

# Product Catalog

A comprehensive range of temperature and process control instrumentation



# About West Control Solutions

West Control Solutions is a global specialist in the design and manufacture of process and temperature control instrumentation. Through our leading product brands - CAL, PMA and West – we have been providing first-class, reliable control solutions for almost a century.

Our easy-to-use products can meet a variety of demands from offering simple, entry-level temperature controllers through to highly sophisticated, functionally-rich solutions for even the most complex of control applications. Our comprehensive product range is routinely selected for use in a number of industrial and scientific applications including plastics and extrusion, ovens and furnaces, laboratory and test equipment, packaging, food and beverage.

As the specialists in temperature control, our products are supported by a dedicated team of experienced temperature control experts, who can provide in-depth application expertise and advice.

West Control Solutions is headquartered in the UK with offices worldwide and a global network of carefully selected distribution partners. West Control Solutions is part of the Danaher Corporation; a Fortune 500 Company with subsidiaries in over 40 countries.



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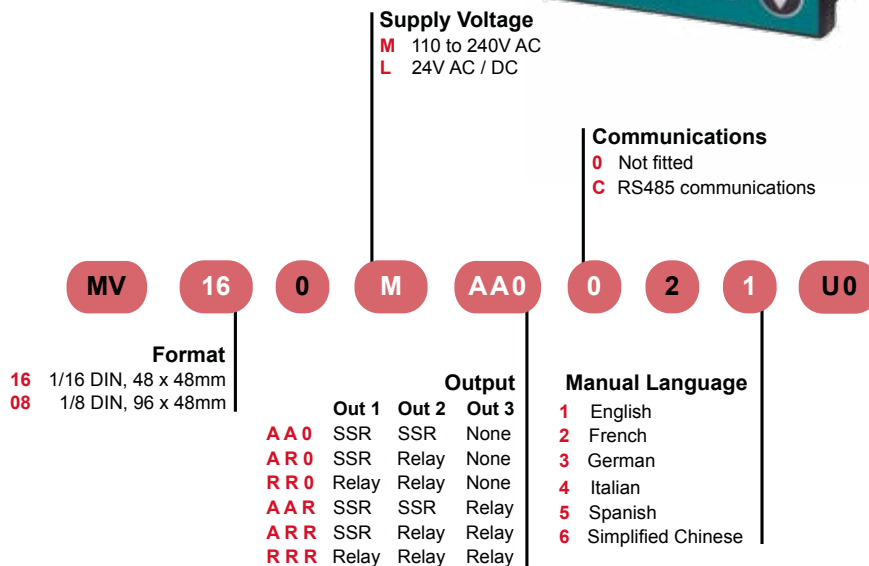
# Single Loop Temperature Controllers

## MAXVU16 & MAXVU8 Single Loop Controllers

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

### Features

- 1/16 DIN (48 x 48 x 67mm) and 1/8 DIN (96 x 48 x 67mm) formats (HxWxD)
- High visibility display -  
MAXVU16: 18mm upper and 10.2mm lower digit display  
MAXVU8: 18mm upper and lower digit display
- 'Heat' only or 'heat & cool' operation
- 2 alarms with latching or non-latching outputs
- Zero shift or 2-point calibration
- Ramp/dwell with delay time
- Front panel keys or software set up
- Integral configuration port
- CE, UL & cUL



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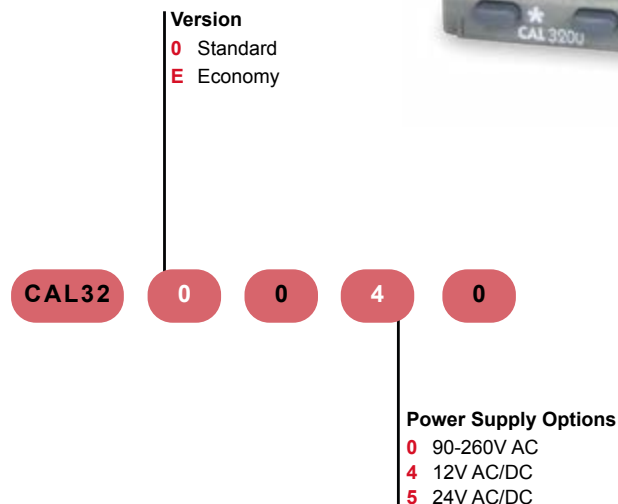
# CAL 3200 Simple PID Temperature Controller

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 rubberised buttons with positive feedback. PID tuning is simple and efficient whilst the unique dAC function minimises overshoot.

## Features

- 1/32 DIN (24 x 48 x 102mm)
- Thermocouple, PT100 (2 wire) and mV sensor input
- 1 x 4 digit LED display with output LED
- 2 outputs; Relay and SSd
- Easy-to-use autotuning
- Simple menu-driven configuration
- Removable terminal block for easy wiring.
- IP66 protection
- UL, CUL



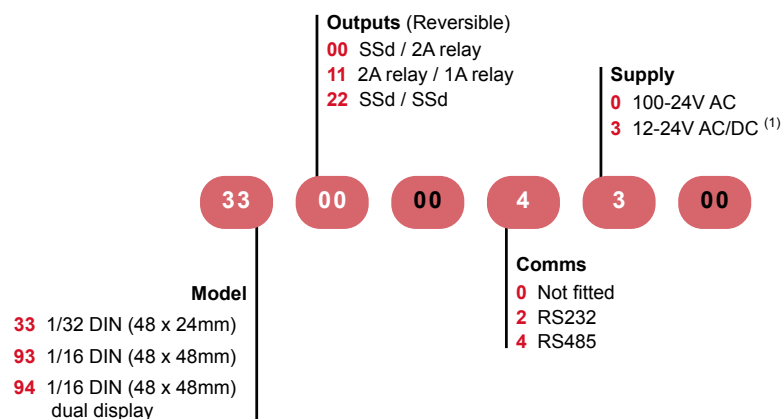
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# 3300, 9300 & 9400 Temperature Controllers

The CAL range provides a choice of compact, efficient temperature controllers. The easy-to-use controllers provide essential temperature control functionality including heat/cool operation and a simple ramp/dwell program. Integrated auto-tune for optimum PID settings is included and the CAL controllers also offer a unique dAC function to minimise overshoot.

## Features

- 1/32 DIN (24 x 48 x 107mm) and 1/16 DIN (48 x 48 x 107mm) formats (HxWxD)
- Thermocouple, PT100 (2 wire) and mV sensor input
- Two outputs plus RS232 or RS485 MODBUS comms options
- Simple menu-driven setup
- Single ramp/soak (dwell) program
- Heat/cool operation
- IP66 protection
- CE, UL & CSA



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

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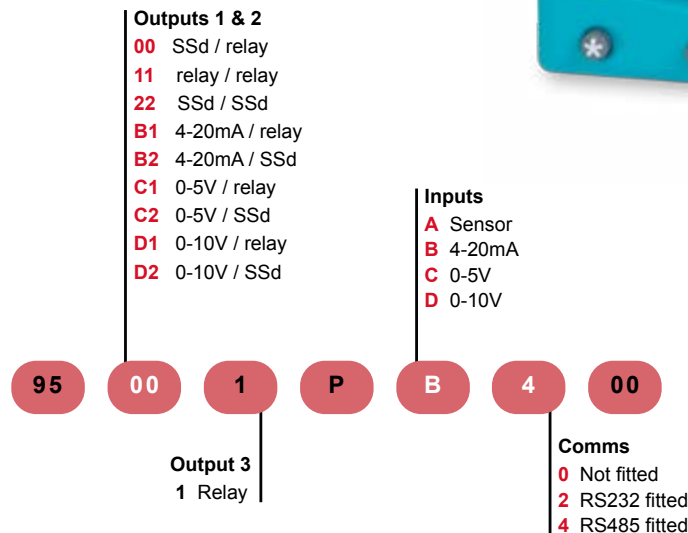
# 9500P Programmable Controller

The CAL 9500P is ideal for applications requiring programmable temperature control in a compact 1/16th DIN unit. The Controller features 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. Alternatively, CALgrafix software is available to quickly configure a unit and easily create programs using the graphical 'drag and drop' feature. Users are able to clone settings for the configuration of multiple instruments in a single network.

## Features

- 1/16 DIN (48 x 48 x 107mm) format (HxWxD)
- Thermocouple, PT100 (2 wire), mA, V and mV sensor input
- Three outputs plus RS232 or RS485 Modbus comms options
- Up to 126 segments shared in up to 31 Programs (memory dependant)
- Memory usage indication during programming
- Profiler functions include event outputs, loop, call, hold back, loop, call and 3 power recovery modes
- Simple menu-driven setup
- Graphical profile setup using CALgrafix software
- Heat/cool operation
- IP66 protection
- CE, UL & CSA



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# 6100+, 8100+ & 4100+ Temperature Controllers

The Plus series of controllers are used in a broad range of temperature and process control applications due to their built-in versatility and ease-of-use. Input and output options include relay, SSR, transmitter power supply, linear remote setpoint and digital.

Control functionality includes remote and dual setpoint options, heat/cool control and setpoint ramping.

## Features

- 1/16 DIN (48 x 48 x 110mm), 1/8 DIN (96 x 48 x 100mm) and 1/4 DIN (96 x 96 x 100mm) formats (HxWxD)
- Ideal for general industrial applications
- Up to three outputs
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Programming port for fast configuration using FTP software
- Flexible options for RS485, remote setpoint, digital inputs and transmitter power supply
- CE, UL, ULC & CSA



### Option Slot 2

- 0 Not fitted
- 1 Relay
- 2 DC for SSR
- 7 DC linear
- 8 Triac

### Option Slot A

- 0 Not fitted
- 1 RS485 communications
- 3 Digital input
- 4 Remote setpoint input (Basic)

### Display Color

- 0 Red upper & lower
- 1 Green upper & lower
- 2 Red upper, green lower
- 3 Green upper, red lower

P6101

Z

2

0

1

7

0

2

2

0

- 6101 6100+
- 8101 8100+
- 4101 4100+

### Option Slot 1

- 0 Not fitted
- 1 Relay
- 2 DC for SSR
- 7 DC linear
- 8 Transmitter power supply

### Option Slot 3

- 0 Not fitted
- 1 Relay
- 2 DC for SSR
- 7 DC linear
- 8 Transmitter power supply

### Power Supply

- 0 100-240V AC
- 2 24-28V AC or DC

### Option Slot B<sup>(1)</sup> (not on 6101)

- 0 Not fitted
- R Remote setpoint input (full)

(1) Not on 6101

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# 6170+, 8170+ & 4170+ Temperature Controllers

The 6170+, 8170+ and 4170+ have been designed specifically for open loop valve motor drive (VMD) applications.

A unique VMD tuning algorithm continuously monitors the process to provide stable control at all times.

