## Temperature/Process Controllers

### Refrigeration Controller
**PJ easy Compact Series**

- **H** = 36, **W** = 81, **D(OA)** = 78mm
- Monitor with 1 NTC control input
- Controller has a Control NTC input and a Defrost NTC input
- 230V ac supply
- Front panel mounting system
- IP65 protection
- Built in alarm buzzer
- 230V ac power supply
- Only 31mm depth behind panel
- Fast set up using preset configuration
- Scale range -10 to +50°C

These devices are designed specifically for the management of refrigerated units, display cases and chilled showcases where available space is limited. The depth of the units is only 31mm behind the front panel. The Monitor version has no output control while the Controller model has a 16A relay compressor control output.

### Refrigeration Controller
**PJ easy Series**

- **H** = 36, **W** = 81, **D(OA)** = 78mm
- Fast set up using preset configuration
- Scale range -10 to +50°C

These devices are designed specifically for the management of refrigerated units, display cases and chilled showcases. Versions are available with 1, 2 and 3 relay outputs and have preset configurations for the following applications:

- 173-4648 - 3 input monitor
- 173-4649 - 1 Relay output, for use with static refrigeration units (No evaporator fan) and a single NTC sensor input
- 173-4650 - 2 Relay outputs, for use on static units with active defrost by heater and control and defrost NTC sensor inputs
- 173-4651 - 3 Relay outputs, for use on ventilated units (Compressor, Fan and Defrost control), 2 NTC input probes and a 3rd NTC probe

### Temperature and Process Controller
**1/16 DIN - PID**

- PID or On-Off control
- Heat / Cool operation
- Process and Heater alarms
- Current “Quick Transfer”
- RS445 communications slot
- Soft start
- Ramp up set-point
- Current display
- Thermocouple input
- SPOT Relay output - 2A @ 240V ac
- CE Approved and UL Recognised

This instrument provides control in applications requiring a heater break function or soft start for process warm up. Heat current can also be displayed, removing the need for a separate ammeter. The control types available are: Full PID with Pre-tuning, Set-Tune, Manual tuning or On-Off control.

### Plastics Controller
**6000 Series - 1/16 DIN**

- Universal Input - Thermocouple, RTD and linear DC
- Full PID with auto/manual pre-tune
- Heat or Heat/Cool operation
- Up to 3 outputs - Relay, SSR Driver and linear DC
- Programmer function
- Alarms and Diagnostics
- Only 70mm depth behind panel
- CE Approvals

#### Programmer Functions
- 2 programs of up to 16 segments
- Delay timer
- Auto holdback function - guaranteed soak
- Ramp, dwell, step, events, loop
- Function button for profiler control (run, hold, stop, reset)

This controller has a reduced behind panel depth of 70mm and capability expected from higher end products. This includes a universal input for all sensor types allowing flexible utilisation, 2 or 3 outputs (including relay, SSR driver, linear DC), full PID control and a simple user interface with easy to read LED display consisting of 4 digits upper and lower, 4 button membrane keypad including function button that can be configured for auto/manual, tuning or profiler control and 3 output status LED’s. A programmer function has the capability of 2 profiles of up to 16 segments incorporating delay timer, auto holdback for guaranteed dwell and easy control via the controller’s function button providing easy implementation of temperature profile control. Furthermore, alarms and diagnostics help to prevent problems before they happen: relay life, high ambient warning and absolute or deviation limit alarms allow preventative maintenance actions to be taken instead of needing emergency replacements should a controller fail.
**Temperature and Process Controller - continued**

**Temperature and Process Controller - continued**

1/16 DIN - PID - continued

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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<tbody>
<tr>
<td>Relay - Outputs 1 &amp; 2</td>
<td>100 to 240Vac ac</td>
<td>E6C0RRB02</td>
<td>179-1025</td>
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<tr>
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<td>20 to 48Vac ac</td>
<td>E6C0RRB22</td>
<td>179-1026</td>
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<tr>
<td>SSR &amp; Relay - Outputs 1 &amp; 2</td>
<td>100 to 240Vac ac</td>
<td>E6C0GRB02</td>
<td>179-1027</td>
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<tr>
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<td>20 to 48Vac ac</td>
<td>E6C0GRB22</td>
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<td>Relay - Outputs 1, 2 &amp; 3</td>
<td>100 to 240Vac ac</td>
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<td>20 to 48Vac ac</td>
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<td>179-1030</td>
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<td>SSR, Relay &amp; Relay - Outputs 1, 2, 3 &amp;</td>
<td>100 to 240Vac ac</td>
<td>E6C0GRRB02</td>
<td>179-1031</td>
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<tr>
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<td>20 to 48Vac ac</td>
<td>E6C0GRRB22</td>
<td>179-1032</td>
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<tr>
<td>Relay, Relay &amp; Linear DC - Outputs 1, 2 &amp; 3</td>
<td>100 to 240Vac ac</td>
<td>E6C0GRD02</td>
<td>179-1033</td>
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<td></td>
<td>20 to 48Vac ac</td>
<td>E6C0GRD22</td>
<td>179-1034</td>
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</tbody>
</table>

**Multifunction Counter - 1/16 DIN - tico 772**

The tico 772 combines the functions of a preset, batch and shift-count, tachometer and timer. Normal totalising with presets, time and speed measuring is possible using the 4 big tactile push button switches located beneath the large colour display. Two display versions are available, utilising either LCD reflective or LCD transmissive technology.

- Large 2 line display for easy reading
- Easy to operate with only 4 large keys
- Plain text menu
- Signal duration up to 10 minutes to provide improved control
- High input frequency of up to 60 kHz
- Increased accuracy by the use of 4th decimal place
- Single or 2 relay output options
- On demand autotuning of PID parameters
- Sensory break detection & error compensation

**PIDS050 Temperature Controller**

- Dual display of set point and process value
- On demand autotuning of PID parameters
- Programmable thermocouple, PT100, 1mV, 0-10V or 0-20mA inputs
- 2 output type, relay or SSR
- 1 or 2 on/off or PID control outputs + alarms
- Sensor break detection & error compensation

**Temperature Controller - IR33 Series**

- Simple programming of up to 4 relay or 1 SSR outputs
- 3 pre-set control modes
- On / Off or PID autotune control
- IR receiver and buzzer fitted as standard
- Selectable NTC / PTC / PT1000 sensor input options

**Temperature Controller - PJ32 On/Off Temperature Controller**

- 1 or 2 NTC or PTC input options
- Up to 3 relay outputs
- 230V ac power supply
- Front panel mounting system
- Plug in terminals
UMT 500 Multiple Digital Timer

- 5 independent timers or relays
- Programmable timer modes
- Time ranges
- External start or reset
- Large clear LED display with status indicators
- Security coded program access

**Power consumption**

**Digital Temperature Controller**

- Contact rating: 3A @ 240V ac (res.)
- Output contact: SPCO
- Operating voltage range: 85% to 110%
- Panel cut-out: 45x45

**Panel cut-out**: 45x45, H=48, W=48, D=85.8

**Weight**: 290g

**Approvals**

- Complies with CE directives EN50081-1
- Operating Temperature: 0 to 50°C
- Reset Time: 100ms
- Power Drain: 3VA max.
- Supply Voltage: 24VAC/dc

**Timing Ranges**

- 0 to 99.9 Secs, 0 to 99 mins 59 secs, 0 to 99 hrs 59 mins
- On/Off Control: 'E5C'

**Temperature Controllers**

- Type K thermocouple sensor: 0°C to 200°C, 0°C to 400°C
- Offset accuracy: Thermocouple 2°
- Display: Three digit, seven segment LCD plus indicators for Fahrenheit and output.

**Temperature ranges**

- Type K thermocouple: -99°C to +700°C
- Platinum thermocouple: -99°C to +300°C

**Protection**

- IP65 / rear IP20
- Front protection

**On/Off Control - 'E5C'**

- Temperature controllers for On/Off control via type K & PT100 sensors
- Operation of output relay and LED indicator occurs simultaneously with power supply connection
- When preset temperature is achieved, cooling cycle commences by reset of output relay and LED indicator is extinguished
- If thermostatic control opens circuits, controller automatically enters safer cooling mode
- Controllers are cold junction compensated. Panel mounting brackets supplied

**Controller Data:**

- 5 programmable timer modes
- Two switching outputs
- Two setpoints
- Freely configurable process value input
- Common Features:
  - Structured operating and programming layout
  - Proven self-testing facility
  - Ramp function 0.5°C or 0.1°C
  - Key/level inhibit
  - One binary input
  - Two switching outputs

**Process Valve Input:**

- For Pt100, Pt1000, KTY11-6 resistance thermometers
- Type L, J, E, T, K, N, R, B thermocouples

**Currents:**

- Current: 0 – 20mA, 4 – 20mA
- Voltage: 0 V, 10 V, 2 – 10V

**Binary Input:**

- Via floating contact
- On type 702042/43/44: always
- On type 702040/41: configured as an alternative to output 2

**Output 1:**

- Relay, make (SPST-NO), contact rating 3A/250V AC with resistive load
- 2-state controller (inverse/direct) or 3-state controller (inverse/direct) or limit comparator functions (k = 1 – 8) can be configured

**Output 2:**

- On type 702042/43/44: relay, make (SPST-NO), contact rating 3A/250V AC with resistive load, and in parallel: logic 0/5 V/20 mA, Rload 250Ω

**2-state controller (inverse/direct) or 3-state controller (inverse/direct) or limit comparator functions (k = 1 – 8) can be configured

**General Controller Data:**

- Measuring Circuit Monitoring: the outputs adopt a defined status
- Data Backup: EEPROM
- Supply Voltage: 110 to 240 V AC @ 48/63 Hz
- Power Drawn: Max. 5 VA
- Electrical Connection: At the back, via pluggable screw terminals
- Ambient/Storage Temperature: 0 to 55°C
- Dimensions by Type:
  - 702040: 96x24mm
  - 702042: 96x48mm
  - 702043: 48x24mm
  - 702044: 48x48mm
- Depth (internal Panel): 100 mm

**Accessories**

- Mounting frame for controller on DIN rail

**System Providing Intelligent Online Buying**

- Complete cost control, reduced administration time, visibility of your spend, flexibility and personalisation to your company's needs.
**Temperature/Process Controllers - continued**

**ZEN Programmable Relay**
- Highest control performance
- Improved visibility and high reliability
- Depth beyond front panel: 60 mm
- Faster sampling at 250 ms
- Ideal for heater control
- Approvals: UL 61010-1, CSA C22.2 No. 1010-1, EN61326, EN61010-1, IEC61010-1 and VDE0106

**Power**
- 3.5 V (100 to 240 V AC)
- 3.5 VA (24 V AC)
- 2.5 W (24 V DC)

**Setting Method**
- Digital setting using front panel keys
- Control method: On/Off control or 2/3-pole control (with auto-tuning)
- Indication method: 7-segment digital display and individual indicators

**Accuracy**
- ±0.1°

**Scale**
- -10°C to +65°C

**Ambient/Storage Temperature**
- 0 to 50°C (-25 to 70°C)

**Dimensions**
- 77x34x70mm

**Indicators**
- 3 digits, 14mm, 7 parts red LED

**Input/Output**
- 6 inputs, 4 outputs

**Relay Accessories**
- Batteries for ZEN relay
- ZEN relay starter kit, AC
- Memory cassette, EEPROM: ZEN-AR401
- PSU for ZEN relay
- Software for ZEN relay
- Cable 2m, ZEN relay to PC

**Power**
- 3.5 VA (100 to 240 V AC)

**Setting Method**
- Digital setting using front panel keys

**Accuracy**
- ±0.1°

**Scale**
- -50°C to +110°C

**Ambient/Storage Temperature**
- 0 to 50°C (-25 to 70°C)

**Dimensions**
- 85x34x70mm

**Indicators**
- 4 digits, 12mm, 7 part yellow LED

**Input/Output**
- 12 inputs, 6 outputs

**Relay Accessories**
- Batteries for ZEN relay
- ZEN relay starter kit, AC
- Memory cassette, EEPROM: ZEN-AR401
- PSU for ZEN relay
- Software for ZEN relay
- Cable 2m, ZEN relay to PC

**Temperature display CUB5**
- 5-digit 7-segment display with 12.2 mm LCD or backlit LCD
- Easy programming via buttons or software
- Sensor fail detection and programmable offset
- NEMA4X/IP65 sealed front bezel

**Temperature/Process Controllers - continued**

**EDT1443 NTC Thermostats**
- 33x77mm sized
- On-Off control
- 3 contact outputs for cooling de-frost and fan controls
- 2 probes for temperature and de-frost controls
- Adjustable offset for probe
- The maximum and the minimum values of the setpoint can be limited

**Supply Voltage Type**
- 230VAC

**Mfrs.**
- 230VAC: EDT1443-NCT-2307

**Price Each**
- 1+ 5+ 10+ 25+

**Temperature display PAXT**
- 5-digit 7-segment display with 14 mm LED
- Input RTD or thermocouples
- Option cards: 2 or 4 setpoints, analog output and serial communication
- Easy programming by front buttons or software
- Sensor fail detection and offset
- NEMA4X/IP65 sealed front bezel

**Supply Voltage Type**
- 240VAC/dc

**Mfrs.**
- 24VAC/dc: EDT1443-NCT-2407

**Price Each**
- 1+ 5+ 10+ 25+

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**Order Code**
- 125-0507
- 125-0509
- 125-0501
- 125-0502
ON/OFF Temperature Controllers

