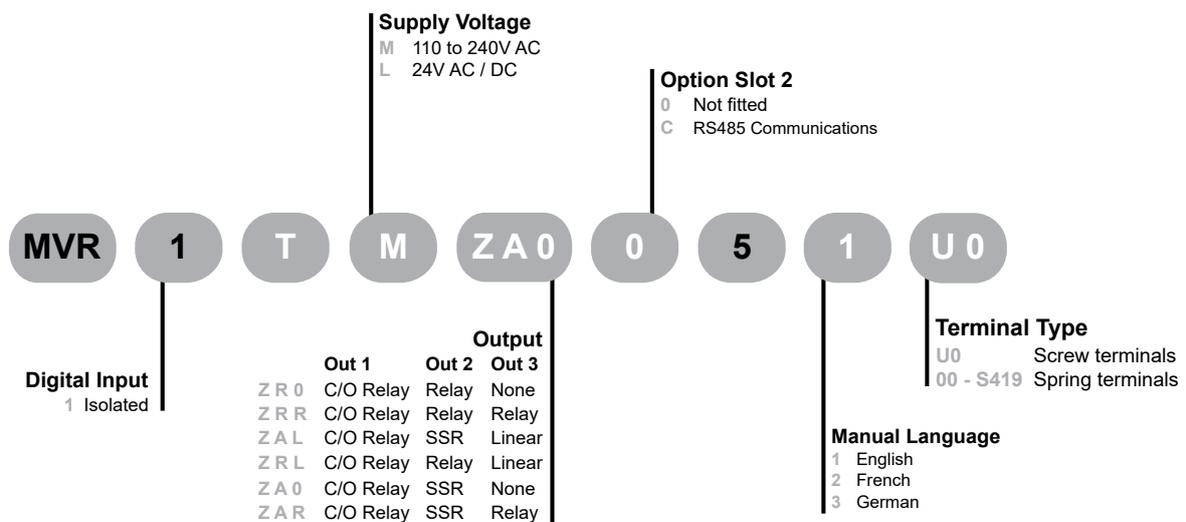
Benefits and features

- 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 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

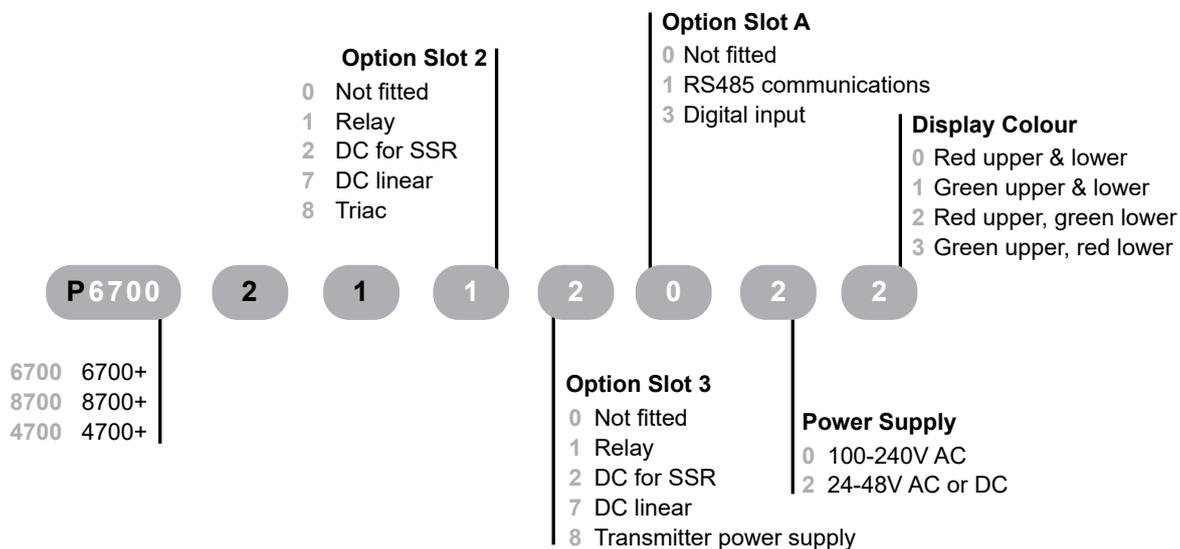
The + series of limiter are used in a broad range of temperature control applications where independent protection is required.

The devices have commonality with the + series controllers in both styling and operation so can both easily be integrated within the same equipment.