## Features

- 1/16 DIN (48 x 48 x 110mm), 1/8 DIN (96 x 48 x 100mm) and 1/4 DIN (96 x 96 x 100mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Valve position indication
- Auto or manual tuning
- Process & loop alarms
- Remote/dual setpoint
- Modbus communications - RS485
- CE, UL, ULC & CSA



<p><b>6171</b> 6170+  <b>8171</b> 8170+  <b>4171</b> 4170+</p>	<p><b>Option Slot 1</b></p> <p>0 Not fitted              1 Relay              2 DC for SSR              7 DC linear              8 Triac</p>	<p><b>Option Slot 2</b></p> <p>0 Not fitted              1 Relay              2 DC for SSR              7 DC linear              8 Triac              9 Dual relay</p>	<p><b>Option Slot 3</b></p> <p>0 Not fitted              1 Relay              2 DC for SSR              7 DC linear              8 Transmitter power supply</p>	<p><b>Option Slot A</b></p> <p>0 Not fitted              1 RS485 communications              3 Digital input              4 Auxiliary input (Basic)</p>	<p><b>Display Color</b></p> <p>0 Red upper &amp; lower              1 Green upper &amp; lower              2 Red upper, green lower              3 Green upper, red lower</p>	<p><b>Option Slot B <sup>(1)</sup></b></p> <p>0 Not fitted              R Full remote setpoint with digital input</p>	<p><b>Power Supply</b></p> <p>0 100-240V AC              2 24-28V AC or DC</p>
<p><b>P6171</b>   <b>Z</b>   <b>2</b>   <b>1</b>   <b>1</b>   <b>2</b>   <b>0</b>   <b>2</b>   <b>2</b>   <b>0</b></p>							

(1) P8171 and P4171 only

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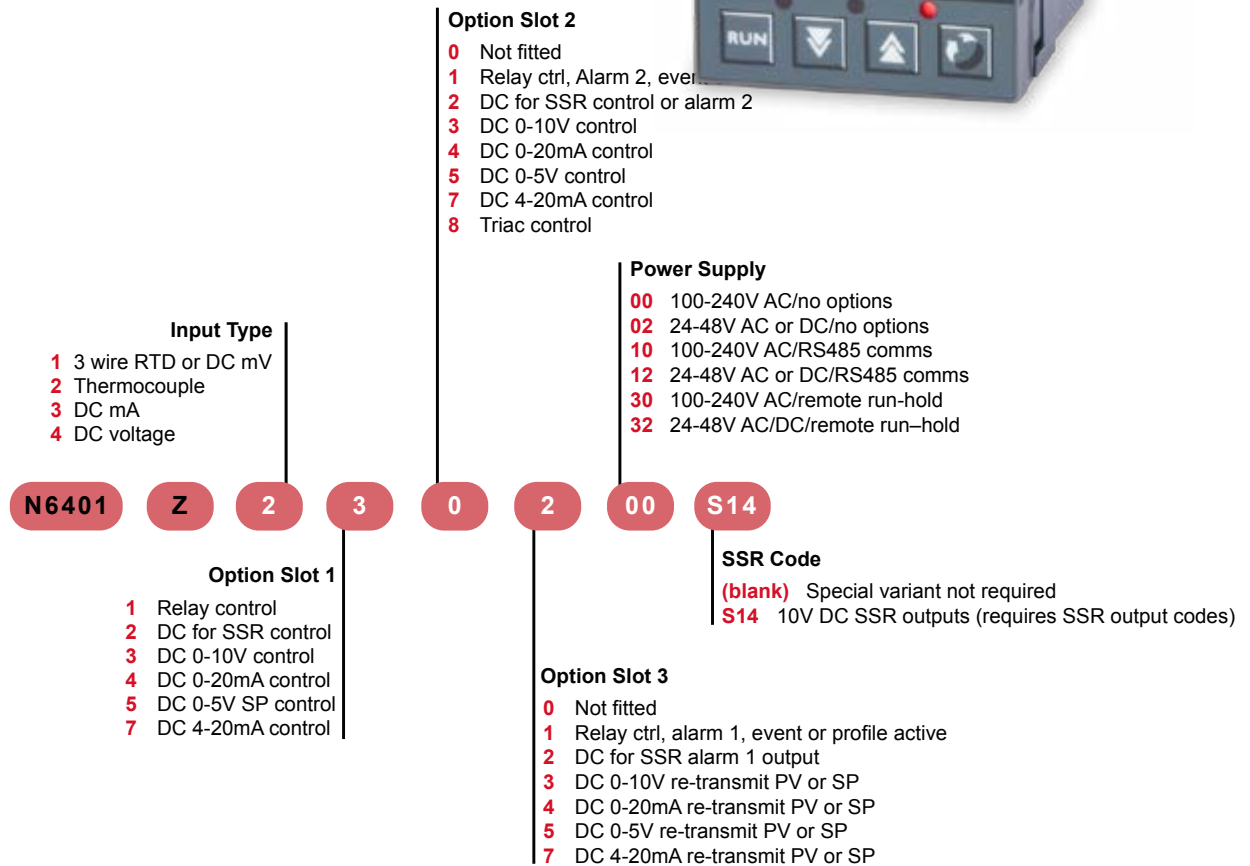
# N6400 Programmable Process Controller

The N6400 is a powerful, single loop programmable controller for complex processes. It offers profiling capability with 4 programs each of 16 free format segments.

The N6400 is an easy-to-use controller, which benefits from an informative display providing maximum process information at a glance. A dedicated configuration port allows configuration directly from a PC and allows for the development, transfer and storage of recipes by dedicated software.

## Features

- 1/16 DIN (48 x 48 x 110mm) format (HxWxD)
- Fast and accurate control via raPID fuzzy logic
- 4 programs with 16 free-form segments
- Program ramps in rate or time mode
- 'Auto hold' facility, remote run hold, event output, power failure recovery and guaranteed soak
- Delayed start
- RS 485 Modbus comms
- CE & cULus



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# Pro-16 Advanced Process 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 setpoint input, RS485 communications and linked to best in class BlueControl<sup>®</sup> software.

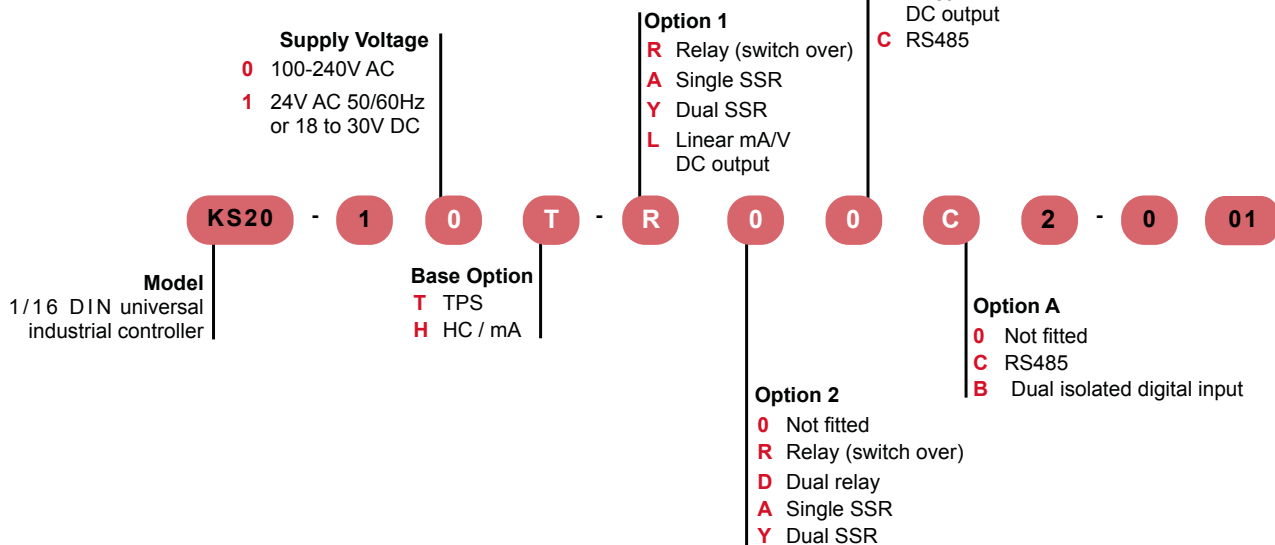
The Pro-16 offers many integrated features for unrivalled performance such as two PID sets to ensure reliable control over a wide setpoint range and separate PID for heat and cool strategies for optimised control and stability. Extensive flexibility is offered with 1 universal input and 1 optional, up to 4 digital inputs, 6 outputs and an inbuilt profiler.

## Features

- 1/16 DIN (48 x 48 x 118mm) format (HxWxD)
- 1 universal input + 1 optional
- Up to 4 digital inputs
- Heater or remote setpoint current input
- Customer specific linearisation for sensors
- Transmitter power supply
- Up to 6 outputs - relay, logic, SSR, linear DC
- 16 profiles x 16 segments
- CE & cULus



- 0 Not fitted
- R Relay (changeover)
- A Single SSR
- Y Dual SSR
- L Linear mA/V DC output
- C RS485



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# Pro-8 Differential Temperature Controller

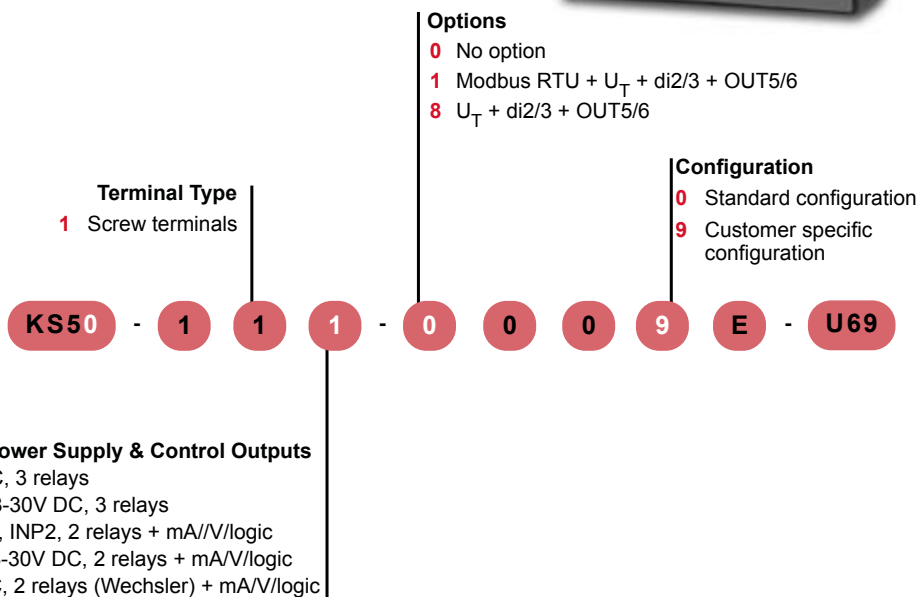
The Pro-8 offers many integrated features for unrivalled performance such as two PID sets to ensure reliable control over a wide setpoint range and separate PID for heat and cool strategies for optimized control and stability. The Pro-8 controller includes soft start and heater boost functionality.