Thermocouple and Platinum Resistance

- Large 11.2mm 3½ digit LED display
- Standard 96x48mm DIN case
- Slimline design, depth behind panel only 53mm
- Quick-release plug-in rear terminals
- SPPO relay contact switches at set point adjustable by front panel potentiometer
- Thermocouple instruments have automatic cold junction compensation
- ON/OFF, P or PI Control – Infra-Red
  - Infra-Red Remote Transmitter
  - Humidity & Air Pressure (Process)

Temperature Controller

- Housed in flame retardant DIN48 panel mounting plastic case
- PT100 and Type K thermocouple types
- Power on & status LED indication. Facility to drive an external deviation meter on the standard 11 pin base connection
- Cold junction compensation and lead resistance compensation are provided
- Temperature setting is lockable using the hex key provided

Price Each

<table>
<thead>
<tr>
<th>Mfrs. No.</th>
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<tbody>
<tr>
<td>107-991</td>
<td>Type J thermocouple</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
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<tr>
<td>107-992</td>
<td>Type K thermocouple</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
</tr>
<tr>
<td>107-993</td>
<td>PT100 platinum resistance</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
</tr>
</tbody>
</table>

On/Off and PD Control

- housed in flame retardant DIN48 panel mounting plastic case
- PT100 and Type K thermocouple types
- Power on & status LED indication. Facility to drive an external deviation meter on the standard 11 pin base connection
- Cold junction compensation and lead resistance compensation are provided
- Temperature setting is lockable using the hex key provided

Price Each

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<td>107-991</td>
<td>Type J thermocouple</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
</tr>
<tr>
<td>107-992</td>
<td>Type K thermocouple</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
</tr>
<tr>
<td>107-993</td>
<td>PT100 platinum resistance</td>
<td>950-150</td>
<td>1+ 5+ 10+ 25+</td>
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Temperature/Process Controllers - continued

Humidity & Air Pressure (Process) - continued

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<tbody>
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<td>3,200V 1/32 DIN</td>
<td>3300</td>
<td>965-118</td>
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<tr>
<td>1 Relay &amp; SSR</td>
<td>3300</td>
<td>965-120</td>
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<td>965-131</td>
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<td>3 Relay &amp; SSR</td>
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<td>965-167</td>
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<td>965-179</td>
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</table>

PID Control - '3200 1/32 DIN'.

- Ultra compact, sealed front fascia (24x48mm) to NEMA 4x/IP66
- PID autotune automatically matches PID settings to the application
- Dual output, 2A relay & SSR drive for alarms or heat/cool operation
- Bright LED 4 digit display configurable in °C, °F and engineering units

Temperature Controllers

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code 1</th>
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<tbody>
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<td>100-240Vac</td>
<td>320000</td>
<td>737-227</td>
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<td>320500</td>
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Panel Adaptors

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<td>101-046</td>
<td>301.610</td>
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<tr>
<td>1/16 DIN</td>
<td>737-252</td>
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PID Control - '9900 1/16 DIN'.

- Industry standard format with 48x48mm front fascia
- PID autotune on warm up or at set point
- Selectable inputs include 9 thermocouples and 2 or 3 wire PT100
- Dual output, extra heavy duty relays for alarms or heat/cool operation
- Bright clear green display configurable in 1.0/0.1 digit °C or °F

Humidity Probe

<table>
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</table>

Process Controllers - Times, Timers, Timers, Timers, Timers

Temperature Controller

E5CB Series - 1/16 DIN

- Highest control performance
- Improved visibility and high reliability
- Depth beyond front panel: 60 mm
- Faster sampling at 250 ms
- Ideal for heater control

Power Supply

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Mfrs.</th>
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<td>115Vac</td>
<td>991.11C</td>
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</tbody>
</table>

Operator lockout prevents unauthorised access

Supply voltage 100 to 240Vac ± 10%, 50-60Hz 3VA

Outputs 2A relay & SSR drive 10mA @ 5V dc

Temperature range User selectable between -200 to 1800°C

Sensor types Thermocouples, Type J, K, N, S, T, E, L, B & RTD/PT100

Ambient conditions 0 to 50°C

Supply Voltage 100 to 240VAC ± 10%, 50-60Hz 3VA

Outputs Relay 2A @ 250VAC (Resistive) SSR Drive: 10mA @ 5V ac

Temperature range User selectable between 200 to 1800°C

Sensor types Thermocouples, Type B, E, J, K, N, R, S, T & RTD/PT100

Linear input ±10 to 50mV

Calibrated accuracy ±0.25% sensor maximum ±1°C

Ambient conditions 0 to 50°C

Price Each

<table>
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<tbody>
<tr>
<td>100 to 240Vac</td>
<td>E5CB-Q1TC AC100-240</td>
<td>737-3874</td>
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<tr>
<td>100 to 240Vac</td>
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<td>12Vac/dc</td>
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PID Autotune and Data Logging Option

PID & Autotune - Infra-Red - continued

Supply voltage 100 to 240Vac ± 10%, 50-60Hz 3VA

Outputs Relay 2A @ 250VAC (Resistive) SSR Drive: 10mA @ 5V ac

Temperature range User selectable between 200 to 1800°C

Sensor types Thermocouples, Type B, E, J, K, N, R, S, T & RTD/PT100

Linear input ±10 to 50mV

Calibrated accuracy ±0.25% sensor maximum ±1°C

Ambient conditions 0 to 50°C

Supply Voltage 100 to 240VAC ± 10%, 50-60Hz 3VA

Outputs Relay 2A @ 250VAC (Resistive) SSR Drive: 10mA @ 5V ac

Temperature range User selectable between 200 to 1800°C

Sensor types Thermocouples, Type B, E, J, K, N, R, S, T & RTD/PT100

Linear input ±10 to 50mV

Calibrated accuracy ±0.25% sensor maximum ±1°C

Ambient conditions 0 to 50°C

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<td>100 to 240Vac</td>
<td>E5CB-Q1P AC100-240</td>
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<td>12Vac/dc</td>
<td>E5CB-R1PD AC/DC24</td>
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<td>197-3877</td>
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</tbody>
</table>
Digital Temperature Controllers

**ESN Series - 1/8 DIN & ESAN Series 1/4 DIN**

- High Resolution display with 5 digits
- Layed programming menus
- High speed sampling cycle of 60 ms
- High Accuracy - Thermoire/PF input: ±0.1% of PV, Analog input: ±0.1% FS
- Flexible contact with logic operations
- Preventive maintenance for relays
- Option Units can be mounted to provide additional functions
- Complete with terminal cover
- CE approved, UL Recognised

Digital Temperature Controllers

**ESN Series - 1/8 DIN & ESAN Series 1/4 DIN**

- One-touch operation with PF Key that can be assigned to auto manual, RUN/STOP, or other functions.
- Complete with terminal cover
- Option Units can be mounted to provide additional functions
- CE approved, UL Recognised
Temperature/Process Controllers - continued

Zelio® Temperature Controllers - continued

REG-24 1/4 DIN, REG-48 1/2 DIN and REG-96 1/8 DIN - continued

Supply Voltage 85-264V ac

Operating Ambient 0-55°C, 5-85%RH

Inputs

Control Modes PID or ON/OFF

Output Ratings Relay: 2A, 264V ac resistive

Logic: 40mA, 12V dc (non-isolated from PV)

DC: 0-20mA into 500Ω max.

(nc-non-isolated from PV)

IP66, NEMA4 plug-in from front

Current Transformer Input 50mA ac

Price Each

REG-24 1⁄32 DIN, REG-48 1⁄16 DIN and REG-96 1⁄8 DIN - continued

Zelio®/H23006

Voltage Type Outputs List No.

Supply Output No. Of Mftrs.

Price Per Each

<table>
<thead>
<tr>
<th>Description</th>
<th>Pack</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>Qty</th>
<th>Price Per Pack</th>
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<tr>
<td>Support for DIN rail</td>
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<td>197-38430</td>
<td>REG32P40DC</td>
<td>1+</td>
<td>10+</td>
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<td>REG49PCON</td>
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<td>197-38430</td>
<td>REG68PCON</td>
<td>1+</td>
<td>10+</td>
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</table>

Price Each

Mftrs. List No. | Order Code | Qty | 5+ | 10+ | 15+ |

1+ 5+ 10+ 15+

2132XH 722-9902

2116 722-9914

PID Control - ‘2300 Series’

1/32 DIN

H=25, W=49, D=100, Panel Cut-out 45x22.5

- Compact but large four digit LED display controller

- Universal input selection 1xTC, RTD, mA/mV dc

- Two outputs as standard (1xRelay, 1xSSR) for control and alarm functions

- Selectable ‘EASYTUNE’ or manual PID adjust with pre-tune

- Sealed front fascia IP66

- CE approved and UL Recognised

Price Each

Mftrs. List No. | Order Code | Qty | 5+ | 10+ | 15+ |

1+ 5+ 10+ 15+

2132XH 722-9902

2116 722-9914

Temperature Controllers

3216 Series - 48x48x90mm

3208 Series - 48x96x90mm

Available in two standard DIN sizes, the innovative 3200 controllers provide precise temperature control with a host of options. The front panel ‘ammeter’ on the 1/4 DIN size displays the heater current or output power demand.

In operation every parameter is accompanied by a scrolling text message describing its function.

The current transformer input provides display of the heater current and a health check on the load.

Partial load failure, heater open circuit and SSR (Solid state relay) short circuit are detected and displayed as alarming messages.

These instruments are suited to use in the plastics industry where input type J is the standard.

The inputs on the 3200 can easily be configured from the supplied ‘K’ to ‘J’.

The internal timer is configurable as an interval timer, delay timer or to provide ‘soft start’ for hot runner control.

Input types are configurable, and can be changed through the front panel.
**Simplified Temperature Controller**

**6500 Series - 1/16 DIN**

- Simplified operator interface
- Automatic self-tune process
- Outage lock
- Set-point lock
- Foolproof operation
- EasyTune (PID) or On/Off
- Temperature: -40°C to +150°C
- Accuracy: ±0.1% of input span (0.25% for J & T T/C)
- ±1 LSD (T/C CJC better than 0.7°C)
- Linear Outputs: 0-20mA, 4-20mA, 0-50mV, 10-50mV
- Thermocouple: 100 to 240VAC
- Relay Control
- Alarm N6500/Z2110 988-595

**Simplified Temperature Controller**

**6500 Series**

- 1/16 DIN controller with 3-digit display
- Easy-to-read display features an 11-segment display and large high visibility 3-digit display
- Fast 250ms sampling period
- Simplified programming
- Clearly visible digital display
- Available with relay or voltage output

**General Purpose Process Controller - 6100 Series**

- 1/16 DIN - On/Off or PID
- Multi-function programmable PID controller
- Universal input for 0/4-20mA, 0/5V, and 0/10V
- Broken sensor detection and loop failure alarm
- Select Relay or DC (4-20mA, 0-10V) for control output

**Temperature Controllers - Basic**

**ESGN Series - 48mm x 24mm (1/32 DIN)**

- Universal temperature sensor and analogue current/voltage input options
- Screw-less clamp terminal block contacts
- Auxiliary (relay) outputs that can be used for output alarms or processing results
- Additional terminal connections to achieve greater I/O options
- High Control Output Current rating (2A)
- Wide input temperature range of -200 to 600°C
- Outstanding indication accuracy (+0.2%) FS

**Temperature Controllers - ESCSV Series**

- Easy setting using DIP and rotary switches
- Multi input support for both thermocouple or PT100
- Clearly visible digital display
- Available for 100-240Vac or 24V dc supply
- Available with relay or voltage output

**ESCN Series Temperature Controller**

- 11 segment clearly readable LCD display
- 3 colour change display, green, red and orange
- 3 phase monitor
- The fast input sampling is 100ms for analogue and 250ms for temperature inputs
- Loop break alarm and sensor break alarm
- Simple 2 step programmer
- IP 66 rated front panel

---

**Power Supply**

- Display Colour: M = Magenta
- Order Code: 1+ 5+ 10+ 25+
- Price Each

**Input**

- Supply: 100-240VAC
- Voltage: 988-595

**Output**

- Relay Control
- Relay Alarm
- List No.: 988-595

---

**Temperature Input Models (Thermocouple, PT100 and mV)**

- Supply Voltage: 100 - 240Vac or 24V dc
- Controls: K, J, L, T, U, N, R, S
- Control Output: PT100, JPt100
- Alarm Output: SPST-N, 250Vac ac, 2A (Resistive)
- Ambient Temperature: -40 to +150°C

---

**I/O options**

- Optional output 2 - Relay or DC for heat/cool control or alarm
- Optional output 3 - alarm or recorder output
- Optional RS485 serial communications
- Optional digital input for remote selection of dual setpoint
- IP66/NEMA 4 plus full CE approved and UL recognised

---

**Price Each**

- 100 to 240Vac Relay E5CN-R2MT 500 100/240AC
- 100 to 240Vac Relay E5CN-Q2MT 500 100/240AC
- 24V ac/dc Temperature E5GN-C1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-Q1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-R1TD-C AC/DC24
- 24V ac/idc Temperature E5CN-T1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-C1T-C AC100-240
- 24V ac/dc Temperature E5GN-Q1T-C AC100-240
- 24V ac/dc Temperature E5GN-R1T-C AC100-240
- 24V ac/dc Temperatuure E5GN-Q1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-R1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-T1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-Q1T-C AC100-240
- 24V ac/dc Temperature E5GN-R1T-C AC100-240
- 24V ac/dc Temperature E5GN-T1T-C AC100-240
- 24V ac/dc Temperature E5GN-Q1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-R1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-T1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-Q1T-C AC100-240
- 24V ac/dc Temperature E5GN-R1T-C AC100-240
- 24V ac/dc Temperature E5GN-T1T-C AC100-240
- 24V ac/dc Temperature E5GN-Q1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-R1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-T1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-Q1T-C AC100-240
- 24V ac/dc Temperature E5GN-R1T-C AC100-240
- 24V ac/dc Temperature E5GN-T1T-C AC100-240
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- 24V ac/dc Temperature E5GN-R1T-C AC100-240
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- 24V ac/dc Temperature E5GN-R1T-C AC100-240
- 24V ac/dc Temperature E5GN-T1T-C AC100-240
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- 24V ac/dc Temperature E5GN-R1TD-C AC/DC24
- 24V ac/dc Temperature E5GN-T1TD-C AC/DC24
- Price Each
5.7 Inch Colour Touch Panel Screen