Benefits and 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
- Up to 3 outputs
- Wide range of options available
- RS485 Modbus RTU communications
- Valve Motor Drive control strategy
- Programming port for fast configuration using FTP software
- Ideal for general industrial applications
- CE, UL, cUL and CSA

Limit Device Approval: FM



[Contents](#)

TB 40-1 Panel Mount Temperature Limiter

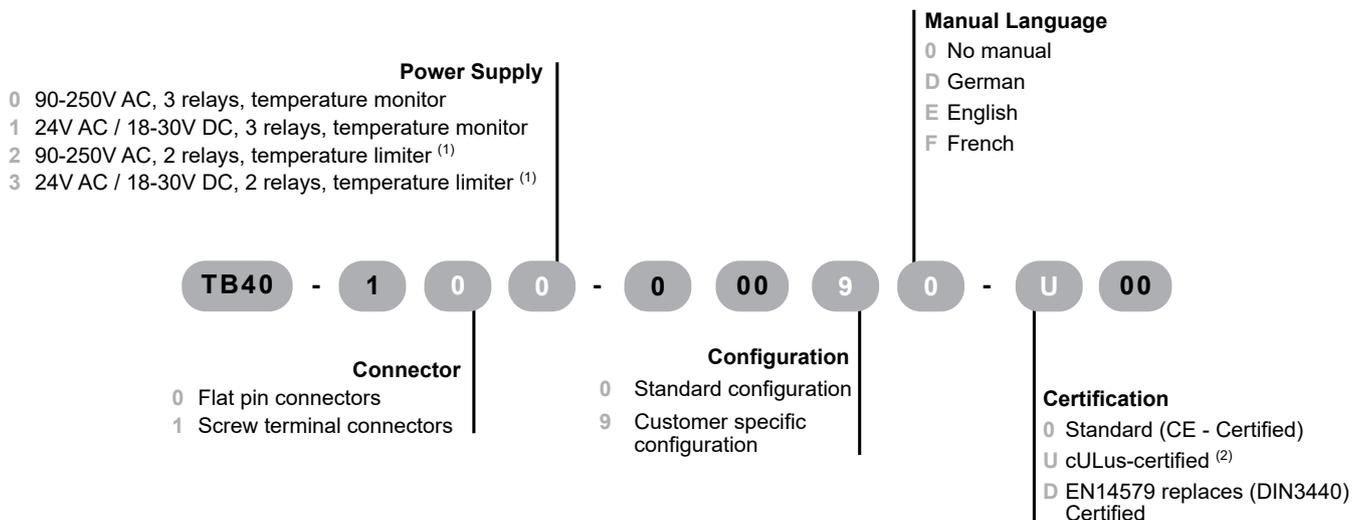
The TB40-1 limiter is used in a broad range of temperature control applications including furnaces and steam equipment where independent protection is required.

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

Benefits and 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 family styling
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 3 outputs
- RS 422/485 Modbus communications
- BluePort® Front interface and BlueControl© 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)

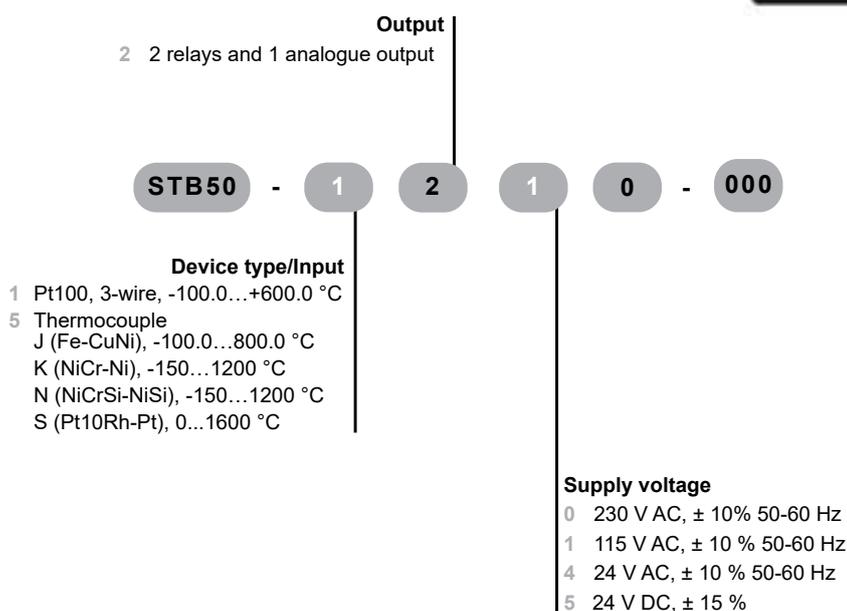
STB50 Panel Mount Safety Limiter

The STB50 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 and features

- 1/8 DIN (96 x 48 mm), 119 mm depth
- Graphic-LCD-display, with white LCD-backlight
- Inputs RTD Pt100 or double-thermocouple
- 2 alarm outputs and retransmission output
- Useable 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**