Extensive flexibility is offered with 1 universal inputs and 1 optional, up to 3 digital inputs, 6 outputs and an inbuilt profiler with 10 segments.

Meeting challenging application requirements through a high level of I/O, advanced control capability and offering the best-in-class configuration software, BlueControl®.

## Features

- 1/8 DIN (96 x 48 x 118mm) format (HxWxD)
- Up to 10 segments
- BluePort® front interface and BlueControl® software
- Maintenance manager and error list
- One universal input and one optional input
- 2 PID set manually selectable
- Self-Tuning at start-up and setpoint
- RS 422/485 Modbus RTU interface
- Built-in transmitter power supply
- CE & cULus



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# Pro-4 Temperature Regulator Controller

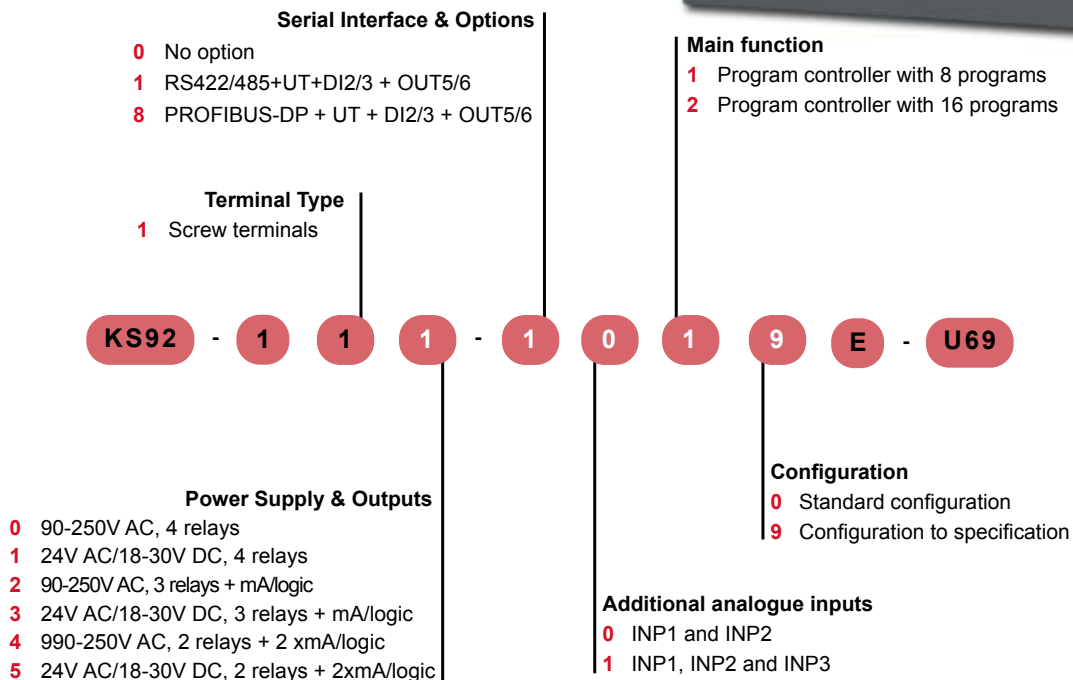
The Pro-4 offers many integrated features for unrivalled performance such as two PID sets to ensure reliable control over a wide setpoint range and separate PID for heat and cool strategies for optimized control and stability.

Extensive flexibility is offered with 2 universal inputs and 1 optional, up to 3 digital inputs, 6 outputs and an inbuilt profiler with 16 segments x 16 profiles.

Meeting challenging application requirements through a high level of I/O, advanced control capability and offering the best-in-class configuration software, BlueControl®.

## Features

- 1/4 DIN (96 x 9 x 118mm) format (HxWxD)
- Up to 16 programs with 16 segments each
- 4 control (event) tracks
- Plain text program names
- BluePort® front interface and BlueControl® software
- Maintenance manager and error list
- Two universal inputs
- Day & Night display shows plain text and bargraphs
- 2 PID set manually selectable
- Self-Tuning at start-up and setpoint
- CE, cULus & DIN EN 14597



(1) only available with screw terminals

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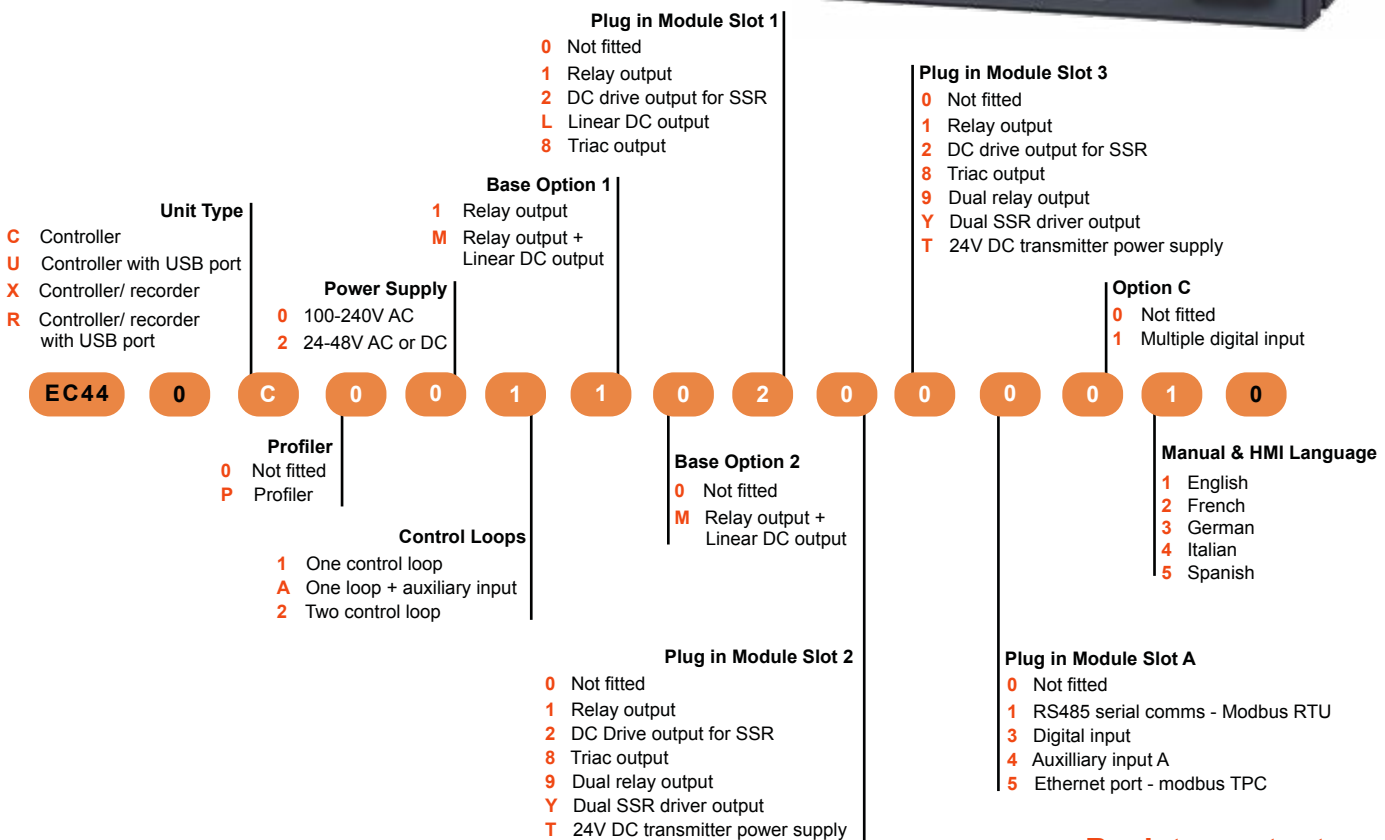
# Multi-loop Temperature Controllers

## Pro-EC44 Single or Dual Loop Controller

Pro-EC44 is designed to simplify user setup, step by step configuration with a wizard saves needing to work through several menus for initial configuration of common settings. A logical menu structure for intuitive navigation allows fast changes and updates to individual settings. Alternatively Pro-EC44 can be set up through the BlueControl<sup>®</sup> PC software.

### Features

- 1/4 DIN (96 x 96 x 117mm) format (HxWxD)
- Single or two loop
- Supports cascade and ratio control
- Graphical / text display (red/green backlit LCD)
- Profiler 255 segments shared by up to 64 programs
- USB configuration and data access
- Modbus RS485 or Modbus TCP Ethernet
- Up to 5 PID sets
- Gain scheduling
- Datalogger with real-time clock
- CE & cULus



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# MLC 9000+ Compact Multi-loop Controller

The MLC 9000+ system comprises 1 to 8 control modules. 1, 3 & 4 loop modules are available (control up to 32 loops per system), with heater break options on 1 and 3 loop modules. Communication options for connecting to a PLC, HMI, PC or SCADA include Modbus, DeviceNet, PROFIBUS, Ethernet I/P and Modbus TCP.

The MLC 9000+ features a hot swap facility, a module can be replaced and back in service within 30 seconds due to automatic reconfiguration.

## Features

- Bus Module: 100 x 30 x 120mm format  
Loop Module: 100 x 22 x 120mm format (HxWxD)
- Quick to setpoint and fast reaction to process disturbances
- On-demand and auto-tuning – no need to manually tune loops
- Set-up 32 loops in less than 30 minutes
- Only buy the loops required – no need to buy in multiples of four
- CE & UL



## Bus Modules

MLC 9000

BM220 - MB

- BM220 - MB** Modbus RTU
- BM230 - DN** DeviceNet
- BM240 - PB** Profibus-DP
- BM250 - EI** Ethernet/IP
- 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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With its compact design and freely configurable functionality, KS 98-1 makes it possible to create flexible solutions for complex process control tasks. And its full graphical LCD display (160 x 80 pixels) sets new standards. Individual plain text lines can be displayed with the current function states. Choose to visualise setpoint and actual values or manipulated variables either in bar graphs or trend curves.