- Ease of use and single configuration software
- Push-button style mounting system
- Embedded Ethernet
- Multi-protocol RS232 / 485 RJ45 ports
- Optimum visibility
- Configurations: C-Tick, EU, UL and UL class 1 Div2 T4A on T5

Standards: EN 61131-2, FCC Class A, IEC 61000-6-2, UL 1604 and UL 508

Touch Panel Screen

- 2922

Process Meter

- Multi-range DC voltage/current input
- Front-panel key operation for easy setting
- Average processing function suppresses flicker
- Scaling, front-panel forced-zero, zero-limit functions
- Easy confirmation of max/min display
- Short 80-mm depth (measured from edge of face plate)
- Finger protective cover (standard equipment) guards against electric shock

- Water- and dust-proof NEMAX (IP66 equivalent) front panel
- Recognized to U.S. and Canadian requirements under the Component Recognition Program of UL with CE marking

Technical Data:

- Input: Supply Voltage 110...240V AC, 48...63Hz
- Outputs: 2 Relay Outputs (SPST-NO, SPDT-NO, 15 A load relay, 5 VDC)

- Accuracy: 0,1%

- Bezel Size: 100 x 76 mm

- Operating Temperature: 0°C to +50°C

Temperature Meter

- Wide input range - select from two types of platinum-resistance thermometers and ten types of thermocouples
- Front-panel key operation for easy setting
- Average processing function suppresses flicker
- Temperature input shift and temperature unit selection functions
- Easy confirmation of max/min display
- Short 80-mm depth (measured from edge of face plate)
- Finger protective cover (standard equipment) protects against electric shock

- Water- and dust-proof NEMAX (IP66 equivalent) front panel
- Recognized to U.S. and Canadian requirements under the Component Recognition Program of UL with CE marking

Technical Data:

- Input: Platinum-resistance Thermometer or Thermocouple
- Supply Voltage: 100 to 240VAC
- Outputs: 1 Relay Contact Output (SPDT)

- Bezel Size: 100 x 76 mm

- Operating Temperature: 0°C to +50°C

Digital temperature indicator, microprocessor-controlled, with 10A changeover (SPDT) relay, in 76mm x 36mm format

- Limit monitoring with 10A changeover (SPDT) relay
- Adjustable switching differential
- Configurable alarm suppression
- Symbols in display for temperature unit, minutes, seconds
- Parameter level protected by code
- Each parameter can be individually enabled for operation
- Easy mounting
- Panel mounting
- Electrical connection via screw terminals, 2.5mm² stranded wire or 4mm² solid wire
- UL and CUL approval applied for
- Programmable switch-on delay after power-on

Technical Data:

- Supply Voltage: 230VAC / 115VAC / 24VDC / 12VDC
- Output: Floating changeover contact (SPDT) 10A / 250V
- Accuracy: 0,1%
- Bezel Size: 100 x 76 mm
- Operating Temperature: 0°C to +55°C

Digital thermostat with LCD display for DIN rail mounting

- Configurable heating or cooling operation
- Adjustable switching differential
- Simple operation from 3 keys
- Mounting on DIN rail
- Dimensions: 90 x 22.5 x 60 mm
- Electrical connection by screw terminals
- Enclosure protection: IP20

Technical Data:

- Supply Voltage: 230VAC / 115VAC / 24VDC / 12VDC
- Accuracy: 0,1%
- Mounting: 35 x 75mm DIN rail to EN 50 022
- Operating Temperature: 0°C to +55°C

- UL and CUL approval

Digital panel meter with LCD display, for DIN rail mounting pop-up

- Configurable inputs and outputs
- Structured operating and programming layout
- Customized linearization adjustment
- Min/Max/hold function via external contact
- Easy-to-read display thanks to large LED (20 or 10mm)
- IP66 enclosure protection
- Levels can be inhibited to prevent unintentional alterations
- Configurable relay switch-on delay
- Two relay outputs and logic output 0/5V

Technical Data:

- Supply Voltage: 110...240V AC, 48...63Hz
- Outputs: 4-digital LED, red, 20mm high
- Bezel Size: 48 x 96mm
- Display: 4-digit LED, red, 10mm high
- Voltage: 5V/20mA
- Binary Input: Floating Contact

- Bezel Size: 24 x 48mm
- Display: 4-digit LED, red, 10mm high
- Voltage: 5V/20mA
- Binary Input: Floating Contact
Smart Panel Meter - K3GN

A panel meter that combines simplicity with versatility, the easy to use menu structure makes this controller suitable for simple applications while the advanced functions make it suitable for more complicated ones. Using the same display that was first developed for the ESN temperature controller, the K3GN offers a high visibility reverse LCD display that can be configured to change colour when the outputs are either activated or de-activated.

- Configurable analogue inputs: 4-20mA, 0-20mA, 1-5VDC, 0-5VDC, and 0 to +10 VDC. These are fully scalable so can be configured to represent a wide range of engineering inputs.
- Non voltage and open collector inputs suitable for sensors, encoders and pulse inputs from 0.05 to 30.00 Hz and 0.1 to 5000 Hz.
- All of the inputs are simple to scale by setting the lower and upper limits and what these are to represent the K3GN will automatically linearise these to the scale required.
- 24x48mm DIN/32 and panel depth of 80mm.
- 24VDC input voltage ±15% ±10%.
- Choice of either 2 relay (3A @250VAC or 30VDC) or 3 transistor outputs (choice of NPN or PNP), that can be configured to give a wide selection of levels including HH, HL, L, or (on each output). When using transistor outputs the 3rd output is for a fail safe output.
- Programmable display to change colour when activation or de-activation of outputs.
- Meets all current European noise and emissions regulations and the unit is CE marked.
- 1 Digit, Voltage and Current Indicator.

Supply voltage 24VDC

Universal/SMART Indicator

Universal Intelligent Panel Meter

Transfer Function Module Library

The DM3600 is an intelligent digital panel meter that can accept inputs from a wide variety of sensors and display the signal digitally. The DM3600 is available in two versions, AC supply or DC supply. All functions are programmable via the integral front panel keys.

- Universal Input
- 6 Digit Display
- IP65 Sealed Front
- Internal Power Supply for Loop Estimation
- Custom Software For Your Application Option (FRML)
- Programmable Via The Front Panel Or Remote PC
- User Non Linear Function For Tank Level Applications

Fluid Level Controls

Level Control Relay

- Nominal Supply Voltage 230 - 240VAC, 50/60Hz
- 24VDC
- Output
- Rated Current/Peak Current 16/30A
- Rated Voltage/Max Switching Voltage 250/400V ac
- Rated Load AC1 4000VA
- Rated Load AC15 (300V ac) 750W
- Single phase motor rating (230V ac) 180/3/12A
- Electrical life at rated load AC1 100,000 cycles
- Electrode Voltage 4V ac
- Electrode Current 0.2mA
- Ambient Temperature -20 to 60°C
- PG21 Protection Category

- Fail to safe emptying or filling functions
- Single or two point control
- Adjustable sensitivity
- Selectable time delay
- Reinforced insulation
- Low voltage on probes
- LED status indication
- Compact size, 35mm width
- 35mm rail mount
- cULus approval

Temperature Indicators

Thermocouple and Platinum Resistance

- Large 11.2mm 3½ digit LED display
- Standard 96x48mm DIN case
- Slimline design, depth behind panel only 63mm
- Quick-release plug-in rear terminals for supply and sensor
- Thermocouple instruments have automatic cold junction compensation

- Overall dimensions: H = 48, W = 96, D = 015mm Panel cut-out: 92 x 45mm
- Measuring range: K: -50°C to +700°C (90°F to 1360°F) 2 -50°C to +625°C (40°F to 1165°F) 1 -50°C to +300°C (0°F to 660°F) PT100: -200°C to +85°C
- Resolution: 0.1°C
- Accuracy: ±0.5% of reading ±1 digit
- Power supply: 8V ac/ ±15% 50/60Hz
- Note: PT100 instrument is suitable for installation with 2 or 4 wire sensor only.

- Large 11.2mm 3½ digit LED display
- Standard 96x48mm DIN case
- Slimline design, depth behind panel only 63mm
- Measuring range: K: -50°C to +700°C (90°F to 1360°F) 2 -50°C to +625°C (40°F to 1165°F) 1 -50°C to +300°C (0°F to 660°F) PT100: -200°C to +85°C
- Resolution: 0.1°C
- Accuracy: ±0.5% of reading ±1 digit
- Power supply: 8V ac/ ±15% 50/60Hz
- Note: PT100 instrument is suitable for installation with 2 or 4 wire sensor only.
**Fluid Level Controls - continued**

**Zelio - Liquid Level control Relay - continued**

**RM35L Series - continued**

- **Type P48LCR**
  - H = 88, W = 48, D = 75mm
  - 1 x SPDT relay output (Output 1) and 1 x SPNO relay output (Output 2 - Alarm)
  - DIN Rail mount
  - Conforms to IEC and CE

- **Type E-FLC3**
  - H = 85, W = 70, D = 63.5mm
  - 1 x SPDT relay output (Output 1) and 1 x SPNO relay output (Output 2 - Alarm)
  - DIN Rail mount
  - Conforms to IEC and CE

- **Miniature Controller - 61FGPN**
  - Space saving, conductive level controller
  - Designed for single or two point level control of conductive materials (liquid or solid)
  - Electrical connections are via a plug-in octal base
  - Operating voltage: 110VAC or 240VAC (-15%, +10%)
  - Electrode voltage: 8V ac
  - Output: Changeover relay 5A @ 240V ac/24V dc
  - Dielectric strength: 1500V ac 50/60Hz
  - Power consumption: 3.2VA max
  - Temperature range: -10°C to +55°C

- **Liquid Level Control**
  - Type P48LCR
  - PUMP UP or PUMP DOWN mode switch - Selectable
  - 1 or 2 Probe operation
  - Uses low voltage AC current across probes prevents electrolysis phenomenon
  - Adjustable sensitivity
  - Dual voltage
  - Output relay - SPDC 8A contact
  - 11 Pin Plug-in
  - Conforms to CE

- **Liquid Level Control**
  - Type E-FLC3
  - Designed to monitor the level of a liquid within a tank or container
  - 3 levels of monitoring - Low, High and Alarm levels
  - Fixed Operate and Release Resistance
  - Up to 1km distance between controller and probes
  - Built in Surge Arrestors protect each probe input against lightning strikes
  - Unique LED indication of probe/tank level status
  - Additional LED indication for supply and relay output status

- **Floatless Liquid Level Control**
  - Type E-FLC3
  - Designed to monitor the level of a liquid within a tank or container
  - 3 levels of monitoring - Low, High and Alarm levels
  - Fixed Operate and Release Resistance
  - Up to 1km distance between controller and probes
  - Built in Surge Arrestors protect each probe input against lightning strikes
  - Unique LED indication of probe/tank level status
  - Additional LED indication for supply and relay output status

**Valve Control Module**

**Weidmüller - Valve Control Modules**

**ACT29X**

- The ACT29X-SD-I/DO/2SD-I/3HDO valve control modules are controlled from the safe zone on the input side by the switching signals (NPN, PNP) and provide digital outputs to switch actuators (solenoids, alarms) in Ex Zone D.
- Depending on the module, the output current is limited for the ignition protection groups IIC/IIb to 35 mA or 60 mA (only one channel).
- Integrated alarm contacts issue an alert in the event of a malfunction which makes troubleshooting easier and increases the system availability.
- The rail mounted disconnect-switch amplifiers are optionally available in one- or two-channel versions.
- With 11 mm width per channel, the devices need little space in the electrical cabinet.

**Tachometer Relays**

**High Precision Tachometer Relay**

- **50 to 1,000 RPM**
  - Contact arrangement: SPDO
  - Contact rating: 5A @ 240V ac resistive
  - Supply voltage: 110V ac or 240V ac -50Hz (-15%, +10%)
  - Power consumption: <3VA
  - Sensing Range: 50 to 1000 RPM
  - Nominal output current: 5A
  - Operating range: -10°C to +55°C
  - Temperature range: -10°C to +55°C
  - Power consumption: <3VA
  - Sensing Range: 50 to 1000 RPM
  - Nominal output current: 5A
  - Operating range: -10°C to +55°C

**Speed Controller**

**Zelio - Speed control Relay**

- Operates with either N/O or N/C sensors
- The power on inhibition time is adjustable from 0.6 to 60 seconds
- Settings are protected by a sealable cover
- Monitors speed or rate of rotary or linear movements in conveyor belts, packaging and mechanical handling

**The first online technical portal for design engineers**

Log on, research, refine and design
Shaft Rotation Sensing Relay

**Rotation Sensing Relay**

An electronic relay that gives an output when the rotation of a machine shaft ceases. Inputs from a 3-wire inductive proximity sensor, determined by the speed of shaft rotation, resets a timer within the sensor and prevents the output contacts from energising.

**Contact arrangement**

SPCD

**Supply Voltage**

24VAC or 110VAC 50Hz

**Shaft rotation speed**

10000 rpm max.