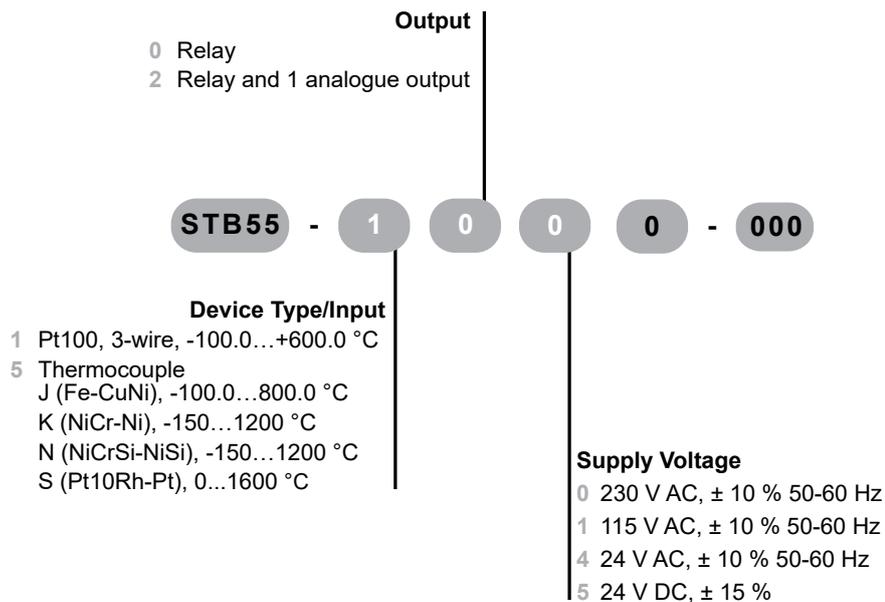
STB55 Behind Panel Safety Temperature Limiter

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 and features

- Rail Mounted (100 x 50 mm), 110 mm depth
- Graphic-LCD-display, with white LCD-backlight
- Inputs RTD Pt100 or double-thermocouple
- 2 alarm outputs and retransmission output
- Useable 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

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

- = Fitted
- = Option

[Contents](#)

The CAL thermostat range is a complete family of small format devices for basic heating or cooling applications.

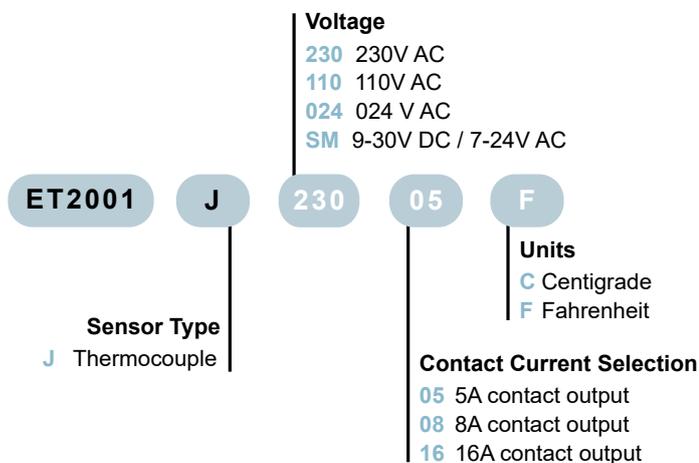
The ET thermostats are cost-effective thermostat devices for both industrial heating or cooling applications, two output version also includes alarm function.

Benefits and features

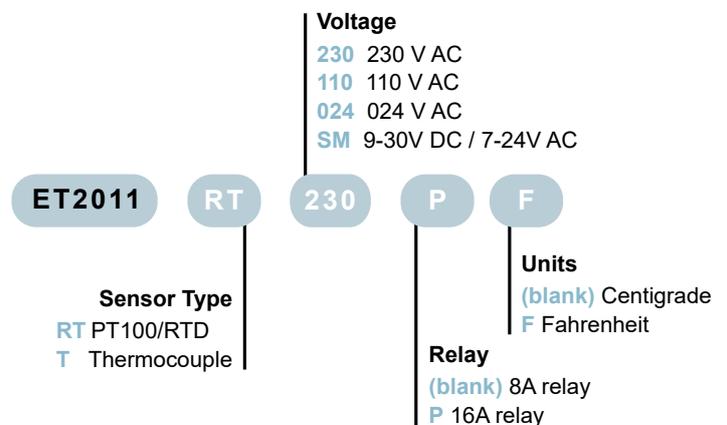
- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- J Thermocouple, PT100 (ET2011 only)
- Up to 2 outputs
- High current relay output available
- Heating or cooling control strategy
- On/Off or PID (ET2011) Control
- CE



Single output - Relay



Two output - Relay & SSR Drive



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 and 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
- CE