## Features

- 1/4 DIN (96 x 96 x 118mm) format (HxWxD)
- Front interface, graphical engineering tool and simulation, parameter setting via BlueControl<sup>®</sup>
- Extended and improved operator functions
- Tailor-made operating concepts in user language
- All automation functions in one unit: controlling, computing, sequencing, visualising, operating, alarming and many more ...
- Built-in analogue and digital I/O
- I/O extension via CANopen or integrated plug-in modules
- CE, cULus & DIN EN 14597



### Option B Serial Interface

- 0 No Interface
- 1 TTL-Interface + di/do
- 2 RS422 + di/do + clock
- 3 ProfiBus DP + di/do

### Basic Unit

- 0 KS98 standard
- 1 KS98 with TPS
- 2 KS98 with CANopen<sup>(1)</sup>

### Configuration

- 0 Standard configuration
- 9 Customer specific configuration

### Configuration

- 0 Standard configuration

KS98 - 1 0 1 - 2 0 0 9 0 - U A2

### Power Supply & Control Outputs

- 0 90-250V AC, 4 relays
- 1 24V UC, 4 relays
- 4 90-250V AC, 2 relays + 2 current outputs
- 5 24V UC, 2 relays + 2 current outputs

### Certification

- 0 Standard
- U UL / cUL certified
- D EN 14597 certified

### Additional I/O [C]

- 0 No option
- 1 INP3, INP4, OUT3, di/do
- 2 INP3 (nV), INP4, OUT3, di/do
- 3 Basic card without module<sup>(2)</sup>
- 4 Basic card with ordered module<sup>(2)</sup>

### Terminal Type

- 00 Flat pin connectors
- A2 Screw terminals

<sup>(1)</sup> Not possible with Modular Option C  
RM 200 not included in UL/cUL approval

<sup>(2)</sup> Not possible with CANopen I/O modules must be ordered separately!  
Mind possible combinations and power limitations.

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# KS 800 & KS 816 Multi-loop Controllers

The KS 800 multi-loop controller handles 8 zones simultaneously and can be configured as a signal device, 2-point controller, 3-point controller, cascade controller or stepping motor controller.

In the 2-point and 3-point configurations, it can also be set up as a continuous and split-range controller. With functions such as “setpoint reduction” and “heating/cooling with four alarms”, it is particularly well-suited for temperature control in plastic processing machines, packaging machines and tempering equipment or for similar thermal processes.

An extensive array of special functions and a precise and autonomous algorithm takes the load off of PLCs and IPCs. As an option, the field bus can be connected via CANopen, DeviceNet or Profibus DP. With the KS 816 version of the multi-loop controller, the control output signals are transmitted to the decentralised actuators via the bus. The 16-channel controller can also be used as a powerful universal transmitter.

## Features

- 170 x 124 x 85mm format (HxWxD)
- 8/16-channel controller in housing for rail mounting
- Monitoring for heating current and complete control loop
- Direct connection of melt pressure sensors
- Universal inputs for thermocouple and RTDs
- cULus

## KS 800

- Option
- 0 Without additional outputs
  - 1 8 x 20mA outputs
  - 3 Constant voltage source, 2 relays for melt pressure sensors

9407- 480

0

0

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01

### 8 Loop Controller

- 0 KS800 RS (ASCII)
- 3 KS800 DP (Profibus)
- 6 KS800 CAN (CANopen)
- 7 KS800 DN (DeviceNet)



## KS 816

9407 - 481

0

0001

### 16 Loop Controller

- 0 KS816 RS (ASCII)
- 3 KS816 DP (Profibus)
- 6 KS816 CAN (CANopen)



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The KS vario multi-loop controller system was specifically developed for temperature control. In its basic configuration it comprises a controller module and a field bus coupler. Together these two components already constitute a valuable 4, 6 or 8-channel controller.

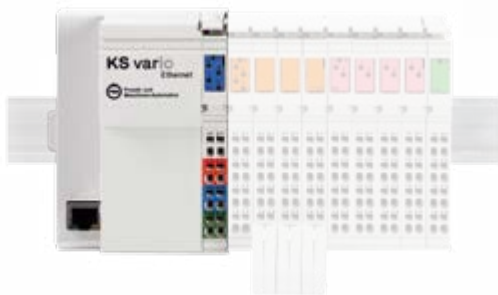
By adding any number of I/O modules, the system can be expanded up to 30 control loops very economically and in precise increments. The number of I/O module used need not exceed the actual number of inputs or outputs required.

## Features

- Compact and modular design
- Open for all major industrial field buses
- Between 4-30 temperature zones can be controlled
- Additional measurements can be integrated
- Highly modular expansion
- Detachable connectors
- CE, UL & CSA



## Buscoupler



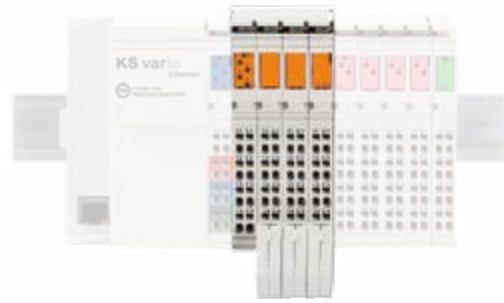
KSVC - 1 0 1 - 0 0 1 1 1 - U 00

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

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## Controller



### Buscoupler Used

- 0 For B.C. Ethernet Mod/TCP, Ethernet IP, Profibus, Modbus
- 1 For B.C. DeviceNet
- 2 For B.C. CANopen

**K**SVC - **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



**K**SVC - **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.com](http://www.West-CS.com) to get in contact.

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# Rail-mounted Devices

## RaiLine

Decentralised installations with field bus systems are finding increasing use in process and machine automation. In order to ensure reliable control in these allocations – also involving complex processes – modular components with additional functionality are required. The flexible RaiLine system, WEST Control Solutions offers a comprehensive product portfolio for decentralised automation.

The combination of RL field bus couplers (for Profibus, CAN, Modbus TCP and Modbus RTU) with various I/O-modules, KS 45 universal controller, Uniflex CI 45 and SG 45 transmitters and the TB 45 temperature limiter, permits modular systems with distributed intelligence to be created.

The space-saving modules for rail mounting and other universally applicable system components help to save time and costs during system configuration, engineering and commissioning.



### Features

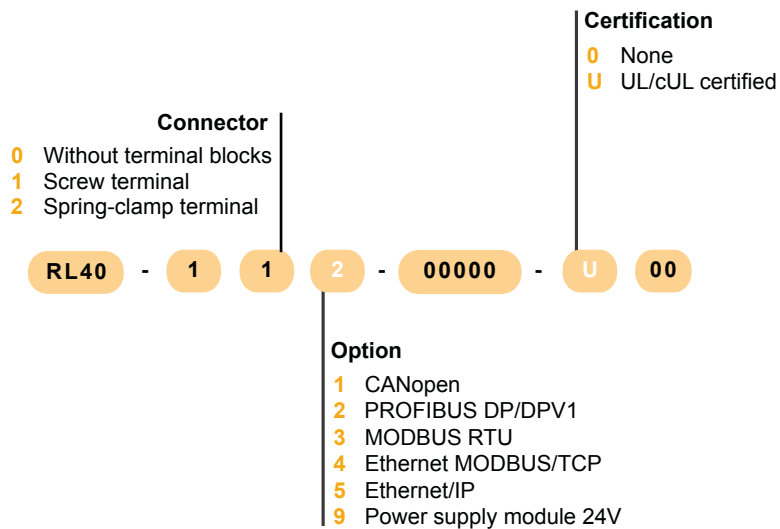
- 96 x 22.5 x 117.5mm format (HxWxD)
- Field bus coupler for Profibus, CAN, Modbus TCP, Modbus RTU and Ethernet IP – ensures cost-effective and convenient connections to PLC, IPC and operating terminals
- Bus monitoring
- Pre-defined output states in case of communication failure
- Compact design – modules only 22.5 mm wide
- 3-key operation and multi-line LC display
- Plug-in terminals – no wiring to disconnect in case of module replacement
- Module replacement during operation (hot swap)
- BluePort® front port
- PC configuration tool BlueControl©
- Cost advantages during projecting, implementation and maintenance
- Local operation
- Freely configurable menu structure
- Freely selectable monitoring functions

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## Field bus couplers

- Profibus DP
- Ethernet IP
- Modbus/TCP
- CANopen
- Modbus RTU
- And additional power supply for large systems

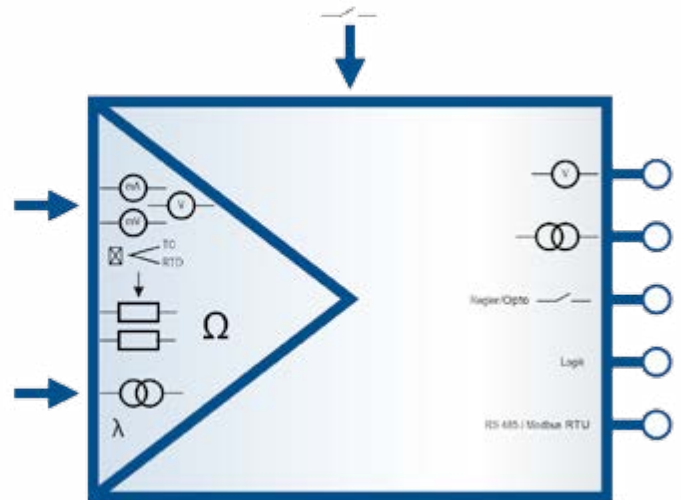


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The KS 45 process controller is a stand alone version for direct connection via RS485 Modbus or system version with buscoupler and inter-module connections permit additional controllers, transmitters and limiters to be fitted without wiring.

## Features

- Display- and operating functions
- 2-point, 3-point, motor valve and continuous control
- Fast sampling rate
- Two universal inputs possible
- Universal output
- Timer and programmer
- Customised linearisation profile
- Auto/manual switchover
- CE, Type tested to EN 14597 & cULus



**Option**

- 0 No option
- 1 RS 485 / MODBUS - protocol
- 2 System interface (only for 24V versions)

**Connector**

- 0 Without plug-in connector terminals
- 1 With screw terminal connector

**Certification**

- 0 Standard (CE-certification)
- D DIN 3440 / EN 14597
- U UI/cUL certified

**Configuration**

- 0 Standard configuration
- 9 Customer-specific configuration

**Input**

- 0 di1 as contact input
- 1 di1 as optocoupler input
- 2 INP2 as universal input, O<sub>2</sub> -measurement, di1 as contact input<sup>(1)</sup>
- 3 INP2 as universal input, O<sub>2</sub> -measurement, di1 as optocoupler input<sup>(1)</sup>

**Power Supply & Control Outputs**

- 0 90-260V AC, 2 output relays, INP2 as current input (0-20mA)
- 1 18-30V AC/18-31V DC, 2 output relays INP2 as current input (0-20mA)
- 2 90-260V AC, mA/V/logic + 2 relays, INP2 as current input (0-20mA)
- 3 18-30V AC/18...31V DC, mA/V/logic + 2 relays, INP2 as current input (0-20mA)
- 4 90-260V AC, 2 optocoupler outputs, 1 relay, INP2 as current input (0-20mA DC and 0-50 mA AC)
- 5 18-30V AC/18..31V DC, 2 optocoupler outputs, 1 relay, INP2 as current input(0-20mA DC and 0-50 mA AC)

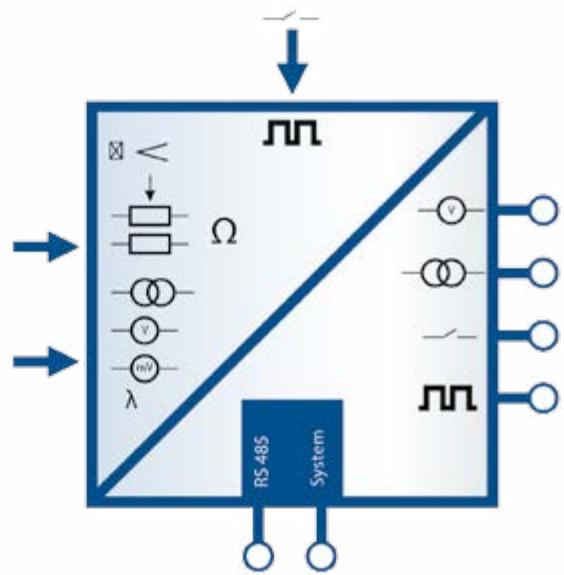
**KS45 - 1 0 1 - 2 0 0 9 0 - U 00**

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

A universal transmitter, 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 wiring.