**Power Consumption**

<4VA

**Dimensions (WxHxD)**

25x79x90.5mm

**Serial Data Converters**

**ILPH Range**

In the field of industrial data transmission, various processes of data transmission and interfaces are used today. Already existing systems need to be updated or connected to new devices for continuity of process. When new communication functions are not build-in, ABB propose a range of converters to be able to use from the standard RS232 or RS485, to the Ethernet open products or the Optical Fiber.

**Process Control, Timers & Counters**

**Automation**

**Frequency to Analogue Converter**

- Simple on-line range setting
- User settable full scale frequency from 1 Hz to 25 kHz
- Four output operating ranges
- Programmable input circuit accepts outputs from a variety of sensors
- Low frequency cut-out and overrange indication
- 3-way electrical isolation
- Universal mounting foot for Din Rail installation

**Serial Converter Module**

- Converter between RS232 control equipment and products with RS485
- Wide DC input power range (+9 - +32V dc)
- Half duplex (RS485) and full duplex (RS422)
- LED indication for RXD, TX and power
- Universal mounting foot for Din Rail installation

<table>
<thead>
<tr>
<th>Type</th>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
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<tbody>
<tr>
<td>Relay</td>
<td>FSRST 30SLP 110/240VAC</td>
<td>170-961</td>
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<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
</tr>
</tbody>
</table>

**Lighting Controller**

**NEW**

**Light Dependent Relays**

10 Series

- Integral light sensor with relays for automatic control of lighting according to ambient light level. For pole or wall mounting.
- Electronic circuit - transformer isolated
- Low frequency cut-out and overrange indication
- Programmable input circuit accepts outputs from a variety of sensors
- Light feedback compensation innovative principle
- 230V ac supply
- Compatible with slow starting gas discharge lamps (up to 10 minutes)
- For the first 3 working cycles the delay time is reduced to zero to aid installation

**Light Dependent Relays**

11 Series

- Relays for automatic control of lighting according to ambient light level, supplied with separate light sensor. For DIN Rail mounting.
- LED Status indication
- SELV separation between contact and supply circuit
- Double insulation between supply and light sensor
- 230V ac supply. 24V ac/dc model available
- For the first 3 working cycles the delay time is reduced to zero to aid installation

**Frequency Converter**

**NEW**

**Frequency to Analogue Converter**

- Simple on-line range setting
- User settable full scale frequency from 1 Hz to 25 kHz
- Four output operating ranges
- Programmable input circuit accepts outputs from a variety of sensors
- Low frequency cut-out and overrange indication
- 3-way electrical isolation
- Universal mounting foot for Din Rail installation

**Serial Converter Module**

- Converter between RS232 control equipment and products with RS485
- Wide DC input power range (+9 - +32V dc)
- Half duplex (RS485) and full duplex (RS422)
- LED indication for RXD, TX and power
- Universal mounting foot for Din Rail installation

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1CA0030</td>
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<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
</tr>
</tbody>
</table>

**Lighting Controller**

**NEW**

**Light Dependent Relays**

10 Series

- Integral light sensor with relays for automatic control of lighting according to ambient light level. For pole or wall mounting.
- Electronic circuit - transformer isolated
- Low frequency cut-out and overrange indication
- Programmable input circuit accepts outputs from a variety of sensors
- Light feedback compensation innovative principle
- 230V ac supply
- Compatible with slow starting gas discharge lamps (up to 10 minutes)
- For the first 3 working cycles the delay time is reduced to zero to aid installation

**Light Dependent Relays**

11 Series

- Relays for automatic control of lighting according to ambient light level, supplied with separate light sensor. For DIN Rail mounting.
- LED Status indication
- SELV separation between contact and supply circuit
- Double insulation between supply and light sensor
- 230V ac supply. 24V ac/dc model available
- For the first 3 working cycles the delay time is reduced to zero to aid installation

**Improvement Back Order Delivery**

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Zelio Control - Voltage Control Relays

- Supply frequency: 50/60 Hz ± 10%
- Output Current: 5 A
- Operating temperature: -20°C to +50°C
- Relative humidity: 95% at 55°C conforming to IEC 60068-2-30
- IP degree of protection: IP20 (terminals) conforming to IEC 60529
- Approval: CSA, C-Tick, GL, GOST and UL
- Electrical durability: 100,000 cycles
- Power consumption: RM17 JC: ≤ 0.6W

- Monitors both a.c. and d.c. voltages
- Monitors their own supply voltage, measured as a true rms value
- Protection of electronic or electromechanical devices against overvoltage and undervoltage
- Adjustable time delay prevents spurious triggering of the output relay
- Selection between overvoltage and undervoltage
- Fault signaling is by LED

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Measurement</th>
<th>Output Contacts</th>
<th>Mfrs. Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>110 to 240 V AC/DC</td>
<td>50 to 260 V</td>
<td>1 RM7UA715</td>
<td>205-63520</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>110 to 240 V AC/DC</td>
<td>50 to 260 V</td>
<td>1 RM7UA717</td>
<td>205-63640</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>24 to 240 V AC/DC</td>
<td>15 to 600 V</td>
<td>2 RM5UA13NM</td>
<td>205-63050</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
</tbody>
</table>

Zelio Control - Phase Control relays

- The relay monitors:
  - The correct sequence of phases L1, L2 and L3
  - Phase failure, including in the case of voltage regeneration
  - Undervoltage from - 2 to - 20% of the supply voltage
  - Overvoltage from 2 to 20% of the supply voltage
  - Asymmetry from 5 to 15% of the supply voltage
  - Monitors its own supply voltage, measured as a true rms value
- Control status is indicated by a LED

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Measurement</th>
<th>Output Contacts</th>
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<td>2 RM5UA13NM</td>
<td>205-63050</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
</tbody>
</table>

Phase Sequence Monitor CM-PVE

- The CM-PVE is used to monitor supply voltages for over- and under-voltage and phase failure. If all phases (and the neutral) are present with correct fixed threshold value or if a phase failure occurs, the tripping delay t₀ starts. When timing is complete, the output relay de-energizes. As soon as the voltage returns to the tolerance range, timing of t₀ starts. When timing is complete, the output relay re-energizes automatically. The yellow LED glows when the output relay is energized.

- Monitoring of three-phase and single-phase supply voltage for overvoltage, undervoltage and phase loss
- Neutral monitoring option
- No phase sequence monitoring

<table>
<thead>
<tr>
<th>Voltage Measurement</th>
<th>Output Contacts</th>
<th>Mfrs. Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 to 440 V AC/DC</td>
<td>1 RM7T7U02</td>
<td>205-63040</td>
<td>1 + 5 + 10 + 25 + 50</td>
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<tr>
<td>220 to 480 V AC/DC</td>
<td>2 RM5TF30</td>
<td>205-63050</td>
<td>1 + 5 + 10 + 25 + 50</td>
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<tr>
<td>220 to 480 V AC/DC</td>
<td>1 RM7T7U00</td>
<td>205-63030</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>220 to 480 V AC/DC</td>
<td>1 RM7T7U00</td>
<td>205-63040</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>220 to 480 V AC/DC</td>
<td>1 RM7T7U00</td>
<td>205-63050</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
</tbody>
</table>

**Light Dependent Relays - continued**

- Choice of action on the output relay
- Adjustable time delay prevents spurious triggering of the output relay
- Selection between overvoltage and undervoltage
- Fault signaling is by LED

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Measurement</th>
<th>Output Contacts</th>
<th>Mfrs. Code</th>
<th>Price Each</th>
</tr>
</thead>
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<td>205-63520</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>110 to 240 V AC/DC</td>
<td>50 to 260 V</td>
<td>1 RM7UA717</td>
<td>205-63640</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
<tr>
<td>24 to 240 V AC/DC</td>
<td>15 to 600 V</td>
<td>2 RM5UA13NM</td>
<td>205-63050</td>
<td>1 + 5 + 10 + 25 + 50</td>
</tr>
</tbody>
</table>
Phase Sequence Monitor CM-PFE

The CM-PFE is used to monitor three-phase mains for incorrect phase sequence and phase failure. If all phases are present with the correct phase sequence, the output relay energizes after the start-up delay $t_s$ is complete. If a phase failure or a phase sequence error occurs, the tripping delay $t_t$ starts. When timing is complete, the output relay de-energizes. The yellow LED glows when the output relay is energized.

In case of motors which continue running with only two phases, the CM-PFE detects phase failure if the reverse fed voltage is less than 60% of the originally applied voltage.

$H = 78, W = 22.5, D = 78.5\,\text{mm}$

- Rated supply voltage 110-130V ac
- Continuous voltage range covering 3 x 208-440V, 50/60Hz
- GOST Approved, UL Recognised

Sensing & Monitoring Relays

- Monitoring of voltage (1 and 3 phase), temperature and current
- Variable supply voltage by power module or wide range supply
- 2 changeover contacts
- Width: 22.5mm

1 and 3-phase monitoring Relays CM-PVE Series

The CM-PVE is used to monitor supply voltages for over and undervoltage and phase failure. If all phases (and the neutral) are present with correct voltage, the output relay energizes after the start-up delay $t_s$ is complete. If the voltage exceeds or falls below the fixed threshold value or if a phase failure occurs, the tripping delay $t_t$ starts. When timing is complete, the output relay de-energizes. As soon as the voltage returns to the tolerance range, timing of $t_t$ starts. When timing is complete, the output relay re-energizes automatically. The yellow LED glows when the output relay is energized.

$H = 78, W = 22.5, D = 78.5\,\text{mm}$

- Monitoring of single and three-phase mains for phase failure
- Device with possibility of neutral monitoring available
- Device with suitability for monitoring single-phase mains available

1-Phase Current Monitoring Relay SIEMENS

- Digital adjustable, with LCD display
- Display of actual value and status messages
- Monitoring of single-phase AC currents and DC currents against the set threshold value of overshoot and undershoot
- Screw connection
- Automatic/Manual RESET
- Monitoring the functionality of electrical loads

Rated Control Supply Voltage: 1AC22 24 V ac/dc, 50/60Hz 1AC23 24 to 240V ac/dc 50/60Hz

Tripping Delay, freely adjustable: 0.1 to 20s

Ohm-delay, freely adjustable: 0.1 to 20s

Contacts: 1 CO contact

Dimensions (WxHxD): 22.5x110x86mm

Sensing & Monitoring Relays

- Monitoring of voltage (1 and 3 phase), temperature and current
- Variable supply voltage by power module or wide range supply
- 2 changeover contacts
- Width: 22.5mm

Single-Phase Current Relay KBAB-AS Series

Monitor for overcurrents and undervoltages
Manual resetting and automatically resetting supported by one relay
Startup lock and operating time can be set separately
One SPDT output relay, 64 g 250V ac (resistive load)
Switch the output relay between normaly ON and normally OFF operation
Process control signal (4 to 20mA) and commercial CT input (0 to 1A or 0 to 5A) supported
Relay warning status easily monitoring using LED indicator
Easy wiring with ferrules, 2 x 2.5mm² solid or 2 x 1.5mm² standard ferrules
Ideal for current monitoring for industrial heaters and motors

Current Monitoring Relays

Electronic current monitoring relay that protects single-phase mains (DC or AC) from over- and undervoltages from 3 kA to 15 A

- Monitoring of DC and AC currents
- TRMS measuring principle
- Over- and undervoltages monitoring configurable
- Precise adjustment by front-face operating controls
- Monitoring classification UL 94 V-0
- Tool-free mounting on DIN rail as well as demounting
- 3 LEDs for status indication

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Current and Voltage Controls - continued

Current Monitoring Relays - continued

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>Price Each</th>
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<tr>
<td>1SVG730841R0300</td>
<td>210-2344 ●</td>
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<td>210-2352 ●</td>
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<tr>
<td>1SVG730840R0700</td>
<td>210-2353 ●</td>
</tr>
</tbody>
</table>

Isolating Signal Converter for Voltage/Current

- 3 way isolation for analog signals
- Voltage or current inputs and outputs selected via DIP switch selectable
- Small 6.2mm wide housing
- High 14 bit resolution
- Power supply over bus or terminal connection
- Universal mounting foot for DIN Rail installation

Input Ranges
- Voltage: 0-0.5V, 1-5V, 0-10V, 0-15V, 0-30V
- Current: 0-0.2mA, 0-0.1mA, 0-1mA, 0-2mA, 0-5mA, 0-10mA

Output Ranges
- Voltage: 0-5V, 1-5V, 0-10V, 0-100mA
- Current: 4-20mA, 0-20mA

Resolution
- Voltage: 1mV
- Current: 1mA

Accuracy
- ±0.1% transmission error

Operating Temp.
- -20 to 65°C

Isolation
- 1.5kV (50Hz, 1 min) over digital optocoupler

Power Supply
- 19.2 to 30V dc, 25mA Max.

Dimensions
- 6.2x93.1x102.5mm

Multi Voltage supply
- Automatically selects for AC or DC supply

3 Phase monitoring Relays

CM Series

ABB’s new generation of three-phase monitoring relays feature additional functions making the application field for the devices considerably larger.

- Adjustable phase unbalance threshold value
- Adjustable On-delay/Off-delay time
- Dual frequency measuring 50/60 Hz
- Powered by the measuring circuit
- LED status indication
- Phase loss monitoring
- Wide-range operating voltage guarantees world-wide operation

Order Code
- Price Each
- M3MCR 100-0075

Single Phase Current Relay

- Adjustable fault delay, 0.1 to 3 seconds
- Adjustable start up, delay, 0.1 to 10 seconds
- Normal or inverted operation selectable
- Adjustable hysteresis
- Latching possible

The unit monitors single phase current through a load and changes state when the adjustable trip level is exceeded. Once the current drops below this level, minus hysteresis, the relay changes state when the adjustable trip level is exceeded. Once the adjustable 'On Delay' time value allows motor start up currents to be ignored

Contact rating
- SPDT
- AC1 250V ac 10A
- DC1 24V dc 10A
- AC1 250V ac 6A

Monitoring range
- Y2: 5-150mA ac/dc
- Y3: 50mA to 1A AC/DC
- Y4: 500mA to 1A AC/DC
- Overload: 1.5A cont. or 5A for 1s
- Hysteresis: 5-50% of trip level

Power consumption
- 3VA max.