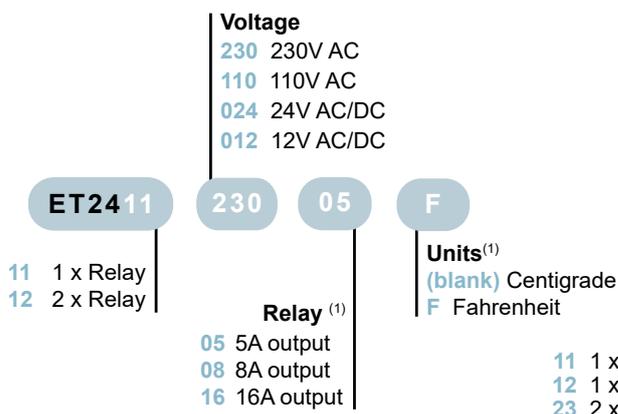
EDT2411, EDT2412 & EDT2423 Digital Thermostats

Benefits and features

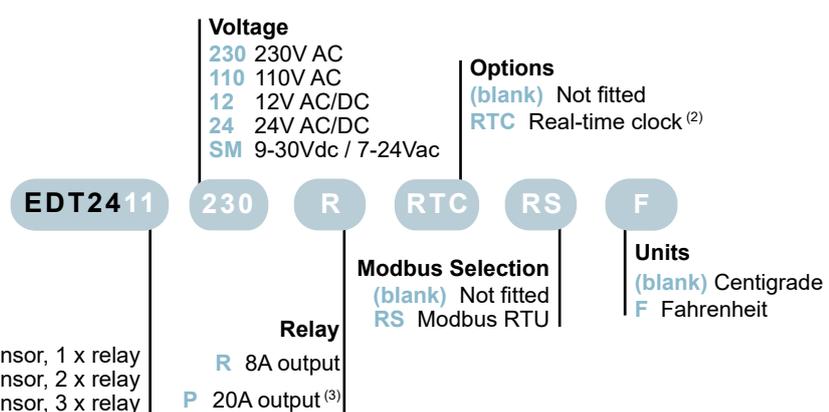
- 35 x 77 mm format, 71mm depth (29 x 71 mm cutout)
- Up to Two NTC Sensor input -60 to 150°C
- Up to 3 outputs
- High current relay output available
- RS485 Modbus communications
- Compressor, defrost and fan control
- Real-time clock option
- CAL-key configuration
- CE



ET2411 & ET2412



EDT2411, EDT2412 & EDT2423



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

In the same style as the thermostat range, a digital timer is available for associated monitoring and time-based 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.

Benefits and features

- 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
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



Voltage

- 230 230V AC
- 110 110V AC
- 24 24V AC/DC
- 12 12V AC/DC
- SM 9-30V DC / 7-24V AC

ETM2432

230

Power Controllers

Model

Relay S



Relay C



	1-phase	2-phase	3-phase	1-phase	2-phase	3-phase
Page Number	44	44	44	45	45	45
Load						
Max voltage 480V	●	●	●	●	●	●
Max voltage 600V	●	●	●	●	●	●
Max voltage 690V	● >= 60A					
Single phase	●			●		
3 phase load star no neutral or delta		●	●		●	●
3 phase load star with neutral			●			●
3 phase load open delta			●			●
Input Type						
SSR 4:30VDC	●	●	●	●	●	●
4:20 mA	○	○	○	●	●	●
0:10 Vdc	○	○	○	●	●	●
10KΩ potentiometer				●	●	●
Communication command				○	○	○
Firing						
Zero crossing / with softstart	● / -	● / -	● / -	● / ●	● / -	● / ●
Single cycle / with softstart				● / ●		● / ●
Burst firing / with softstart	○ (1) / -	○ (1) / -	○ (1) / -	● / ●	● / -	● / ●
Half cycle / with softstart				● / ●		● / ●
Phase angle / with softstart				● / ●		● / ●
Delayed triggering / with softstart				● / ●		● / -
Control Mode						
Voltage				●	●	●
Square voltage				●	●	●
Current				●	●	●
Voltage X current (power)				●	●	●
Voltage to power transfer				●	●	●
Option						
Internal current limit				○		○
Heater break + thyristor short circuit	○	○	○	○	○	○
Fuse & fuse holder	○ ≤ 40A	○ ≤ 40A	○ ≤ 40A	● ≤ 40A	● ≤ 40A	● ≤ 40A
Integrated fixed fuses	● > 40A					
Datalogging function				○	○	○
Energy totalizer				○	○	○
Comm.						
OLED-display with clear text and key pad				●	●	●
PC configuration software + Mini-USB				●	●	●
Modbus RTU				○	○	○
Modbus RTU + Profibus DP				○	○	○
Modbus RTU + Profinet				○	○	○
Modbus RTU + Modbus TCP				○	○	○
Approvals						
CE EMC	●	●	●	●	●	●
cUL	○ not with 690 V					
Current						
30	● not with 690 V					
35	● not with 690 V					
40	● not with 690 V					
60	●	●	●	● not with 690 V	● not with 690 V	● not with 690 V
75		● only with cUL	● only with cUL	● not with 690 V	● not with 690 V	● not with 690 V
90	●	● not with cUL	● not with cUL	● not with 690 V	● only with cUL	● only with cUL
120	●	●	●	● not with 690 V	● not with cUL	● not with cUL
150	●	●	●	● not with 690 V	●	●
180	●	●	●	● not with 690 V	●	●
210	●	●	●	● not with 690 V	●	●
300	●	●	●	● not with 690 V	●	●
350	●	●	●	●	●	●
400	●	●	●	●	●	●
450	●	●	●	●	●	●
500	●	●	●	●	●	●
600	●	●	●	●	●	●
700	●	●	●	●	●	● not with cUL
850	● not with cUL					