## Features

- High resolution
- Fast sampling rate
- Two universal inputs possible
- Universal output
- Two relay outputs
- Counter/frequency input, frequency output
- Customised linearisation profile
- Correction of measurement value
- Slave pointer (min/max indicator)
- CE & UL



**Option**

- 0 No option
- 1 RS 485 / Modbus - protocol
- 2 System interface (only for 24V versions)

**Certification**

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

**Connector**

- 0 Without plug-in connector terminals
- 1 With screw terminal connector

**Configuration**

- 0 Standard configuration
- 9 Customer-specific configuration

**Power Supply & Control Outputs**

- 2 90-260V AC, mA/V/logic +1 relay
- 3 18-30V AC/18-31V DC, mA/V/logic +1 relay
- 4 90-260V AC, mA/V/logic +2 relay
- 5 18-30V AC/18-31V DC, mA/V/logic +2 relay

**Option**

- 0 No option
- 1 Option package 1 <sup>(1)</sup>
- 2 Option package 2 <sup>(2)</sup>

**CI 45 - 1 0 2 - 2 0 0 9 0 - U 00**

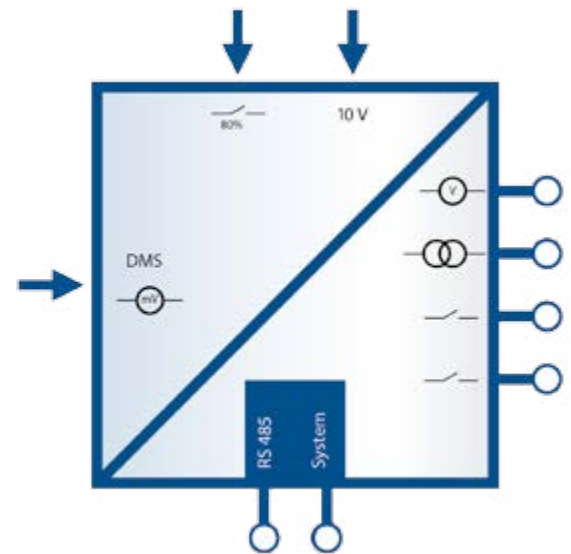
(1) Option package 1: additional universal input INP2, plus: O2-measuring; counter input; functions tare, sample & hold and integrator  
 (2) Option package 2: additional to option package 1: digital input as optocoupler and frequency input / output

Strain-gauge bridge transmitter, 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 wiring.\*

## Features

- Special-purpose transmitter for strain gauge input
- 24-bit universal input
- Voltage supply for the strain gauge bridge
- Simple scaling during commissioning
- 4 or 6-wire connection for force measurement
- 2 relay outputs

\* There is also the dedicated TB45-2 with dual input if you require a certified limiter.



**Connector**

- 0 Without plug-in connector terminals
- 1 With screw terminal connector
- 2 With spring clamp terminals

**Option**

- 0 No option
- 1 RS 485 / MODBUS - protocol
- 2 System interface (only for 24V versions)

**Certification**

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

**Configuration**

- 0 Standard configuration
- 9 Customer-specific configuration

**Power Supply & Control Outputs**

- 4 90-260V AC, mA/V/logic +2 relay
- 5 18-30V AC/18.-31V DC, mA/V/logic +2 relay

**Option**

- 0 No option
- 1 Option package 1 <sup>(1)</sup>
- 2 Option package 2 <sup>(2)</sup>

**SG 45 - 1 0 2 - 2 0 0 9 0 - U 00**

(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

## RL 400 I/O expansion modules

- RL400 offers a variety of sophisticated I/O modules
- High precision analogue inputs
- Output modules with fast on board signal processing
- Reinforced galvanic isolation
- Linearisation and measured value correction
- Up to 62 modules in a system
- 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



### 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 (pnp /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 423-0 4 x Relay (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

### Analogue 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 Outputs

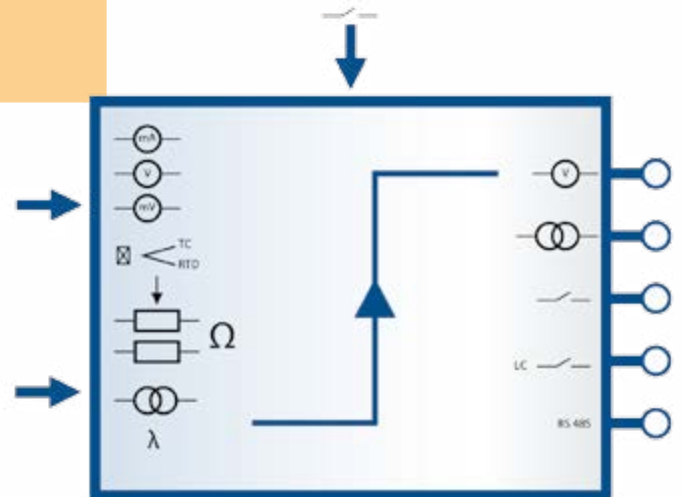
- 4510** RL 451-0 Digital outputs 2 x 4 24 V DC/2A
- 4511** RL 451-1 Digital outputs 2 x 4 24 V DC/2A (free wheeling diode)
- 4520** RL 452-0 Relay outputs 4 x 230 V DC/5A

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

## Features

- For all thermocouple types and resistive sensors
- Display and operating functions
- Two relay outputs
- Analogue output
- Two universal inputs possible
- Reset via key combination or external contact
- Direct connection of RS 485 Modbus RTU without bus coupler. Inter-module connections permit additional controllers, transmitters and limiters to be fitted without wiring.
- CE, Type tested to EN 14597 & cULus



**Option**

- 0 No option
- 1 RS 485 / MODBUS - protocol
- 2 System interface <sup>(1)</sup>

**Certification**

- 0 Standard (CE-certification) <sup>(2)</sup>
- U UI/cUL certified <sup>(2)</sup>
- D DIN 3440 / EN 14597

**Connector**

- 0 Without plug-in connector terminals
- 1 With screw terminal connector

**Model**

- 1 Standard
- 2 DIN approved limiter with dual-TC input

**Power Supply & Control Outputs**

- 0 90-260V AC, 2 relays
- 1 18-30V AC/18-31V DC, 2 relays
- 2 90-260V AC, mA/V/logic +2 relay
- 3 18-30V AC/18-31V DC, mA/V/logic +2 relay

**Configuration**

- 0 Standard configuration
- 9 Customer-specific configuration

**Input**

- 0 di1 as contact input
- 1 di1 as optocoupler input
- 2 INP2 as universal input, O<sub>2</sub> -measurement, di1 as contact input <sup>(2)</sup>
- 3 INP2 as universal input, O<sub>2</sub> -measurement, di1 as optocoupler input <sup>(2)</sup>

**Product Code:** TB45 - 1 0 2 - 1 0 0 9 0 - U 00

<sup>(1)</sup> 24V versions only  
<sup>(2)</sup> Not on TB45-2



# Indicators

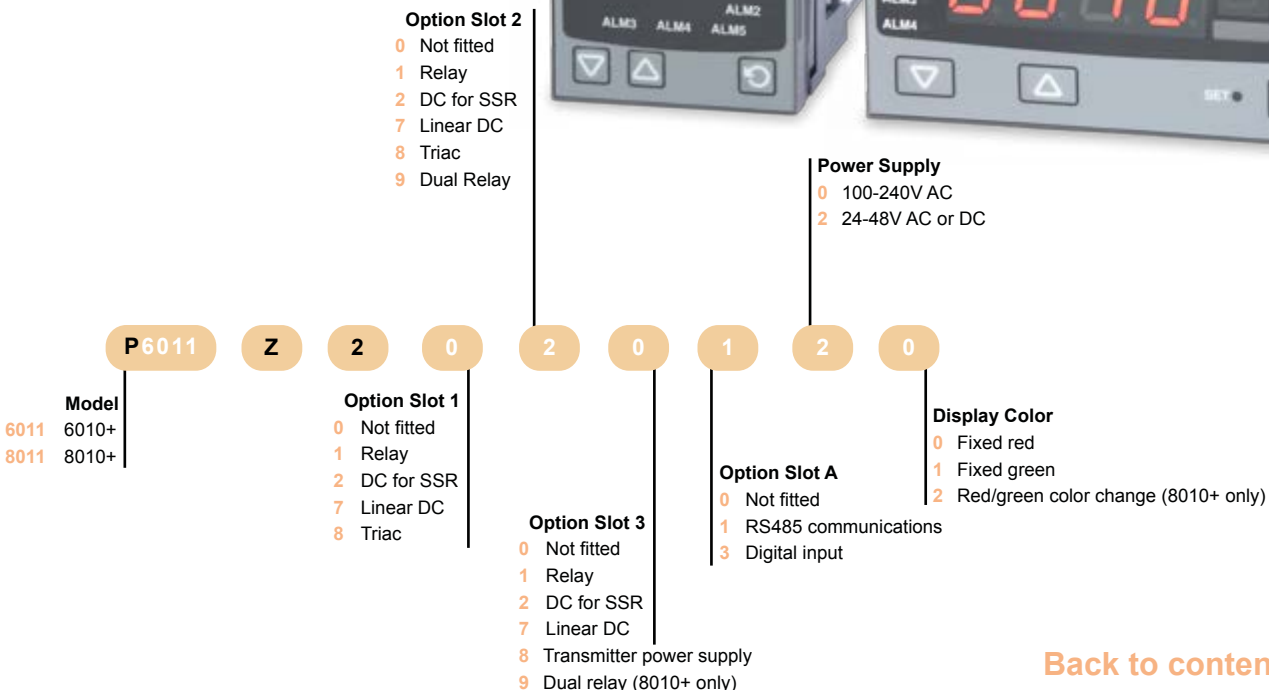
## 6010+ & 8010+ Process and Temperature Indicators

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).