Supply Voltage
- 230 Vac 50/60Hz

Multifunction Current Relay - DIN Rail Mounting

- Detects under or over current condition (selectable)
- Automatically selects for AC or DC supply
- Multi Voltage supply
- Selectable monitoring range
- Selectable hysteresis
- Selectable time delay
- Selectable latching facility
- SPDT relay output (8A)
- LED indication of supply status
- LED indication of "fault" condition
- DIN Rail or surface mounting
- 35mm wide
- UL recognised and CUL approved

Dimensions (WxHxD)
- H=89, W=35, D=59

The first online technical portal for design engineers
Log on, research, refine and design
Voltage Monitoring Relays

Electronic voltage monitoring relay that provides reliable monitoring of voltages as well as detection of phase loss
- Monitoring of DC and AC voltages
- TRMS measuring principle
- One device includes 4 measuring ranges
- Over- or undervoltage monitoring configurable
- Precise adjustment by front-face operating controls
- Housing material for highest fire protection classification
- UL 94 V-0
- Tool-free mounting on DIN rail as well as demounting
- 3 LEDs for status indication

Phase Relay

- 17.5mm DIN rail housing
- True R.M.S.
- Microprocessor based (self checking)
- Monitors own supply and detects an under voltage condition on one or more phases
- Measures phase to phase voltages
- Detects incorrect phase sequence and phase loss
- Fixed under voltage trip level
- Fixed time delay
- 1 x SPDT relay output 8A
- Intelligent LED indication for supply and relay status

Battery Voltage Alarm Relay

- Monitors own DC supply
- Detects under voltage condition
- Wide supply and monitoring range
- Adjustable time delay (from fault)
- SPDT relay output (8A)
- LED indication of supply and relay status
- DIN Rail or surface mounting
- 17.5mm wide

Phase Failure Relay

Phase Sequence, Under and Over Voltage plus Time Delay

- Monitor own supply and detects if one or more phases exceed the set Under or Over Voltage trip levels
- 3 Wire versions measure phase to phase voltage and 4 Wire versions measures phase to neutral voltage
- Detects incorrect phase sequence, phase loss and neutral loss (4-Wire only)
- Adjustments for under and over voltage trip level
- Adjustment for time delay (from under or over voltage condition)
- 1 x SPDT relay output 8A - 17.5mm DIN Rail housing models
- 1 x DPDT relay output 8A - 35mm DIN Rail housing models
- Intelligent LED indication for supply and relay status
- Terminal protection to IP20
- Conforms to IEC and CE

Earth Leakage Relay

Type A - Variable

- Monitors and detects true RMS earth fault currents up to 30A
- LED Bar graph provides constant indication of any leakage current
- Microprocessor controlled with constant internal monitoring
- Adjustable Sensitivity - 30mA to 30A
- Adjustable Time Delay - 0 to 10sec
- Separate Test and Reset push buttons

<table>
<thead>
<tr>
<th>Supply Voltage Max</th>
<th>Power Consumption</th>
<th>Contact Configuration</th>
<th>Supply Current</th>
</tr>
</thead>
<tbody>
<tr>
<td>240V</td>
<td>750mW</td>
<td>SPDT</td>
<td>1SVR730760R400</td>
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<tr>
<td>240V</td>
<td>750mW</td>
<td>SPDT</td>
<td>1SVR730830R300</td>
</tr>
<tr>
<td>240V</td>
<td>2.6V</td>
<td>SPDT</td>
<td>1SVR730881R1300</td>
</tr>
<tr>
<td>240V</td>
<td>750mW</td>
<td>DPDT</td>
<td>1SVR730830R400</td>
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<tr>
<td>130VAC</td>
<td>2.6V</td>
<td>DPDT</td>
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<tr>
<td>240VAC</td>
<td>2.6V</td>
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<td>750mW</td>
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<td>1SVR730760R400</td>
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Mftrs. List No. | Order Code | Price Each |
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</table>

H = 89, W = 17.5, D = 59

Phase Failure/Loss Relay

Incorrect Phase Sequence / Rotation

- 17.5mm DIN Rail housing
- 1 x CO relay output 10A
- Conforms to UL, CUL, CSA, IEC and CE

Mftrs. List No. | Order Code | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</table>

H = 78, W = 45 D = 99mm

Price Each

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 5+ 10+</td>
</tr>
</tbody>
</table>

Earth Leakage Relay

Type A - Variable

- Monitors and detects true RMS earth fault currents up to 30A
- LED Bar graph provides constant indication of any leakage current
- Microprocessor controlled with constant internal monitoring
- Adjustable Sensitivity - 30mA to 30A
- Adjustable Time Delay - 0 to 10sec
- Separate Test and Reset push buttons

Mftrs. List No. | Order Code | Price Each |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>45095</td>
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<tr>
<td>45080</td>
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</tr>
</tbody>
</table>

H = 48, W = 48, D = 76mm

Price Each

<table>
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<tbody>
<tr>
<td>1+ 5+ 10+</td>
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</table>
**Current and Voltage Controls - continued**

**Earth Leakage Relay - continued**

<table>
<thead>
<tr>
<th>Type</th>
<th>Variable</th>
<th>continued</th>
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</thead>
<tbody>
<tr>
<td>Connection facility for remote Test and Reset push buttons</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toroid open circuit detection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Relay outputs - Standard Output and Positive Safety Output</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LED indication of Supply status and fault condition after unit has tripped</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Phase Sequence / Failure Relay plus Time Delay**

- Monitor three phase supply for phase loss, neutral loss (4 wire version), under voltage and incorrect phase sequence.
- Time delay adjustable from 0.2 to 10 seconds to avoid nuisance tripping.
- LED indication of supply - extinguished at failure and power loss.

Voltage range: 300V ac to 500V ac
Power consumption: 4VA max per phase
Impulse withstand voltage: 4kV (1.2/50μS)
Contact rating: 1.5A 250V ac
Under (fixed): 70% of Un
Over (adjustable): 105 - 115% of Un
Hysteresis: 2% (factory set)
Time delay: 0.2 - 10s (x 5%) from under or over voltage condition
Note: Time delay is cancelled and relay de-energises if supply is allowed to fall below the fixed trip level.
100ms - from loss of supply,
1s - from application of power (on delay)

**Monitoring Relay**

**1-Phase, AC Over Current**

- 2-Wire connection
- Self powered
- 2 - 20A ac Input range
- Adjustable set-point
- Normally open, 100mA output
- LED indication of output status
- DIN Rail mounting in accordance with DIN / EN 50022
- 17.5mm DIN-Rail housing (DIN 43880)

**Monitoring Relay DC Under Voltage**

- Measures if power supply is below the set level
- Measures on own power supply
- Measuring ranges: 0-230V dc
- Adjustable hysteresis: 4 to 50%
- Output: 5A SPDT relay
- For mounting on DIN rail in accordance with DIN EN 50 022
- 17.5mm DIN-Rail housing (DIN 43880)
- LED indication for relay and power supply ON
- Dimensions: W=17.5mm H=81.5mm D=67mm

**Troubleshooting Tips**

Chat online to one of our technical engineers at farnell.com
Temperature Control Relays

Temperature Monitor Relay
KA8B-TH
- Excessive temperature increases can be prevented and abnormal temperature can be monitored.
- Temperature monitoring in slim design with a width of just 22.5mm
- Multi input support for both thermocouple or PT100
- Multi-input support for thermocouple or PT100 sensor input
- Selectable output relay: Non-fail safe/fail safe
- Alarm status identification with LED indicator

<table>
<thead>
<tr>
<th>Input Temperature Type</th>
<th>Setting Range</th>
<th>Supply Unit</th>
<th>Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0°C to +399°C/C</td>
<td>1°C/C</td>
<td>100 to 240VAC</td>
<td>KA8B-TH11S AC100-240</td>
<td>134-3840</td>
<td></td>
</tr>
<tr>
<td>0°C to +1700°C/C</td>
<td>10°C/C</td>
<td>100 to 240VAC</td>
<td>KA8B-TH12S AC100-240</td>
<td>134-3843</td>
<td></td>
</tr>
</tbody>
</table>

Motor Protection Relay - Thermistor
CM-MSE
This relay operates with a rated control supply voltage of 110-130 V AC and has a 0/5 V output contact rated at 250 V / 4 A. It features one sensor circuit for monitoring of PTC temperature sensors or bimetal. The relay offers automatic reset and works according to the closed-circuit principle. The CM-MSE thermistor motor protection relay is used to control motors equipped with PTC temperature sensors. The PTC temperature sensors are incorporated in the motor windings to measure the motor heating. This enables direct control and evaluation of the following operating conditions:

- Heavy duty starting
- Increased switching frequency
- Single-phase operation
- High ambient temperature

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>15SV55000R8930</td>
<td>109-5997</td>
</tr>
</tbody>
</table>

Isolating Signal Converter for PT100/PT1000
WACHENDORFF
- 3 way isolation of PT100 or PT1000 resistant thermometers
- Connection by 2, 3 or 4 wire technique
- Outputs selected via DIP switch settings
- Small 6.2mm wide housing

<table>
<thead>
<tr>
<th>Input Ranges</th>
<th>Output Ranges</th>
<th>Accuracy</th>
<th>Operating Temperature</th>
<th>Power Supply</th>
<th>Dimensions (WxHxD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT100: Range -150 to 650°C, minimum span 50°C</td>
<td>-50°C to 20°C, minimum span 30°C</td>
<td>±0.1% transmission error max.</td>
<td>-20 to 65°C</td>
<td>19.2 to 30V dc, 25mA Max.</td>
<td>6.2x93.1x102.5mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>292100000R8000</td>
<td>533095</td>
</tr>
</tbody>
</table>

Isolating Signal Converter for Thermocouples
WACHENDORFF
- Thermocouples type S, T, J, N, K, E, R and B
- Settable alarm threshold/hysteresis
- Outputs selected via DIP switch settings
- Small 6.2mm wide housing
- High 14 bit resolution
- Power supply over bus or terminal connection
- Universal mounting foot for Din Rail installation

<table>
<thead>
<tr>
<th>Input Ranges</th>
<th>Output Ranges</th>
<th>Accuracy</th>
<th>Operating Temperature</th>
<th>Power Supply</th>
<th>Dimensions (WxHxD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermocouples</td>
<td>0-10V dc</td>
<td>±0.1% transmission error max.</td>
<td>-20 to 65°C</td>
<td>19.2 to 30V dc, 25mA Max.</td>
<td>6.2x93.1x102.5mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>292100000R8000</td>
<td>533095</td>
</tr>
</tbody>
</table>

Temperature Transmitter
2 Wire - DIN Rail Mount

- Temperature sensor inputs
- 2 Wire (4-20mA) output
- Simple push button configuration
- Advanced user configuration with 56 pre-set temperature ranges
- User push button trim
- Programmable burnout

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>PT100</td>
<td>SEM132P</td>
<td>170-880600</td>
</tr>
<tr>
<td>Thermocouple</td>
<td>SEM131TC</td>
<td>170-880700</td>
</tr>
</tbody>
</table>

Thermostat Relay

- Thermostat relay for 2/3 wire Pt-100 probe
- -50°C to 300°C in two ranges
- Adjustable setpoints and hysteresis on the front panel
- Inversion (inv) of relay operation on connection of jumper
- LED indication on probe failure
- Analog output for setpoints and measured temperature

<table>
<thead>
<tr>
<th>Input Signal</th>
<th>Output Signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>-50°C to 300°C</td>
<td>-50°C to 200°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>230VAC/24V ac</td>
<td>MKT-10.230</td>
<td>723-3670</td>
</tr>
</tbody>
</table>

Universal Signal Conditioner Programmable Output - DIN Rail Mount

This new generation of signal conditioner has been designed to accept most common process and temperature sensor inputs and provide the user with a programmable current or voltage output signal plus dual relays with a programmable delay function. 3 way isolation is provided and all temperature ranges are linear to temperature. Both input and output loop excitation is provided as well as a fully universal power supply.

A USB interface is fitted for quick and easy configuration. Connect a standard USB cable between the device and a PC and using the configuration software the PC will automatically upload the existing configuration data and then guide the user through any changes that are required. No external power for the device is required during this process as the power is supplied via the PC USB interface.

- Universal AC DC power supply, 3 port isolation
- User Trim and User Configuration push buttons

<table>
<thead>
<tr>
<th>Input Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>RTD, T/C, Potentiometer, Current or Voltage</td>
<td>SEM700</td>
<td>170-880800</td>
</tr>
<tr>
<td>USB Cable</td>
<td>88732-8602</td>
<td>122-10710</td>
</tr>
</tbody>
</table>

This page also contains technical specifications and ordering information for other products such as signal converters, isolating modules, and universal signal conditioners, along with product images and descriptions. The text is formatted in a clear and organized manner, making it easy to read and understand.
**Temperature Control Relays - continued**

**Universal Transmitter**
Current or Voltage Output - DIN Rail Mount

- Process and Temperature Sensor Inputs
- 2 Wire (4 - 20mA) output and 3 Wire (Programmable) output versions
- Simple push button configuration
- Advanced user configuration with 56 pre-set temperature ranges
- USB Configuration port
- User push button trim
- Programmable burnout

- 100mm: 186-6740
- 150mm: 186-6750

**Accessories**
- USB Powered Configurator Kit: 186-6766

**Universal Temperature Transmitter**
SEM710 with Display

- Simple configuration via USB port
- Isolated PT100, thermocouple input
- Display - Temperature in °C / °F or Output Drive in mA
- Push-button user trim
- (4 to 20) mA two wire output
- 24V dc supply voltage

- H = 21.5, Dia.(overall) = 74.8, Dia. = 66.25mm

The SEM710 is a head mounted temperature transmitter with display feature. It has been designed to accept most common temperature sensor inputs and provide the user with a standard two wire (4 to 20) mA output signal. Isolation is provided between input and output and all temperature ranges are linear to temperature. The addition of a display provides the user with instant information of the loop condition at the point of measurement. Designed for ease of use, the latest USB interface is fitted for quick and easy configuration. Just connect a standard USB cable between the SEM710 and a PC. Using the free configuration software, the PC will automatically upload the existing configuration data and guide the user through any changes required. To further help save time, the SEM710 does not need to be wired to a power supply during the configuration process, it is powered via the USB interface from the PC.