● = Fitted
○ = Option

(1) 4, 8, 16 Cycles, only with analogue input

Contents

Relay S - 1PH, 2PH & 3PH Basic Power Controllers

Relay-S thyristor power controllers can be used in the variants on / off control (digital switching input) and pulse packet operation (analogue input). The power controllers are designed for minimum space requirements and low wiring costs.

Benefits and features

- Compact design, see data sheet for dimensions
- Input signal: SSR, analogue
- Load 30 to 800A, up to 690V
- Resistive loads and infrared lamps with medium and long waveform
- Zero crossing or burst firing mode
- Heater break alarm
- Internal fuses with easy access
- CE, UL optional



Max. Load Current Rating

030	30A
035	35A
040	40A
060	60A
075	75A
090	90A
120	120A
150	150A
180	180A
210	210A
300	300A
400	400A
450	450A
500	500A
600	600A
700	700A
800	800A

Aux. Voltage Supply

0	ac-dc up to 210A
1	90:135V > 210A ⁽¹⁾
2	180:265V > 210A ⁽¹⁾
3	238:330V > 210A ⁽¹⁾
5	342:528V > 210A ⁽¹⁾
6	40:759V (600V) > 210A ⁽¹⁾
7	540:759V (690V) > 210A ⁽¹⁾

Fan Voltage

0	For 1 phase: No fan < 90A For 2 phase and 3 phase: No fan < 60A
1	For 1 phase: Fan 110V (≥ 90A) For 2 phase and 3 phase: Fan 110V (≥ 60A)
2	For 1 phase: Fan 220V (≥ 90A) Std. Version For 2 phase and 3 phase: Fan 220V (≥ 60A) Std. version

Manual

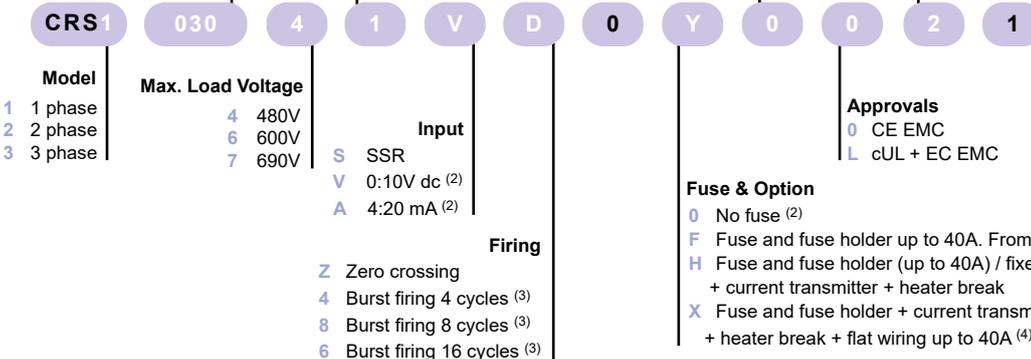
0	No manual
1	Italian
2	English
3	German
4	French

Approvals

0	CE EMC
L	cUL + EC EMC

Fuse & Option

0	No fuse ⁽²⁾
F	Fuse and fuse holder up to 40A. From 60A fixed fuses
H	Fuse and fuse holder (up to 40A) / fixed fuses (from 60A) + current transmitter + heater break
X	Fuse and fuse holder + current transmitter + heater break + flat wiring up to 40A ⁽⁴⁾



(1) Load voltage must be included in Selected Voltage Auxiliary Range for units > 210A

(2) With analogue input (0:10Vdc, 4:20mA) it is necessary to have the fuse (1 phase also the fuse holder on units <= 40 A)

(3) On at 50% power demand; Available only with analogue input

(4) Available up to 40A. With flat wiring it is necessary to use TU-RS1 (2;3) terminal unit

Relay C - 1PH, 2PH & 3PH Advanced Power Controllers

Advanced load management for 1, 2 or 3 phases up to 800A. These devices include enhanced capability for a wide range of firing modes, improved performance, protection, monitoring and connectivity. The range supports connection to a user friendly commissioning tool for maximum visibility.