### Features

- 1/16 DIN (48 x 48 x 100mm) and 1/8 DIN (horizontal) (48 x 96 x 110mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Up to 4 outputs
- Output options for SSR driver, triac, relay and linear
- Optional alarms are selectable as latching or non-latching outputs
- PC Configurator with easy to use “wizard” suits both novice and experienced users
- Multi-point scaling and tare features included as standard
- Modbus and ASCII communications
- Red/green single-line 4-digit display
- UR, cUR, CE & CSA



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

The instrument offers customer-specific linearisation for all sensors (16 segments). The maximum and minimum values are always stored and may be displayed on the front for quick reference. In addition to an indicator the Digital 280-1 can also be used as a signaller, on/off controller, two-point controller or a continuous controller.

## Features

- 1/8 DIN (horizontal) (48 x 96 x 118mm) format (HxWxD)
- BluePort® front interface and BlueControl® software
- Maintenance manager and error list
- 5-digit, 20mm big display
- Limit signalling functions with hysteresis, discriminator time and rate of change monitor
- On/off-, 2-point- and continuous controller
- Oxygen measurement with high-impedance input
- CE, cULus & GOST-R

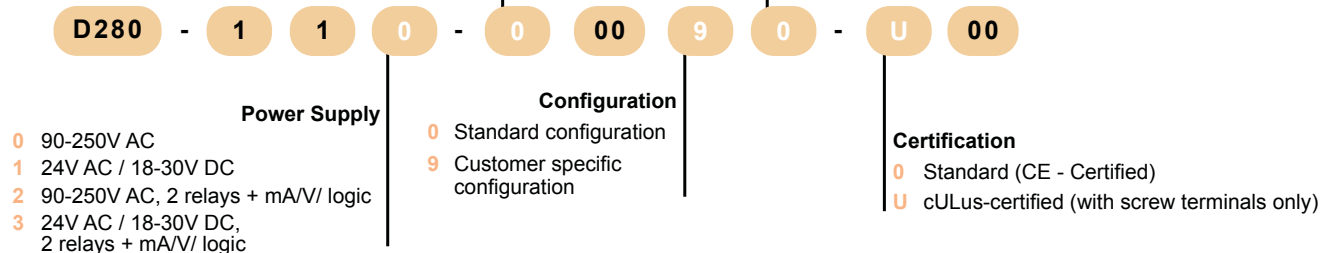


### Options

- 0 No option
- 1 Modbus RTU + Transmitter power supply + digital input di2, di3 (optical coupler)

### Manual Language

- 0 No manual
- D German
- E English
- F French
- R Russian



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## EI2410 Temperature Indicator

The CAL EI temperature indicators are ideal for use with other products from the CAL thermostat range.

The EI2410 provides temperature indication on systems with NTC sensors operating within a range of -60 to 150°C.

### Features

- 35 x 77 x 71mm format (HxWxD) (29 x 71mm 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



#### Voltage

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

EI2410

230

F

#### Units

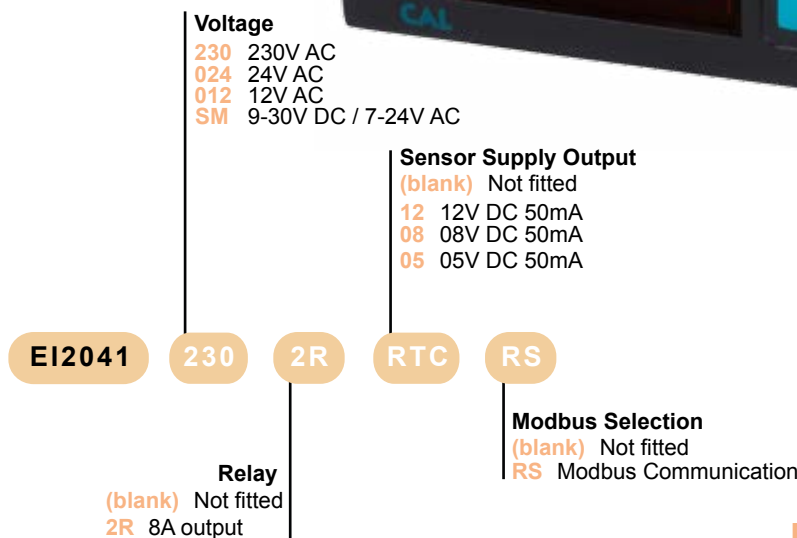
(blank) Centigrade  
F Fahrenheit

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The EI2041 indicator has linear mA and V input, scalable for accurate display of process data. With selectable input types, easy-to-adjust sampling time and various options for display, the EI2041 can be set up to meet a user's specific needs.

## Features

- 35 x 77 x 71mm format (HxWxD) (29 x 71mm cutout)
- 4 digit display
- Scale adjustable between -1999 and 4000
- Adjustable decimal point 0000, 000.0, 00.00 or 0.000
- Measurement unit display
- Four selectable input types (0-20mA, 4-20mA, 0-1V, 0-10V)
- Input calibration
- Adjustable sampling time
- Min and max values can be stored on the display
- Two relay outputs for control and alarm (optional)
- Above and below setpoint value can be set
- RS485 Modbus RTU communication protocol feature (optional)
- Selectable independent, deviation and band alarm
- Sensor supply output (optional)
- CE



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# Limit Devices

## 6700+, 8700+ & 4700+ Limit Controllers

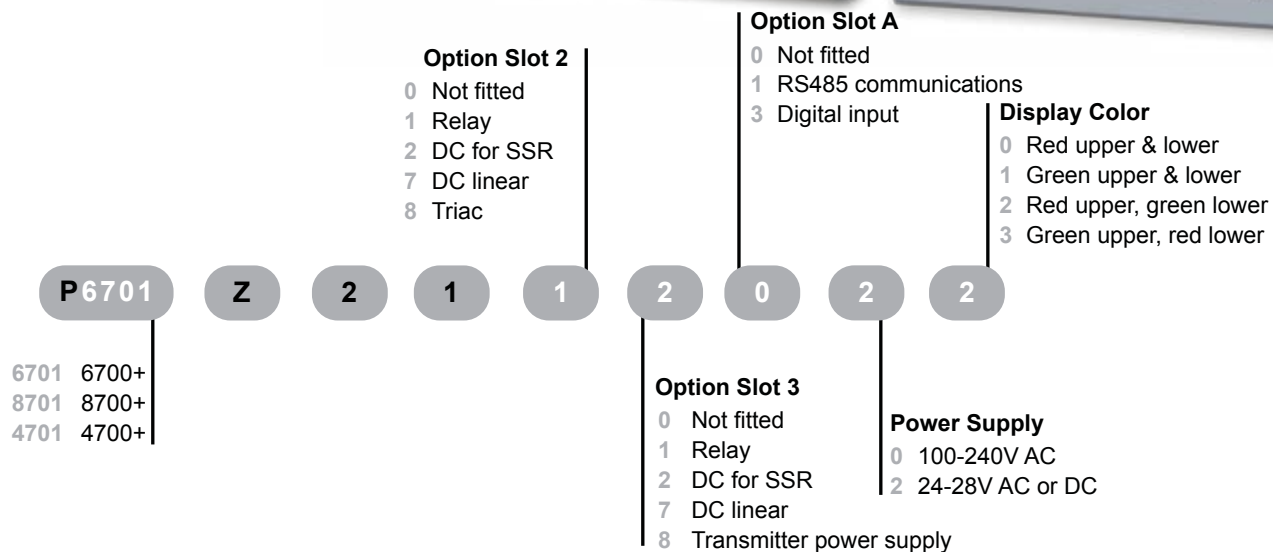
Limit controllers provide a latched relay output which is activated when process parameters either exceed or fall below the desired value, providing a fail safe cut-off which has to then be reset before the process can continue.

LED indication shows when limits have been exceeded and when the relay is latched out.

With a full range of universal sensor input options, the + series range provide a valuable safety control element for most systems.

### Features

- 1/16 DIN (48 x 48 x 110mm), 1/8 DIN (96 x 48 x 100mm) and 1/4 DIN (96 x 96 x 100mm) formats (HxWxD)
- Universal input for thermocouple, PT100, mV, V and mA sensors
- Modbus communications across the range (as well as West ASCII)
- Configuration via PC
- Up to three outputs
- Improved, easy-to-use HMI
- CE, UL, cUR, UR, FM & CSA

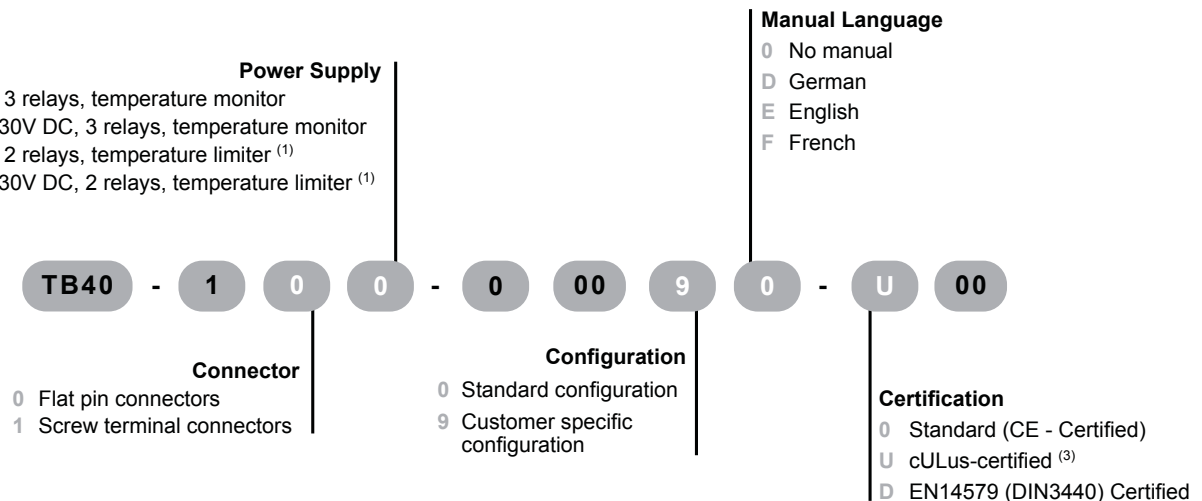


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The TB40-1 can be used to protect heating and refrigeration processes. It is suitable for all thermocouple types and resistance type sensors.