**DIN Rail Temperature Transmitter**
SEM1603 Series

- Configured by using the USB Port Powered Configurator
- 100 or Thermocouple / mV
- Isolated input
- Input linear to temperature
- (4 to 20) mA two wire output
- 24V dc powered

- H = 90, W = 17.5, D = 56.4mm

The SEM1603 series is a DIN rail mounted temperature transmitter from Status Instruments. The range consists of two versions, the SEM1603P accepts PT100 inputs, the SEM1603TC accepts seven common thermocouple types plus mV input. Designed for ease of use, this range is configured with the USB port powered configuration module. The module interfaces a PC USB port to the SEM1603, using the (4 to 20) mA loop to communicate. Using the free configuration software, you will be able to read the current configuration data, and then perform any changes you wish to make to the configuration. To further help save time, the SEM1603 and configuration module do not need to be wired to a power supply during the configuration process, both are powered by the USB interface on the PC.

**SMART Head Temperature Transmitter**
HTR201 Series

- MAA Type aluminium head with integral transmitter
- Light weight and robust design
- 52mm Swing diameter
- RTD, Slide Wire or Resistance inputs
- User linearity
- PC Programmable
- (4 to 20) mA Output
- 8 to 30V dc Supply

- H = 52, W = 60, D = 48.8mm

The HTR200 is a cost effective SMART transmitter integrated into an MAA type connection head that accepts resistance signals including RTD sensors and converts them to a standard industrial (4 to 20) mA transmission signal over a user programmed range. There are two versions available with either a 100mm or a 150mm probe fitted. Its small size (52mm swing diameter), allows for installations where space is critical. Temperature probes are sold separately and style 1 and 2 are the most popular with this product. A flexible approach has been taken with this design in that, the standard product will accept over 30 resistance sensors, including PT100, P5050 PT1000, N100, N1000 and variable resistance. The design also allows for custom sensors to be accommodated. It is also possible to generate your own linearisation curve for resistance or slide wire inputs. PC configuration allows the user to select Sensor type, Range, Units and error signal without requiring calibration equipment. Configuration is performed quickly using our USB port driven configurator by simply connecting two clips to the HTR200 loop terminals and following the software instructions. Additionally, the user may read live process data when connected to the PC, allowing for sensor offset calibration, where the user can enter an offset value to correct for any sensor offset.

---

**Farnell**
Date: 06-09-12 time:21:43
The WX700 series in head temperature transmitter is a new generation of wireless temperature measurement solutions from Status Instruments. It has been designed to accept most common temperature sensors including those from RTD and thermocouple sensors as well as slidewire and mV signals. The measured value is transmitted to the DIN Rail mounted base station (WXRX800), this can accept signals from up to 16 WX700 transmitters. A 3.6 V Lithium battery is provided for the transmitter power supply and is fitted in a specially designed antenna housing which screws into the cable entry of the connecting head. The connecting head is supplied with the product and can be sensor mounted. This is particularly useful when used with a flying lead sensor such as our style 4 sensor type and allows for a wider range of applications. The measured signal is transmitted on the ISM band (Industrial Scientific and Medical Band) of 868.4 MHz. This frequency is virtually insensitive to external interferences and allows transmission even in a harsh industrial environment. The maximum open air range is 300 m. Configuration is carried out by using the Wireless Configuration kit. This allows configuration of all parameters including transmitter address, transmission interval, sensor type etc.

### Energy - Meter

#### Energy E2+ Energy Monitoring Meter Wireless

- **Display** - H = 185, W = 185, D = 24mm

The Energi E2+ Elink wireless electricity display device is a wireless energy meter that displays at a glance how much electricity your equipment is using. Elink technology allows data to be transferred to your computer to help you spot money saving opportunities and to assist with the reduction of carbon footprints. You can view instant, average and historical information (daily, weekly and monthly totals are stored in the memory) on the portable display unit. Download stored data to your PC for more detailed analysis and see your energy use clearly displayed in bar charts and line graphs.

Radiated frequency 433.52MHz with a range of 40 to 70m depending on the environment. The maximum open air range is 300 m. Configuration is carried out by using the Wireless Configuration kit. This allows configuration of all parameters including transmitter address, transmission interval, sensor type etc.

### 3-Phase Energy Management Meter

#### Type EM21 72D - Removable Display Unit

Three-phase energy meter with removable front LCD display unit. The same unit can be used either as a DIN-Rail mounting or a panel mounting energy meter. This general purpose three-phase energy meter is suitable for both active and reactive energy metering for cost allocation but also for main electrical parameter measurement and retransmission (transducer function). Housing for DIN-Rail mounting with IP50

#### Type EM24 DIN - Energy Analyser

Three-phase energy analyser with built-in configuration joystick and LCD data displaying; particularly indicated for active and reactive energy metering and for cost allocation. Housing for DIN-Rail mounting with IP50 (front) protection degree. Direct connection up to 65A and by means of external current and potential transformers. The analyzer can be provided with digital outputs that can be either for pulse proportional to the active and reactive energy being measured or for alarm outputs. In alternative the RS485 communication port and 3 digital inputs or Dupline port and 3 digital inputs are available as an option.

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-Phase Energy Management Meter</td>
<td>1+</td>
</tr>
<tr>
<td>Type EM21 72D</td>
<td>2-725</td>
</tr>
</tbody>
</table>
Process Relays

**Thermostat Relay**
- Function: Multifunction timer for 1+ 5+ 10+ 25 MHz ramps
- Temperature range: 0.5-20%
- Power supply: 18V dc to 30V dc
- Dimensions: H = 99, W = 12.5, D = 114.5mm

**Threshold Relays**
- Function: Programmed using membrane keypad
- Suitable for Class 1 Division 2, Groups A, B, C and D Hazardous locations
- Dimensions: H = 80, D = 104, W = 22.5mm

**Process Signal Converter**
- Function: Programmable using membrane keypad
- Dimensions: H = 80, D = 104, W = 22.5mm

**Process Timer**
- Function: Multifunction timer with 5 functions and 4 time ranges
- Dimensions: H = 80, D = 104, W = 22.5mm

**Analogue Signal Conditioners**

**3 Way Isolating Amplifier - Single Channel**
- Function: Single channel current signals 0(4) to 20 mA
- Dimensions: H = 99, W = 12.5, D = 114.5mm

**Programmable Universal Frequency Transducer**
- Function: 3-Way Isolated
- Dimensions: H = 75, W = 45, D = 110mm

The frequency transducer module accepts frequencies between 0.1 Hz and 120 kHz. The input frequency can be easily selected within this range and displayed on the front face of the module. All common frequency signals (2, 3 and 4 wire) can be accepted at the input. The input options are as follows: NAMUR sensors, Frequency generators, Dry contacts and Incremental encoder signals. In addition to the analog output a transistor switching output (for alarm processing) is available. The input frequencies (lower and upper range) can be programmed via a ladder diagram. Analog voltage and current inputs can also be converted and isolated. The module input and output are supplied via integrated DC/DC converters which are electrically isolated from the mains. The LC display can show both input and output measurement values.
This module is used to multiply and electrically isolate analog signals. The inputs, outputs and power supply are electrically isolated from one another (4-Way isolation). This enables the unit to be used for electrical isolation, signal conversion and amplification both locally and close to the control system. The auxiliary voltage required is indicated by a green power LED.

DIP switches can be used to switch between a signal a signal selected within the limits of the order key or the for the fixed signal conversions. DIP switches can be used to switch between a signal a signal selected within the limits of the order key or the for the fixed signal conversions. 

The transmission cut-off frequency can be set, depending on application, as either 10 kHz or as a \( \leq 10 \) Hz / 10 kHz.

The voltage transducer measures DC voltages in ranges from 0 - 10V to 0 - 660V and converts them to standardized analog signals. DC voltages with both negative and positive polarity can be processed.

The input voltage ranges listed at the input terminal block can be varied by \( \pm 20\% \) using a calibrated potentiometer. The transducer is calibrated by default to 0 to \( \pm 240 \) input and 0 to \( \pm 10 \) output and is ready for operation when delivered. To use the device with other input or output variables, carry out a ZERO / SPAN adjustment using the potentiometer on the front.
Analogue Signal Conditioners - continued

3-way Isolating Amplifier

Standard Analog Input and Output Signals
- DIN Rail mount
- Suitable for Class 1 Division 2, Groups A, B, C and D Hazardous locations
- Also suitable for non-hazardous applications
- M3 screw terminals - Solid/flexible wires 0.2 - 2.5mm
- Supply voltage 19.2V dc to 30V dc
- CE Approved, UL Recognised

The 3-way Isolating Amplifier is used to electrically isolate, condition and amplify standard normalized analog signals.

H = 93.1, W = 6.2, D = 102.5mm

Price Each

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINI NCR-SL-U-U</td>
<td>170-620800</td>
<td>1+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3-way Isolating Amplifier

Configurable

- DIN Rail mount
- Suitable for Class 1 Division 2, Groups A, B, C and D Hazardous locations
- Also suitable for non-hazardous applications
- M3 screw terminals - Solid/flexible wires 0.2 - 2.5mm
- Supply voltage 19.2V dc to 30V dc
- CE Approved, UL Recognised

The 3-way Isolator is a configurable amplifier used to electrically isolate, condition, amplify and filter analog signals. DIP switches are accessible on the side of the unit and are used to configure the input and output signal ranges.

H = 93.1, W = 6.2, D = 102.5mm

Price Each

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>MINI NCR-SL-U-U-NC</td>
<td>170-620700</td>
<td>1+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signal Converter - PT100 RTD

MAS PT100 0 to 100°C

- The MAS/MAZ PT100 signal isolating converters are built into a compact 6.1 mm MICROSERIES housing
- 2/3-wire PT100 sensors can be connected on the input side
- Calibrated DC current/voltage signals are available on the output and can be selected using DIP switches
- The signal isolating converters are designed with a two-way isolation of 0.5 kV between the input and output
- The 24 VDC power is supplied over the output circuit
- International approvals (such as ATEX Zone 2 and cULus, IEC 584 type K or J)

H = 97.8, W = 6.1, D = 88mm

Price Each

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>8548200000</td>
<td>207-073490</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
</tbody>
</table>

Signal Converter - Thermocouple

J & K Thermocouples

- The MAS/MAZ PT100 signal isolating converters are built into a compact 6.1 mm MICROSERIES housing
- Conventional thermocouples can be connected to the input side, in accordance with IEC 584 type K or J
- Calibrated DC current/voltage signals are available on the output and can be selected using DIP switches
- The signal isolating converters are designed with a two-way isolation of 0.5 kV between the input and output
- The 24 VDC power is supplied over the output circuit
- International approvals (such as ATEX Zone 2 and cULus, IEC 584 type K or J)

H = 97.8, W = 6.1, D = 88mm

Price Each

<table>
<thead>
<tr>
<th>Thermocouple Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>J &amp; K</td>
<td>8615210000</td>
<td>207-073490</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
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<tr>
<td></td>
<td>8639480000</td>
<td>207-074490</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
</tbody>
</table>

Signal Converter / Supply Isolator

ACT20M-CI

- Externally supplied ACT20M-CI-CO signal converters/supply isolators can transmit, isolate and convert normalized DC current signals
- Input and output circuits are completely electrically isolated, as is the power supply.
- Input signal is converted into a DC current/voltage value
- 24 VDC supply voltage can be cross-connected on the module side via the CH20M BUS profile
- International approvals (such as ATEX Zone 2, UL C1D2 and FM Div2) permit use in explosion-risk zones

H = 112.5, W = 6.1, D = 114.3mm

Price Each

<table>
<thead>
<tr>
<th>Number of Outputs</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1175989000</td>
<td>207-074390</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
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<td>2</td>
<td>1175999000</td>
<td>207-074690</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
</tbody>
</table>

Signal Converter / Supply Isolator

ACT20M-AI

- ACT20M-AI-AO universal U/I- DC converter/supply isolator and ACT20M-AI-2AO signal multiplier
- External power supply for transmitting and isolating analogue DC current and voltage signals.
- The input and output parameters can be configured as required using the DIP switches
- The input/output channel(s) and power supply have 2.5 kV of electrical isolation
- The universal ACT20M-AI-AO-S supply isolator can feed power directly from the input loop signal to passive sensors
- The ACT20M-AI-2AO-SD 4-way isolation is designed as a signal splitter
- The input signal is doubled on the output side
- It can be transmitted simultaneously to a controller and an external display
- International approvals (cULus, ATEX Zone2, FM Div2, GL, DNV)
- The power supply can be easily and quickly installed using the CH20M DIN rail bus. The power can be supplied using any ACT20M module (up to 20 devices) or a separate ACT20 supply module (up to 200 devices)