Benefits and feature

- Compact design, see data sheet for dimensions
- OLED text display
- Input signal: SSR, analogue
- Load 30 to 800A, up to 690V
- Resistive, inductive loads and infrared lamps with short to long waveform
- RS485 Modbus, Profibus, Profinet communications
- USB configuration port
- Zero crossing, phase angle or burst firing mode
- Load monitoring and short-circuit alarm
- Integrated data logging, energy totalizer
- Internal fuses with easy access
- CE, UL optional



[Contents](#)

Ordering code

Current Rating

030	30A ⁽¹⁾
035	35A ⁽¹⁾
040	40A ⁽¹⁾
060	60A ⁽¹⁾
075	75A ⁽¹⁾
090	90A
120	120A
150	150A
180	180A
210	210A
300	300A
400	400A
450	450A ⁽¹⁾
500	500A
600	600A
700	700A
800	800A ⁽¹⁾

Aux. Voltage Supply

- 1 90 to 135 VAC (100/120 VAC)
- 2 180 to 265 VAC (200/208/230/240 VAC)
- 3 238 to 330 VAC (277 VAC)
- 5 342 to 528 VAC (380/415/480 VAC)
- 6 540 to 759 VAC (600 VAC)
- 7 540 to 759 VAC (690 VAC)

Control Mode

- 0 Open loop
- U Voltage
- Q Voltage square U^2
- I Current
- A Current square I^2
- W Power

Fan Voltage

- 0 No fan - for 1phase and 2PH < 90A
No fan - for 3 phase < 120A
- 1 Fan 110V - for 1 phase and 2PH < 90A
Fan 110V - for 3 phase \geq 120A
- 2 Fan 220V - for 1 phase and 2PH < 90A std. version
Fan 220V - for 3 phase \geq 120A std. version

Load Type

- 0 Normal resistance ⁽¹⁾
- 1 IRSW infrared short wave ⁽¹⁾
- 2 MoSi2 heaters ⁽¹⁾
- 3 SiC heaters ⁽¹⁾
- 4 Transformer coupled with normal resistance ⁽¹⁾
- 5 Transformer coupled with MoSi2 heaters ⁽¹⁾
- 6 Transformer coupled with SiC heaters ⁽¹⁾
- 7 Transformer coupled with UV lamp ⁽¹⁾

CRS 1 **090** **4** **4** **V** **D** **0** **Y** **0** **0** **2** **1**

Model

- 1 1 phase
- 2 2 phase
- 3 3 phase

Max Voltage

- 4 480V
- 6 600V
- 7 690V

Input

- S SSR
- B 0:20 mA
- A 4:20mA
- V 0:20 mA
- K 10k Ω Poti

Firing

- C Single cycle no soft start ⁽¹⁾
- S Single cycle linear soft start ⁽¹⁾
- H Half cycle no soft start ⁽¹⁾
- L Half cycle linear soft start ⁽¹⁾
- I Half cycle soft start for infrared lamp ⁽¹⁾
- B Burst firing no soft start
- J Burst firing linear soft start ⁽¹⁾
- P Phase angle no soft start ⁽¹⁾
- E Phase angle soft start ⁽¹⁾
- D Delayed triggering no soft start ⁽¹⁾
- T Delayed triggering linear soft start ⁽¹⁾
- Z Zero crossing no soft start
- R Zero crossing linear soft start ⁽¹⁾

Approvals

- 0 CE EMC
- L cUL + EC EMC

Communication and Retransmission

- 0 Nr. 1 Modbus RTU - no retransmission
- 1 Nr. 1 Modbus RTU - retransmission 4:20mA
- 2 Nr. 1 Modbus RTU - retransmission 0:10V
- 3 Nr. 2 Modbus RTU - no retransmission
- 4 Nr. 2 Modbus RTU - retransmission 4:20mA
- 5 Nr. 2 Modbus RTU - retransmission 0:10V
- 6 Nr. 2 Profibus DP + Nr.1 Modbus RTU - no retransmission
- 7 Nr. 2 Profibus DP + Nr.1 Modbus RTU - retransmission 4:20mA
- 8 Nr. 2 Profibus DP + Nr.1 Modbus RTU - retransmission 0:10V
- 9 Nr. 2 Profinet + Nr.1 Modbus RTU - no retransmission
- A Nr. 2 Profinet + Nr.1 Modbus RTU - retransmission 4:20mA
- B Nr. 2 Profinet + Nr.1 Modbus RTU - retransmission 0:10V
- C Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - no retransmission
- D Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - retransmission 4:20mA
- E Nr. 2 Modbus TCB + Nr. 1 Modbus RTU - retransmission 0:10V

Option

- 0 No option
- 1 Energy totaliser
- 2 Datalogger
- 3 Datalogger + energy totaliser
- 8 Heater break alarm
- 9 Heater break alarm + energy totaliser
- A Heater break alarm + datalogger
- B Heater break alarm + datalogger + energy totaliser
- G Current limit ⁽¹⁾
- H Current limit + energy totaliser ⁽¹⁾
- I Current limit + datalogger ⁽¹⁾
- J Current limit + datalogger + energy totaliser ⁽¹⁾
- O Current limit + heater break alarm ⁽¹⁾
- P Current limit + heater break alarm + energy totaliser ⁽¹⁾
- Q Current limit + heater break alarm + datalogger ⁽¹⁾
- R Current limit + heater break alarm + datalogger + energy totaliser ⁽¹⁾