## Features

- 1/8 DIN (96 x 48 x 118mm) format (HxWxD)
- BluePort® front interface and BlueControl® software
- Maintenance manager and error list
- Alarm reset via RESET-key
- Alarm reset via digital input
- CE, Type tested to EN 14597 and cULus



<sup>(1)</sup> TB (EN14597, 2009-1), not available with cULus  
<sup>(3)</sup> With screw terminals only, not available as Temperature limiter TB (EN14597, 2009-1)

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# Thermostats

## ET2001 & ET2011 Digital Thermostats

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

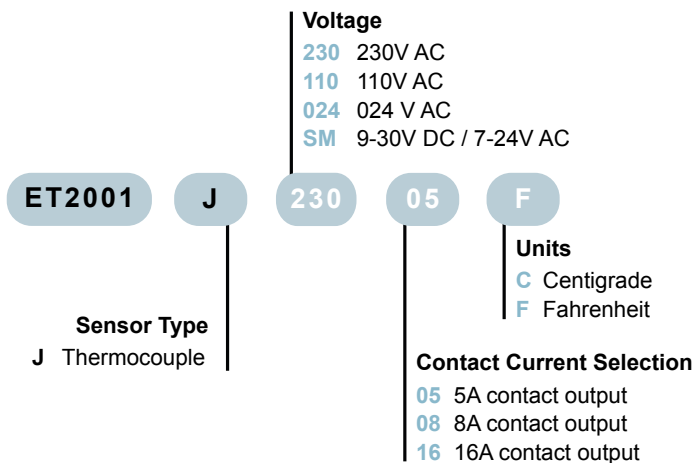
The ET thermostats are cost-effective thermostat devices for both industrial heating or cooling applications, two output version also includes alarm function.

### Features

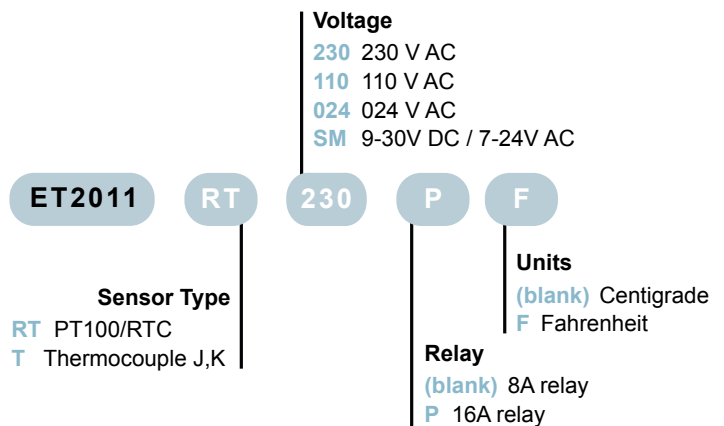
- 35 x 77 x 71mm format (HxWxD) (29 x 71mm cutout)
- Ideal for industrial applications with thermocouple or PT100 temperature sensors
- Range -200 to 1700°C (sensor type dependant)
- Heating or cooling control
- 1 or 2 outputs for control and alarms
- CE



### Single output - Relay



### Two output - Relay & SSR Drive



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# ET2411 & ET2412 Digital Thermostats

The ET2411 and ET2412 are specifically designed for use with NTC sensors.

The units are easy to configure and use, have a large clear display for good visibility and a compact design that is fast to install.

## Features

- 35 x 77 x 71mm format (HxWxD) (29 x 71mm cutout)
- Ideal for industrial or commercial applications with NTC temperature sensors
- Range -0 to 150°C
- Heating or cooling control
- 1 or 2 outputs for control and alarms
- CE



Voltage	
230	230V AC
110	110V AC
024	24V AC/DC
012	12V AC/DC

Relay	
05	5A output <sup>(1)</sup>
08	8A output
16	16A output <sup>(1)</sup>

Units	
(blank)	Centigrade
F	Fahrenheit

ET2411	
11	1 x Relay
12	2 x Relay

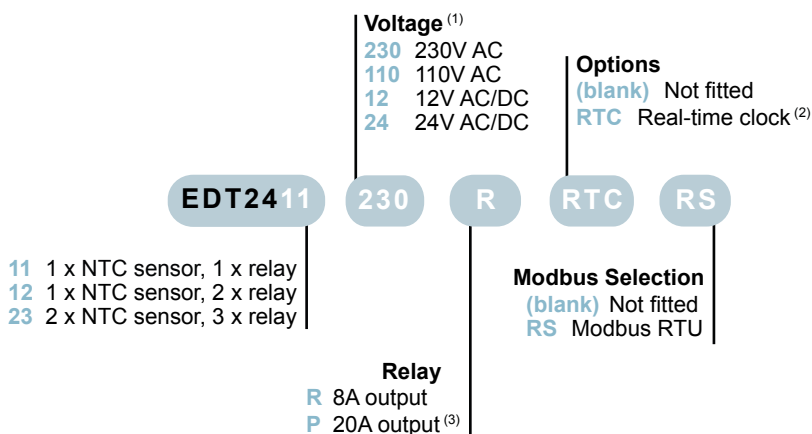
<sup>(1)</sup> 5 and 16A only available on ET2411

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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.

## Features

- 35 x 77 x 71mm format (HxWxD) (29 x 71mm cutout)
- Compressor, defrost and fan control
- Up to two NTC inputs for main and defrost temperature measurement
- Manual, timed and evaporator temperature defrost modes supported
- CAL-Key for fast configuration
- Real-time clock option
- RS485 communications option
- CE



(1) 9-30V DC, 7-24V AC version is also available as an extra cost option

(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.

## Features

- 35 x 77 x 71mm format (HxWxD) (29 x 71mm cutout)
- Dual contact timed output
- External start, reset and hold digital inputs
- 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
- Audible tones
- CE



### Voltage

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

ETM2432

230

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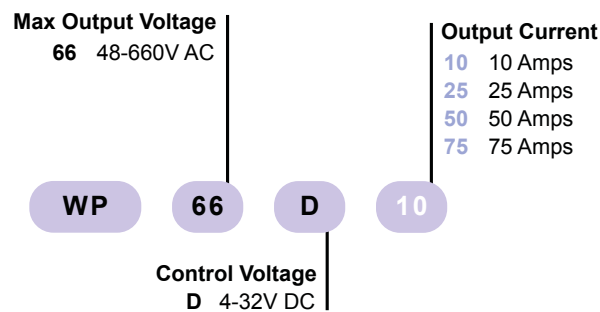
# Solid State Relays

## Panel Mount SSRs

The WP SSRs provide an economy option for users requiring devices to switch up to 75A.

### Features

- 10, 25, 50 and 75A output rating
- 48 to 660V AC load voltage rating
- 4 to 32V DC control voltage
- Panel mounting (or separate heatsink)
- High thermal performance
- RoSH compliant
- CE and UL / cUL



Compatible with:   

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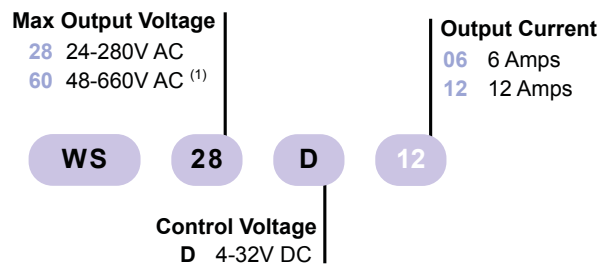
# Slimline DIN-Rail Mounted SSRs

The WS range offers slim-line products for greater space saving. These single phase solid state relays fit a standard DIN-rail in a reduced 12mm or 18mm width for a minimal panel footprint.

The WS SSR is a self-contained device with no need for an additional heat sink.

## Features

- 6 & 12 Amps output rating
- 24 to 280V and 48 to 600V AC load voltage ratings
- 4 to 32V DC control voltage
- DIN rail mounting
- IP20 housing
- Zero Voltage turn-on
- RoHS compliant
- CE and UL / cUL



Compatible with:   

(1) On 12A unit only

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# DIN-Rail Mounted SSR with Integral Heatsink

The WD range of DIN-rail mounted single phase devices come in 22.5mm and 45mm width and range up to 45A. The SSRs can be direct or DIN-rail mounted.

The series also benefits from built-in heat sink with small panel footprint.

## Features

- 10, 20, 30 and 45 Amps output rating
- 24 to 280V and 48 to 600V AC load voltage ratings
- 4 to 32V DC control voltage
- DIN-rail or panel mounting
- Epoxy-free design
- IP20 touch-safe housing
- RoHS compliant
- CE and UL / cUL



## 22.5mm

### Max Output Voltage

- 28 24-280V AC <sup>(1)</sup>
- 60 48-600V AC <sup>(2)</sup>

### Output Current

- 10 10 Amps
- 20 20 Amps
- 30 30 Amps

WD

28

D

10

Control Voltage  
D 4-32V DC

## 45mm

Max Output Voltage  
60 48-600V AC

Output Current  
45 45 Amps


WD

60

D

45

Control Voltage  
D 4-32V DC

Compatible with: **WEST** 

(1) On 10A unit only  
(2) Not on 10A unit

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# Thyristors

## Relay CL - 1PH Thyristor Power Controller

Single-phase thyristor power controller for complex load requirements including feedback and current limit.

### Features

- Load type: normal resistance, infrared long, short and medium waveform, silicon carbide and cold resistance coupled with transformer
- Inputs: 0-10V dc, 4-20mA, 10kpot, SSR, RS485
- Firing mode: burst firing, single cycle, soft start + phase angle and delayed triggering
- Operating temperature: 0 to 40°C without derating
- Control mode: voltage, Vxl power and current I and I2
- RS485 port. RTU Modbus protocol
- CUL



**RCL 035 4 1 V D 0 Y 0 L 2 0**

**Current**

035	35A
040	40A
060	60A
090	90A
120	120A
150	150A
180	180A
210	210A
280	280A
400	400A
500	500A
600	600A
700	700A

**Max Voltage**

4	480V
6	600V
7	690V <sup>(1)</sup>

**Voltage Supply Aux.**

1	90:130V <sup>(2)</sup>
2	170:265V <sup>(2)</sup>
3	230:345V <sup>(2)</sup>
5	300:530V <sup>(2)</sup>
6	510:690V <sup>(2)</sup>
7	600:760V <sup>(2)</sup>

**Input**

V	0:10V dc
A	4:20 mA
K	10 KΩ Pot
R	RS 485

**Firing**

D	Delayed triggering + burst firing DT+BF <sup>(3)</sup>
P	Phase angle PA
E	Soft start + phase angle S+PA

**Control Mode**

0	Open loop
U	Voltage feed back V
W	Power feed back Vxl
Q	Voltage square V2
I	Current feed back I

**Fan Voltage**

0	No fan < 120A
1	Fan 110V > 90A
2	Fan 220V > 90A

**Manual**

0	No manual
1	Italian
2	English
3	German
4	French

**Fuse & Option**

Y	For units =< 40A fuse + fuse holder + CT Standard
H	Fuse + fuse holder + CT + HB with screw terminal
Y	For units > 40A fixed fuse + CT
H	fixed fuse + CT + HB

**Version<sup>(4)</sup>**

1	Std with fuse + fuse holder up to 40A
2	Second fuse normally used with phase to phase <sup>(5)</sup>
3	Second fuse with an additional safety electromechanical relay to open in alarm conditions <sup>(5)</sup>

(1) Available on units > 280A

(2) Load voltage must be included in selected auxiliary voltage range

(3) 8 cycles at 50% power demand

(4) After final option, write current and voltage of load inside brackets Ex (190A-400V)

(5) This option is possible with unit up to 40A. Dimension equal relay M 2PH of same rating

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# Relay S - 1PH, 2PH & 3PH Thyristors

Simple on/off firing with a DC logic input, time proportioned burst firing with a DC linear input (basic firing selectable between 4,8 or 16 cycles). These simple units can be connected with Relay PC to manage multi-zone system.