H = 112.5, W = 6.1, D = 114.3mm

Price Each

<table>
<thead>
<tr>
<th>Number of Outputs</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Version</td>
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<td>207-074590</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
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<td>ATEX Versions</td>
<td>1176009000</td>
<td>207-074640</td>
<td>1+</td>
<td>5+</td>
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<td></td>
<td>1176020000</td>
<td>207-074740</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
</tbody>
</table>

Isolating Switch Amplifiers

ACT20X

- ACT20X isolating switch amplifiers are specially designed for recording NAMUR sensor signals and digital switching signals which originate from the Ex zone 0
- The rail mounted disconnect-switch amplifiers are optionally available in one- or two-channel versions. With 11 mm width per channel, the devices need little space in the electrical cabinet
- Relay or transistor outputs are used to transmit the signals to the safety zone
- Integrated alarm contacts issue an alert in the event of a malfunction which makes troubleshooting easier and increases the system availability

H = 113.6 W = 22.5, D = 119.2mm

Price Each

<table>
<thead>
<tr>
<th>Number of Channels</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
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</thead>
<tbody>
<tr>
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<td>5+</td>
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<td>8965370000</td>
<td>207-075190</td>
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<td>10+</td>
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<td>NC Relay Output</td>
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<td>5+</td>
<td>10+</td>
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<tr>
<td></td>
<td>8965380000</td>
<td>207-075290</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
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<td>NPN Transistor Output</td>
<td>8965360000</td>
<td>207-075090</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
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<td>8965390000</td>
<td>207-075490</td>
<td>1+</td>
<td>5+</td>
<td>10+</td>
</tr>
</tbody>
</table>

Accessories

USB Interface 8978580000

Price Each

|                | 8978580000 | 207-075190 | 1+ | 5+ | 10+ |

farnell.com
Temperature Transducers

**ACT20X**

- The ACT20X-HTI-SA0 / 2HTI-2SA0 temperature transducers record temperatures from PT100 sensors and thermocouples from Ex Zone 0 area.
- Current loops from 0(4) to 20 mA can also be connected on the input side.
- The output is an active and passive current loop available for the safe area.
- Integrated alarm contacts issue an alert in the event of a malfunction, making troubleshooting easier and increases the system availability.
- The rail-mounted current output isolators are optionally available in one- or two-channel versions.
- With 11 mm width per channel, the devices need little space in the electrical cabinet.

**Universal Measurement & Signal Isolating Converters**

**ACT20X-HUI-SA0-S**

- Universal measurement and signal isolating converters can be configured individually.
- Temperature signals from PT100 sensors and thermocouples as well as analogue DC current and voltage signals can be recorded from the Ex Zone 0.
- On the output side, optional current/voltage or 20 mA current loop signals are provided for the safe zone.
- The ACT20X-HUI-SA0-S also has a relay output for configuring its switching threshold.
- An integrated alarm contact is available on this device for issuing an alert in the event of a malfunction which makes troubleshooting easier and also increases system availability.
- The power supply of the signal isolating converter is either done using the integrated power supply.
- The rail-mountable devices are designed with one channel and available in 22.5mm width.

**Signal Converter - Temperature and Voltage**

**ACT20M-UI-AO-S**

- Universal signal isolating converter.
- For recording, isolating and converting analogue current/voltage signals and 2/3/4-wire PT100 or TC temperature sensors.
- The 3-way electrical isolation of 2.5 kV and an accuracy of up to 0.05% both help to ensure a high degree of process reliability.
- International approvals (cULus, ATEX Zone2, FM Div2, GL, DNV).
- External 24VDC power supply is simply snapped onto the rail-mounted current output isolators.
- Integrated alarm contacts issue an alert in the event of a malfunction which makes troubleshooting easier and also increases system availability.
- Current loops from 0(4) to 20 mA can also be connected on the input side.
- The rail-mounted current output isolators are optionally available in one- or two-channel versions.
- With 11 mm width per channel, the devices need little space in the electrical cabinet.

**USB Interface for Signal Converters**

**CBX200 USB**

The CBX 100/CBX 200 USB interfaces for PC-based configuring and calibrating of the ITXPlus universal signal isolating converters, WAVE TTA and the ACT20 series. The CBX 100/200 USB interface converters have a status LED to display the transmit/receive mode. The driver software is available for download.
Limit Value Switch

**MINI MCR-SL-UI-REL**

The DIN switches located on the side of the housing have the following functions:

- **Configuration of the switching hysteresis**
- **Configuration of the operating and closed circuit current behavior**
- **Setting of relay pickup times**
- **Setting of dropout delay**

This 6.2 mm wide configurable 3-way threshold value switch is used to control and monitor analogue standard signals. On the input side, the analogue standards signals 0 to 20 mA or 0 to 10 V per DIN switch can be set. On the output side, a relay with SPD PT contact is available. The switching thresholds are set via potentiometer.

The relay status is indicated by a yellow LED on the front of the housing. Power (19.2 V dc to 30 V dc) can be supplied through connection terminal blocks on the modules or in conjunction with the DIN rail connector.

### Input
- 0(4)/2 to 20 mA, 0 to 10 V
- Operating Temperature: -20°C to 65°C

### Output
- SPST Relay - 250 V ac @ 2A
- Approvals: ATEX, CE, GL, UL Recognised

### Price Each

<table>
<thead>
<tr>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>1</th>
<th>5</th>
<th>10</th>
<th>25</th>
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<td>898-5298</td>
<td>898-5298</td>
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<td></td>
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</table>

---

**Isolation Units - ATEX**

**DIN Rail Mounting**

- Compact modular design
- DIN Rail mounting
- Full input / output / power supply isolation
- Broken line and earth fault protection
- Simple installation and maintenance using plug-in connectors
- No high integrity earth needed

The MTL Series of isolating Intrinsic Safe (IS) interface units offer a compact and easy to use means for communicating safely with process measurement, indicating, actuating and conditioning them as required and at the same time providing certified explosion protection for equipment and wiring in all zones and all explosive atmospheres.

**MTLS501-SR** - Located in the hazardous area can control an isolated fail-safe electronic output. Also provides line fault detection alarm contacts.

**MTLS511** - Enables a safe area load to be controlled by a switch or proximity detector located in a hazardous area. Also provides a line fault detect facility.

**MTLS513** - Enables two solid-state outputs in the safe area to be controlled by two switches or proximity detectors located in the hazardous area. Independent output phase reversal and line fault detection are available.

**MTLS516C** - Enables two safe area loads to be controlled by a switch or proximity detector located in a hazardous area. Line fault detect facility and phase reversal of each channel are available.

**MTLS018AC** - Enables two safe area loads to be controlled by two switches or proximity detectors located in a hazardous area. Independent phase reversal control provided.

**MTLS521** - Loop powered module which enables a device located in the hazardous area to be controlled from the safe area. Can drive a certified intrinsically safe low power load as well as non-energy storing simple device such as an LED.

**MTLS541** - Provide fully floating dc supplies for energising conventional 2-wire or 3-wire 4/20mA or “smart” transmitters located in a hazardous area and repeats the current in other circuits to drive safe area loads. For “smart” 2-wire transmitters, bi-directional communications signals can be superimposed on the 4/20mA signal.

**MPA5500** - Enables any MTLS5500 Series module that is normally powered from a nominal...
24V DC supply (i.e. those that are not looppowered) to be powered from a high-voltage AC supply. It plugs into the power socket (terminals 13 and 14) of an MTL5500 module and clips securely onto the module housing. The 25V DC power output from the adaptor is sufficient to supply a single module and can be connected to any normal AC power source.

Supply Voltage: 24Vdc ±15%
Current consumption (approx): 20mA (single channel), 50mA (dual channel) with energised relay(s)
Intrinsically safe (commercial) Open circuit 8Vdc, short circuit 8mA
Relay output: Single channel - 1 x changeover contacts
Contact rating: 2A @ 250Vac, cos a=0.7, 2A @ 40Vac (res)
Switching speed (max): 10Hz
LED indication: Green - power on
Yellow - relay status
Red - sensor condition (lead breakage, short circuit monitoring)

Mode of operation: Selected by side switch(es) on front plate
-20°C to +60°C

Analogue Output Barrier

- Intrinsically safe EEx ia IIC
- DIN rail mounting
- Accuracy 0.1%
- Power supply 20V...35V DC
- Single channel

This barrier is used to drive 4-20mA signals from a safe area into a hazardous area. Typically to drive IP converters or as an interface to a hazardous area display. The input and output are isolated from each other and both are isolated from the power supply, making it safe to operate in hazardous areas.

**Price Each**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
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<tbody>
<tr>
<td>Single Channel</td>
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<td>730-701</td>
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<tr>
<td>Dual channel</td>
<td>KF02-SP2-EX2-W</td>
<td>730-713</td>
<td></td>
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<td></td>
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</tbody>
</table>

Analog Signal Converters

These devices allow the required input and output ranges to be configured by means of directly accessible DIP switches positioned on the side of the unit. Due to the wide input range of the gain and offset stages all input signals between the minimum and the maximum input value can be universally converted to all common output signals. They provide signal conversion where available signals cannot be processed by the controller or actuator because the signals are not in the correct format. They filter the signals which, particularly on long lines, that are subjected to interference. They are also designed to provide protection against overvoltage and ground loops.

- Universally configurable devices and single-function devices
- Adjustment and operating elements on the front side
- Safe operation by electrical 3-way isolation
- Unambiguous and clear connecting terminal markings
- Conversion, measurement and separation of standard signals (0-5 V, 0-10 V, 0-20 mA, 4-20 mA)
- Temperature signals of RTD sensors (PT 100)
- Thermocouple signals (types J and K)
- Current measurement signals (0-5 A, 0-20 A AC/DC)
- Single-function devices no adjustment or balancing necessary.
- Universal devices the required input and output ranges can be configured by means DIP switches
- Gain adjustment of ±5 % by means of an adjustment potentiometer on the front-side
- Offset adjustment of ±5 % by means of adjustment potentiometers on the front-side
- UL Recognised

**Price Each**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
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<tbody>
<tr>
<td>CC-E Range</td>
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<td>721-9738</td>
<td></td>
<td></td>
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</table>

Analogue Input Modules

- Repeater Power Supply Units

<table>
<thead>
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<th>Type</th>
<th>Mftrs. List No.</th>
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<th>5+</th>
<th>10+</th>
<th>25+</th>
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</thead>
<tbody>
<tr>
<td>1 Ch. Repeater Power Supply - 2 or 3 Wire Tx</td>
<td>MTL5541</td>
<td>749-7329</td>
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Analogue Signal Conditioners - continued

Analogue Signal Converters - continued
CC-E Range - continued

<table>
<thead>
<tr>
<th>Channels - Description</th>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>24V dc Supply Voltage</td>
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<td></td>
</tr>
<tr>
<td>1 x Single Function Signal</td>
<td>109RV11171R1100</td>
<td>189-5974</td>
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<tr>
<td>1 x Single Function Signal</td>
<td>109RV11171R1110</td>
<td>189-5975</td>
<td></td>
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<tr>
<td>1 x Single Function Signal</td>
<td>109RV11171R1120</td>
<td>189-5976</td>
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<tr>
<td>1 x Single Function Signal</td>
<td>109RV11171R1130</td>
<td>189-5977</td>
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<td>1 x Universal Signal</td>
<td>109RV11171R2100</td>
<td>189-5978</td>
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<td>1 x Universal Signal</td>
<td>109RV11171R2110</td>
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110 - 240V ac Supply

<table>
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<tr>
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<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1 x Universal Signal</td>
<td>109RV11170R2100</td>
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<td>1 x Universal Signal</td>
<td>109RV11170R2110</td>
<td>189-5981</td>
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</table>

Analogue Signal Converters CC-U Range

These devices allow the required input and output ranges to be configured by means of directly accessible DIP switches positioned on the side of the unit. Due to the wide input range of the gain and offset stages all input signals between the minimum and the maximum input value can be universally converted to all common output signals. They provide signal conversion where available signals cannot be processed by the controller or actuator because the signals are not in the correct format. They filter the signals which, particularly on long lines, that are subjected to interference. They are also designed to provide protection against overvoltage and ground loops.