⁽¹⁾ Not available for all combinations of part numbers. Please refer to the datasheet for further details

Paperless Recorders

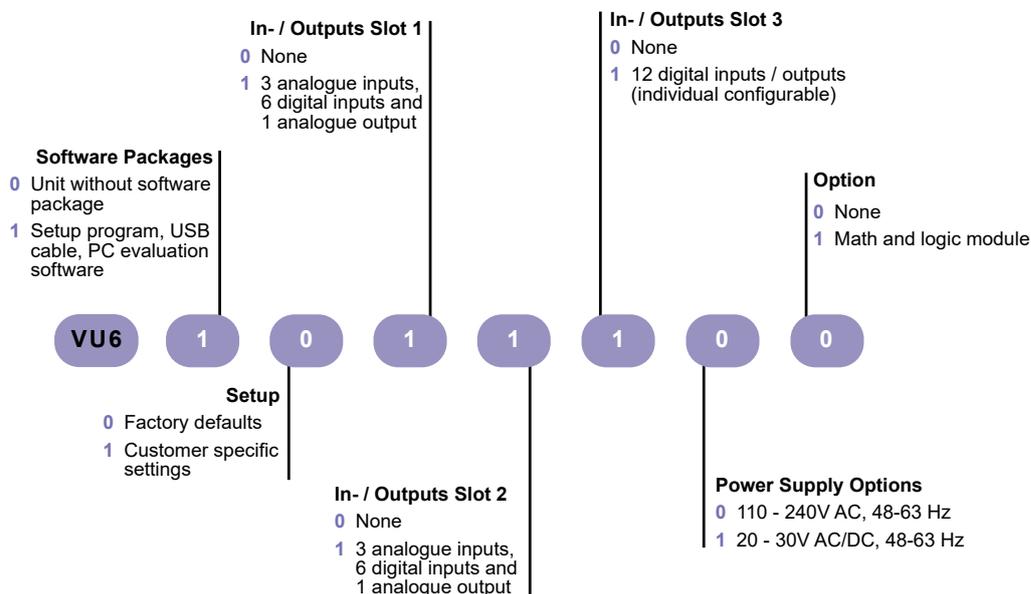
DataVU 6 Paperless Recorder

The DataVU 6 paperless recorder features a resistive touchscreen and an intuitive, icon-based operation and visualisation 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.

Benefits and features

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



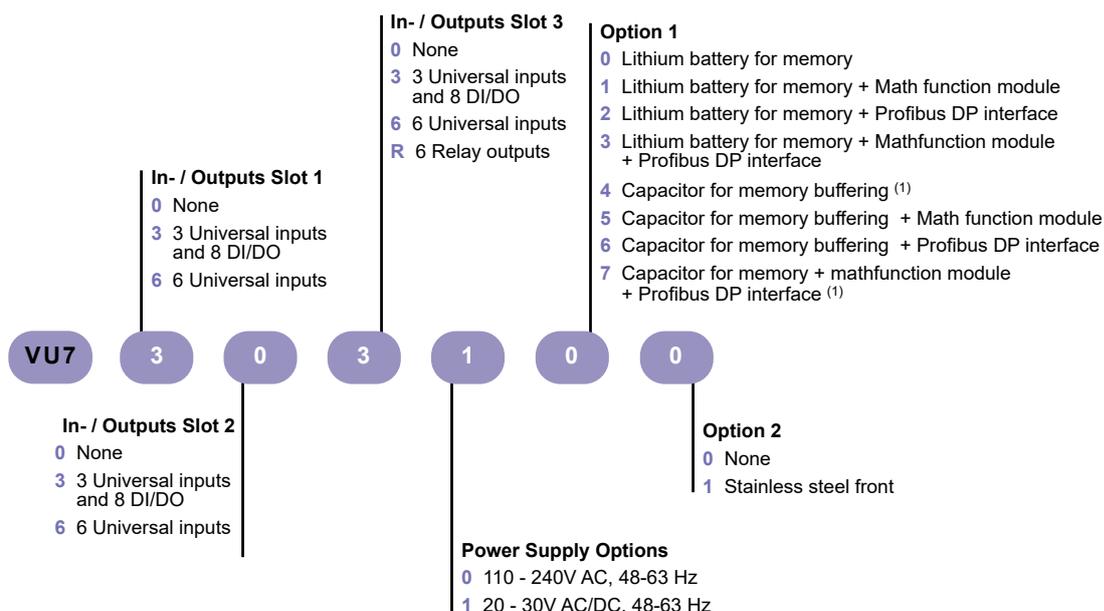
Contents

DataVU 7 Advanced Paperless Recorder

The DataVU 7 paperless recorder features a high contrast TFT display and an intuitive dial operation. The unit supports up to 18 internal channels and up to 72 total by adding external I/O. The evaluation software toolkit allows easy creation of reports and simplifies configuration.