## Features

- Load type: normal resistance, infrared long and medium waveform
- Operating temperature: 0 to 40°C without derating
- Inputs: SSR Standard, 0:10V, 4:20mA and heater break alarm are options
- Firing mode: zero crossing, burst firing available with analogue input only
- CUL



<p><b>Current</b></p> <p>030 30A 035 35A 040 40A 060 60A 090 90A 120 120A 150 150A 180 180A 210 210A 280 280A 400 400A 500 500A 600 600A 700 700A</p>	<p><b>Input</b></p> <p>S SSR V 0:10V dc A 4:20 mA</p>	<p><b>Firing</b></p> <p>Z ZC Zero crossing <sup>(4)</sup> 4 Burst firing 4 cycles on at 50% power demand <sup>(5)</sup> 8 Burst firing 8 cycles on at 50% power demand <sup>(5)</sup> 6 Burst firing 6 cycles on at 50% power demand <sup>(5)</sup></p>	<p><b>Fan Voltage</b></p> <p>0 No fan &lt; 120A 1 Fan 110V (&gt; = 120A) 2 Fan 220V (&gt; = 120A)</p>	<p><b>Manual</b></p> <p>0 No manual 1 Italian 2 English 3 German 4 French</p>							
<p><b>RS1</b></p>	<p><b>030</b></p>	<p><b>4</b></p>	<p><b>1</b></p>	<p><b>V</b></p>	<p><b>D</b></p>	<p><b>0</b></p>	<p><b>Y</b></p>	<p><b>0</b></p>	<p><b>L</b></p>	<p><b>2</b></p>	<p><b>1</b></p>
<p><b>Model</b></p> <p>1 1PH 2 2PH 3 3PH</p>	<p><b>Max Voltage</b></p> <p>4 480V 6 600V 7 690V <sup>(1)</sup></p>	<p><b>Control Mode</b></p> <p>0 Open Loop</p>	<p><b>Version</b></p> <p>1 Std with one fuse only 2 Units with 2 fuses + fuse holder =&lt; 40A <sup>(7)</sup> 3 Units with 2 fuses + fuse holder + Safety relay + fuse =&lt; 40A <sup>(8)</sup></p>	<p><b>Fuse &amp; Option</b></p> <p>0 No Fuse for all units =&lt; 40A F Fuse + fuse holder Y Fuse + fuse holder + CT H Fuse + fuse holder + CT + HB X Fuse + fuse holder + CT + HB with flat cable connection F Fixed fuses std for all units &gt; 40A <sup>(6)</sup> Y Fixed fuses std + CT H Fixed fuses std + CT + HB</p>							
<p><b>Voltage Supply Aux.</b></p> <p>0 No aux. voltage without HB and/or analogue input up to 210A included 4 With HB and/or analogue input on all unit =&lt;210A aux volt 12:24V ac-dc <sup>(2)</sup> 1 90:130V 2 170:265V<sup>(3)</sup> 3 230:345V<sup>(3)</sup> 5 300:530V<sup>(3)</sup> 6 510:690V<sup>(3)</sup> 7 600:760V<sup>(3)</sup></p>	<p><small>(1) Available on units &gt; 280A (2) For all units &gt; 210A with whichever options and inputs (3) Load voltage must be included in selected auxiliary voltage range for units &gt;210A (4) With 690V the firing is random (5) Available only with analogue input (6) Fixed fuses over 40A (7) If you need one relay S 1PH with 2 fuse &amp; fuse holder. For dimensions see relay S 2PH. This solution can be used up to 40A max (8) If you need one relay S 1PH with 2 fuse &amp; fuse holder + safety relay. For dimensions see relay S 2PH. This solution can be used up to 40A max</small></p>										

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# Relay M - 1PH, 2PH & 3PH Thyristors

Time proportioned burst firing with a DC linear input, front panel display & RS485 comms as standard.

## Features

- Load type: normal resistance, infrared short, long and medium waveform, and silicon carbide
- Firing mode: zero crossing, burst firing, single cycle, soft start + phase angle and delayed triggering
- Operating temperature: 0 to 40°C without derating
- Inputs: 0:10V dc, 4:20mA, 10kpot, SSR, RS485
- Control mode: voltage, Vxl power, I and I2
- RS485 port. RTU Modbus protocol
- CUL



<p><b>Current</b></p> <p>035 35A 040 40A 060 60A 090 90A 120 120A 150 150A 180 180A 210 210A 280 280A 400 400A 500 500A 600 600A 700 700A</p>	<p><b>Input</b></p> <p>S SSR V 0:10V dc A 4:20 mA K 10 KΩ Pot R RS485</p>	<p><b>Firing</b></p> <p>Z ZC Zero crossing C Single cycle SC B Burst firing BF J Soft start + burst firing S+BF D Delayed triggering + burst firing DT+BF P Phase angle PA E Soft start + phase angle S+PA</p>	<p><b>Fan Voltage</b></p> <p>0 No fan &lt; 120A 1 Fan 110V (&gt; = 120A) 2 Fan 220V (&gt; = 120A)</p>	<p><b>Manual</b></p> <p>0 No manual 1 Italian 2 English 3 German 4 French</p>
<p><b>RM1</b>   <b>035</b>   <b>4</b>   <b>1</b>   <b>V</b>   <b>D</b>   <b>O</b>   <b>Y</b>   <b>0</b>   <b>L</b>   <b>2</b>   <b>1</b></p>	<p><b>Model</b></p> <p>1 1PH 2 2PH 3 3PH</p>	<p><b>Max Voltage</b></p> <p>4 480V 6 600V 7 690V <sup>(1)</sup></p>	<p><b>Control Mode</b></p> <p>0 Open loop U Voltage feed back W Power feed back I Current feed back T Voltage to power feed back transfer</p>	<p><b>Version</b></p> <p>1 Std with one fuse only 2 Units with 2 fuses + fuse holder =&lt; 40A <sup>(5)</sup> 3 Units with 2 fuses + fuse holder + Safety relay + Fuse =&lt; 40A <sup>(6)</sup></p>
<p><b>Voltage Supply Aux.</b></p> <p>1 90:130V <sup>(3)</sup> 2 170:265V <sup>(3)</sup> 3 230:345V <sup>(3)</sup> 5 300:530V <sup>(3)</sup> 6 510:690V <sup>(3)</sup> 7 600:760V <sup>(3)</sup></p>	<p><b>Fuse &amp; Option</b></p> <p>Y For units =&lt; 40A fuse + fuse holder + CT H Fuse + fuse holder + CT + HB with terminal Y For units &gt; 40A fixed fuse std + CT <sup>(4)</sup> H Fixed fuse std + CT + HB A Control mode retransmission 4:20mA V Control mode retransmission 0:10mV</p>			

(1) Available on units > 280A  
 (2) For all Units > 210A with whichever options and inputs  
 (3) Load voltage must be included in selected auxiliary voltage range for units >210A  
 (4) Fixed fuses over 40A  
 (5) If you need one relay S 1PH with 2 fuse & fuse holder. For dimensions see relay S 2PH. This solution can be used up to 40A max  
 (6) If you need one relay S 1PH with 2 fuse & fuse holder + safety relay. For dimensions see relay S 2PH. This solution can be used up to 40A max

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# Paperless Recorders

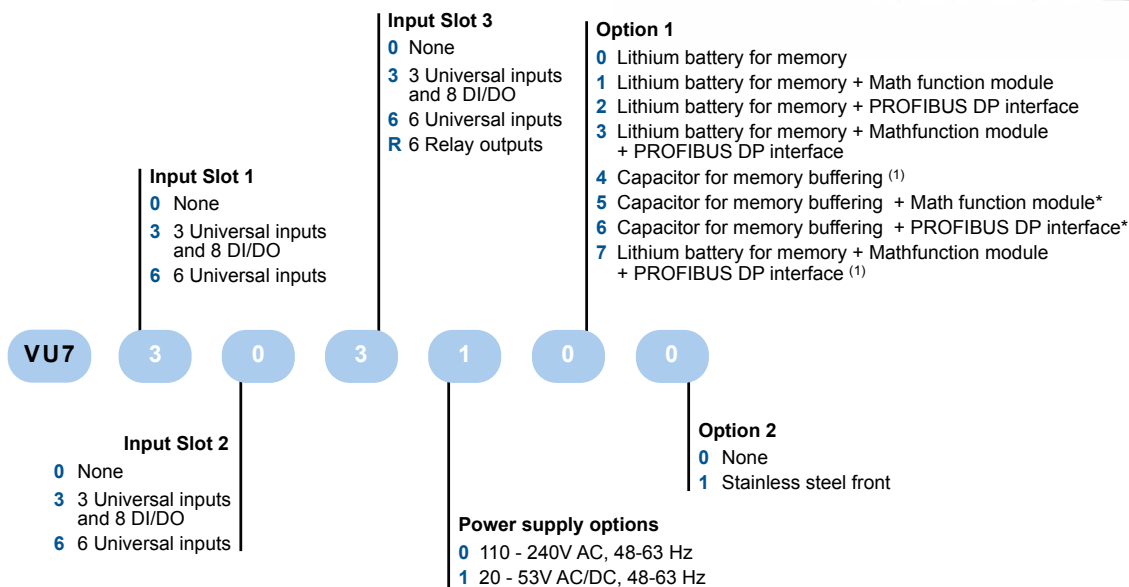
## DataVU 7 Paperless Recorder

DataVU 7 provides advanced flexibility to meet a user's specific requirements without the need to change a process to fit the recorder. If process requirements are subject to change at a later date then the user benefits from the ease with which modifications can be made to the recorder configuration. The recorder is fully scalable - cards can be added to the recorder, facilitating future expansion.

Reporting can be tailored to provide the exact information needed. The DataVU 7 allows reports to be created for daily, weekly, monthly and yearly periods. Furthermore if particular data needs to be evaluated then reports can be created using a custom date range to provide maximum flexibility.

### Features

- 144 x 144 x 200mm format (HxWxD)
- Enhanced security through password protections, instrument can only be configured by authorised operating personnel
- Fully scalable so additional option cards can be added to the recorder at a later date facilitating future expansion
- PC Evaluation software provides option to run reports on data for a specific period (daily, weekly, monthly, annually and custom)
- Data can be annotated with individual comments via the recorder relating to process events
- Able to withstand humid conditions and meets standards for IP65 ingress protection
- Easy to clean, even with aggressive media
- DataVU 7 is a robust and durable recorder that is ideally suited to challenging and harsh environments



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