Benefits and features

- 144 x 144 x 200 mm (H x W x D)
- Large TFT colour display (5.7")
- Up to 18 internal analogue inputs
- Up to 7 relay outputs and/or up to 24 digital I/O
- RS485 Modbus, Profibus and Modbus TCP communications
- Modbus Master function
- RS232 barcode interface
- Password security protection
- Supports 54 external analogue channels
- 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, vapours and liquids. Designed to withstand harsh environments in the process industry.

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

Benefits and 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



Output Signal

- 1 4..20mA, two-wire connection
- 2 0..10V, three-wire connection

Process Connection (Internal diaphragm)

- 1 G 1/2" A, EN 837, ISO 228
- 2 G 1/4" A, EN 837, ISO 228
- 3 M20 x 1,5, EN 837, DIN 13
- 4 G 1/2" A, with M5 inner thread
- 5 G 1/2" A, with mechanical damping

Process Connection (Flush mounting)

- 7 G 1/2" A, DIN3852, ISO 228
- 8 G 1/2" A with O-Ring

Configuration

- 03 0-400 mbar
- 04 0-600 mbar
- 05 0-1.0 bar
- 06 0-1.6 bar
- 07 0-2.5 bar
- 08 0-4 bar
- 09 0-6 bar
- 10 0-10 bar
- 11 0-16 bar
- 12 0-25 bar
- 13 0-40 bar
- 99 Special Ranges (from -1bar)

P30 - 2 1 1 - 2 0 03 0 - 00 1

Test and Calibration

- 0 Manufacturing test report
- 1 Calibration certificate

Electrical Connection

- 1 M12 connector
- 2 Valve connector ISO4400 M16
- 3 Valve connector ISO4400 NPT1/2

Output Filter (Electronic damping)

- 0 No Filter
- 1 100ms
- 2 200ms
- 3 300ms
- 4 400ms
- 5 500ms

Contents

P40-2 Pressure Transmitter

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

P30-2 is suitable for applications up to 400 bar gauge and absolute pressure with excellent accuracy and repeatability.

Benefits and 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



Process Connection (Internal diaphragm)

- 1 G 1/2" A, EN 837, ISO 228
- 2 G 1/4" A, EN 837, ISO 228
- 3 M20 x 1,5, EN 837, DIN 13
- 4 G 1/2" A, with M5 inner thread
- 5 G 1/2" A, with mechanical damping

Process Connection (Flush mounting)

- 7 G 1/2" A, DIN3852, ISO 228
- 8 G 1/2" A with O-Ring

Measuring

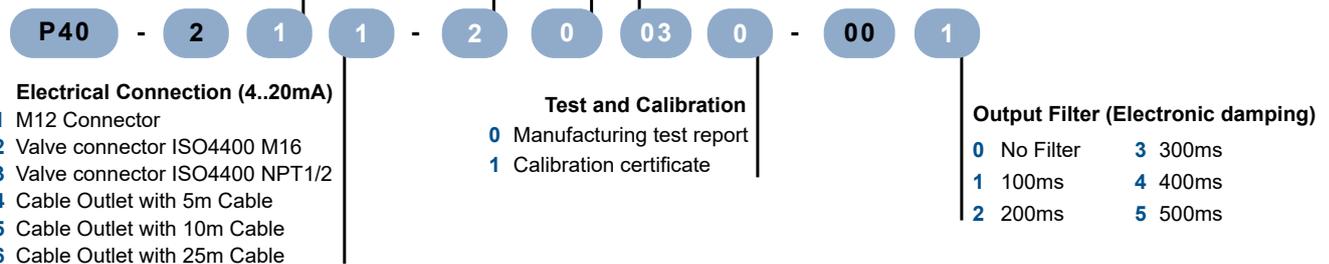
- 0 Gauge pressure
- 1 Absolute pressure

Special Version

- 0 Standard
- 1 Free of grease and oil

Configuration

- | | |
|---------------|--------------------------------|
| 02 0-250 mbar | 12 0-25 bar |
| 03 0-400 mbar | 13 0-40 bar |
| 04 0-600 mbar | 14 0-60 bar |
| 05 0-1.0 bar | 15 0-100 bar |
| 06 0-1.6 bar | 16 0-160 bar |
| 07 0-2.5 bar | 17 0-250 bar |
| 08 0-4 bar | 18 0-320 bar |
| 09 0-6 bar | 19 0-400 bar |
| 10 0-10 bar | 99 Special Ranges (from -1bar) |
| 11 0-16 bar | |



For the full range please refer to the Pressure Transmitters brochure or visit www.west-cs.co.uk to get in contact.

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