- 8 different standard signal outputs on one device
- Input and output side universally configurable
- Also available with 2 threshold relay outputs
- Adjustment and operating elements on the front side
- Safe operation by electrical 3-way isolation
- Plug-in connecting terminals, unambiguously and clearly marked
- UL Recognised

Multi-Function Timer DIN1/16

Panasonic

- Robust and big set dial - set dial can easily be used with gloves
- Operation can be checked by two LEDs (power and operation)
- 2 timed or 1 timed + 1 instantaneous contact
- LED status indicators
- Panel mount fixings included

Multi-Function 11 Pin Plug In or Panel Mounting Timer

Nominal Supply Voltage 24 - 230VAC/dc
Output Rated Current/Max Peak Current 8/15A
Rated Voltage/Max Switching Voltage 250/250 V ac
Rated Load AC1 2000 VA
Rated Load AC15 400 VA
Time Scale Selector 0.5, 1, 5, 10
Unit of Time Selector Sec, Min, Hrs, 10 Hrs
Repeatability ±1%
Recovery Time 300 ms
Minimum Control Impulse 50 ms
Setting Accuracy Full Range ±3%
Environmental Life at Rated Load AC1 100,000 Cycles
Ambient Temperature -10 to 55°C
Protection Category IP40

Electronic Timers

Multifunction Timer DIN1/16 PM4H

- Robust and big set dial - set dial can easily be used with gloves
- Operation can be checked by two LEDs (power and operation)
- 2 timed or 1 timed + 1 instantaneous contact
- LED status indicators
- Panel mount fixings included
Miniature 4-Pole Changeover - H3Y4

- Miniature adjustable timer
- Compatible with Omron LY and MY relays
- Connection by 14 pin socket
- Panel adapter available for panel mounting

Order Codes

<table>
<thead>
<tr>
<th>Time Range</th>
<th>DC Voltage</th>
<th>DC Voltage</th>
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<tbody>
<tr>
<td>100-120V ac</td>
<td>200-230V ac</td>
<td>12V-24V ac</td>
</tr>
<tr>
<td>0.1 - 1.5s</td>
<td>104-046</td>
<td>104-036</td>
</tr>
<tr>
<td>0.3 to 3s</td>
<td>104-042</td>
<td>104-037</td>
</tr>
<tr>
<td>0.5 to 10s</td>
<td>104-028</td>
<td>104-038</td>
</tr>
<tr>
<td>1 to 30s</td>
<td>104-044</td>
<td>104-049</td>
</tr>
<tr>
<td>2 to 60s</td>
<td>104-040</td>
<td>104-046</td>
</tr>
<tr>
<td>0.1 to 3m</td>
<td>104-040</td>
<td>104-037</td>
</tr>
<tr>
<td>0.2-5m</td>
<td>104-040</td>
<td>104-046</td>
</tr>
<tr>
<td>0.5mm to 10mm</td>
<td>104-046</td>
<td>104-047</td>
</tr>
<tr>
<td>H = 56.6, W = 20.7, D = 27.2 mm</td>
<td>104-046</td>
<td>104-047</td>
</tr>
</tbody>
</table>

Reset time 0.1s max. Operating voltage range 80-110%

Time Switch Modules

12 Series

- Time ranges See ordering info
- Contact rating 3A @ 250V ac

H = 56.6, W = 20.7, D = 27.1 + 50 mm

Operating modes
- Delay on energisation
- Output time contacts 4POC

Time ranges
- See ordering info
- Contact rating 3A @ 250V ac

Reset time
- 0.1s max.
- Operating voltage range 80-110%

Voltage

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
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<td>24/100-120/200</td>
<td>5+</td>
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<tr>
<td>12/24V</td>
<td>5+</td>
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</table>

Chassis/DIN rail

- All Order Codes

Additional Information

- Time setting from 30s to 20min
- 35mm DIN Rail mounting
- Controls can be operated by blade or cross head screw drivers

Staircase Timer

14 Series

- Time setting from 30s to 20min
- Xerox capability
- Can be used with illuminated push-buttons
- DIN Rail mount
- 3 terminals on the same side
- Controls can be operated by blade or cross head screw drivers

Mono-function - 230V ac Supply

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1NO - 16A</td>
<td>18.93.230.000</td>
</tr>
<tr>
<td>188-9080</td>
<td>100+</td>
</tr>
</tbody>
</table>

Astronomical Time Switch

ASTRO Series - Three Phase

- Dynamic and accurate control based on astronomical mathematical
- Yearly programming with season mode, DST, Offset, Off hours enabled
- Protection against under voltage and over voltage
- Active Phase selection & Auto load changeover feature
- Three independent channel outputs

- 3 NO (SPST) outputs, 8A @ 240V ac, 5A @ 30V dc (resistive)
- Manual override facility
- Includes Data-stick and Software

Delay On Timer

Type M1EDO

- 17.5mm Width DIN Rail housing
- Delay On Energisation
- Supply indication
- Output relay - 8A SPCO contact
- Relay indication
- Dual voltage
- UL and CUL approved
- Conforms to CSA, IEC and CE

Delay Off Timer

Type M1ESW

- 17.5mm Width DIN Rail housing
- Delay Off - Switch initiated
- Supply indication
- Output relay - 8A SPCO contact
- Relay indication
- Dual voltage
- UL and CUL approved
- Conforms to CSA, IEC and CE

Timers

- All Order Codes
- Chassis/DIN rail
- All Order Codes
- Chassis/DIN rail

Order Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 20+ 100+</td>
<td>5+</td>
</tr>
</tbody>
</table>

Price Each

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>24/100-120/200</td>
<td>5+</td>
</tr>
<tr>
<td>12/24V</td>
<td>5+</td>
</tr>
</tbody>
</table>

Staircase Timer

14 Series

- Time setting from 30s to 20min
- Xerox capability
- Can be used with illuminated push-buttons
- DIN Rail mount
- 3 terminals on the same side
- Controls can be operated by blade or cross head screw drivers

Mono-function - 230V ac Supply

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1NO - 16A</td>
<td>18.93.230.000</td>
</tr>
<tr>
<td>188-9080</td>
<td>100+</td>
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</tbody>
</table>

Astronomical Time Switch

ASTRO Series - Three Phase

- Dynamic and accurate control based on astronomical mathematical
- Yearly programming with season mode, DST, Offset, Off hours enabled
- Protection against under voltage and over voltage
- Active Phase selection & Auto load changeover feature
- Three independent channel outputs

- 3 NO (SPST) outputs, 8A @ 240V ac, 5A @ 30V dc (resistive)
- Manual override facility
- Includes Data-stick and Software

Delay On Timer

Type M1EDO

- 17.5mm Width DIN Rail housing
- Delay On Energisation
- Supply indication
- Output relay - 8A SPCO contact
- Relay indication
- Dual voltage
- UL and CUL approved
- Conforms to CSA, IEC and CE

Delay Off Timer

Type M1ESW

- 17.5mm Width DIN Rail housing
- Delay Off - Switch initiated
- Supply indication
- Output relay - 8A SPCO contact
- Relay indication
- Dual voltage
- UL and CUL approved
- Conforms to CSA, IEC and CE

Timers

- All Order Codes
- Chassis/DIN rail
- All Order Codes
- Chassis/DIN rail

Order Codes

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 20+ 100+</td>
<td>5+</td>
</tr>
</tbody>
</table>

Price Each

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24/100-120/200</td>
<td>5+</td>
</tr>
<tr>
<td>12/24V</td>
<td>5+</td>
</tr>
</tbody>
</table>

Staircase Timer

14 Series

- Time setting from 30s to 20min
- Xerox capability
- Can be used with illuminated push-buttons
- DIN Rail mount
- 3 terminals on the same side
- Controls can be operated by blade or cross head screw drivers

Mono-function - 230V ac Supply

<table>
<thead>
<tr>
<th>Code</th>
<th>Price Each</th>
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<tbody>
<tr>
<td>1NO - 16A</td>
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</tr>
<tr>
<td>188-9080</td>
<td>100+</td>
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</tbody>
</table>
# Electronic Timers - continued

## Interval Timer
Type M1EIN

- 17.5mm Width DIN Rail housing
- Interval (Single shot) timer
- Supply indication
- Output relay - 8A SPCO contact
- Relay indication
- Dual voltage
- UL and CUL Approved
- Conforms to IEC and CE

### Timer

<table>
<thead>
<tr>
<th>Range</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>24V ac/dc, 230V ac - Supply voltage</td>
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<td></td>
</tr>
<tr>
<td>0.5s to 15s</td>
<td>M1EIN 24VAC/DC/230VAC 10SECSC</td>
<td>185-37563</td>
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<tr>
<td>2s to 60s</td>
<td>M1EIN 24VAC/DC/230VAC 2-60SECSC</td>
<td>185-37560</td>
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<tr>
<td>0.5s to 10min</td>
<td>M1EIN 24VAC/DC/230VAC 5-10MINS</td>
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<tr>
<td>24V ac/dc, 110V ac - Supply voltage</td>
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<tr>
<td>0.5s to 10min</td>
<td>M1EIN 24VAC/DC/110VAC 5-10MINS</td>
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<tr>
<td>0.5s to 10s</td>
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<tr>
<td>2s to 60s</td>
<td>M1EIN 24VAC/DC/110VAC 2-60SECSC</td>
<td>185-37620</td>
<td></td>
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</tbody>
</table>

## True Delay Off Timer
Type M1EDF

- 17.5mm Width DIN Rail housing
- True Delay Off (Delay On Release)
- Supply indication
- Output relay - 8A SPCO contact
- Dual voltage
- UL and CUL Approved
- Conforms to CE

### Timer

<table>
<thead>
<tr>
<th>Range</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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<tbody>
<tr>
<td>24V ac/dc, 110V ac - Supply voltage</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2s to 60s</td>
<td>M1EDF 24VAC/DC/110VAC 60SECSC</td>
<td>185-37660</td>
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</tr>
<tr>
<td>0.5s to 10min</td>
<td>M1EDF 24VAC/DC/110VAC 5-10MINS</td>
<td>185-37650</td>
<td></td>
</tr>
</tbody>
</table>

## Asymmetrical Recycler
Type M1ARM

- 17.5mm Width DIN Rail housing
- Asymmetrical Recycling On/Off or On/Off (selectable)
- Multi-voltage supply: 24 - 240V AC / DC
- Selectable time ranges for ON and OFF periods (up to 60mins)
- Separate adjustments for ON and OFF periods
- Output relay - SPCO 6A Contact
- LED indication of supply and output relay status
- Conforms to IEC and CE

### Timer

<table>
<thead>
<tr>
<th>Range</th>
<th>Mftrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 to 240V ac/dc - Supply voltage</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2mm to 60min</td>
<td>M1ARM 24-240VAC/DC 60MIN</td>
<td>185-37670</td>
<td></td>
</tr>
</tbody>
</table>

---

## Digital Twin Timer
LT4H-W

- Twin timer: two independent timing functions available simultaneously: Time Off
- Wide time range: 0.01s to 9999h
- 2 colour backlight LCD display of elapsed and set time
- Easy time setting by seesaw buttons
- Cover also in black (please order timer & cover ATLS0201 L)
- Power failure memory by EEPROM
- Standards: CE, UL, CSA
- Installation: front & DIN-Rail mounting

### 6 Operation Types (Multi-function)

- Pulse input & Integrating Input: Delayed on shot
- OFF-start flicker
- ON-Start flicker

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01s - 9999h (16 time ranges)</td>
<td>137-37660</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start, Stop, Reset, Lock</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input Signal</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential-free contact, start in case of power-on</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay c, 5A 250V ac</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protective Construction</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP66</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

### Dimensions

- 48x48x55mm
- Front Mounting a. 11pin type + socket AT78051J
- DIN-Rail Mounting b. 11 Pin type + Socket AT1800341J
- Mounting frame, rubber gasket and instruction manual (in six languages) are included.

---

## Multifunction Timer for DIN-Rail
PMSS

- Free-voltage input 24 - 240V AC/ DC
- Built-in screw terminals
- Multiple time ranges 1s - 500h
- Output: 2 relays 5A 250V AC
- Instruction manual in six languages
- Standards: CE, UL, CSA
- Installation: DIN-rail mounting

### 6 Operation Types (Multi-function)

- ON-delay
- OFF-delay Flicker (2 types)
- One-shot
- One-cycle

<table>
<thead>
<tr>
<th>Time Range</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s - 500h (16 time ranges)</td>
<td>137-37670</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Input Signal</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential-free contact, start in case of power-on</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Output</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relay c, 5A 250V ac</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Protective Construction</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP40</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

### Dimensions

- 48x48x98mm

---

## ON-delay Timer DIN 1/16
QM4H

- Easy and fast set of time and time range with mechanical time switches - also during power off
- Digital 7-Segment-display of elapsed time
- All settings at the front
- Output: 2 relays 5A 250V AC
- Selectable contact arrangement: 2x relays delayed or 1x relay delayed and 1x relay instantaneous
- Instruction manual in six languages
- Standards: CE, UL, CSA
- Installation: front and DIN-Rail mounting

### 6 Operation Types (Multi-function)

- ON-delay (Range: 85-110%)

<table>
<thead>
<tr>
<th>Voltage Terminals</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 - 240V AC 24VAC/DC</td>
<td>14H-W-DC240V</td>
<td>137-37680</td>
<td></td>
</tr>
<tr>
<td>12 - 240V DC 24VDC</td>
<td>Screw Terminals</td>
<td>14H-W-DCA240V</td>
<td>137-37680</td>
</tr>
<tr>
<td>100 - 240VAC 10 Pin Type</td>
<td>LT4H-W-AC240V</td>
<td>137-37670</td>
<td></td>
</tr>
<tr>
<td>100 - 240VAC Screw Terminals</td>
<td>14H-W-DCA240V</td>
<td>137-37670</td>
<td></td>
</tr>
</tbody>
</table>

### Accessories

<table>
<thead>
<tr>
<th>Rear Terminal Socket</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>AT78051</td>
<td>137-37610</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>DIN-Rail Socket</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>A004003</td>
<td>137-37650</td>
</tr>
</tbody>
</table>

---

## Multirange Electronic Timers

- Conforms to IEC and CE and CSA
- Approved CUL
- Installation: front & DIN-Rail mounting

### Life

- 2.0 x 10⁷ operation (Mech), 1.0 x 10⁵ operation (Elec.)

### Output Relay

- c, 5A 250V ac

### Input Signal

- Potential-free contact, start in case of power-on

### Time Range

- 0.01s - 9999h (16 time ranges)

### Operation Types

- 6 Operation Types (Multi-function)
  - Pulse input & Integrating Input: Delayed on shot
  - OFF-start flicker
  - ON-Start flicker

### Setting

- Easy and fast set of time and time range with mechanical time switches - also during power off

### Installation

- DIN-rail mounting

### Standards

- CE, UL, CSA

---

## i-Buy

Intelligent Online Buying System Providing
Complete cost control, reduced administration time, visibility of your spend, flexibility and personalisation to your company’s needs.

farnell.com/ibuy
**Electronic Timers**

- **CT-D and CT-S Ranges**
  - Multi-function, multi-voltage output
  - High input/output isolation
  - Multi-voltage output - 24 to 240V ac/dc independent from input voltage
  - IP20 protection level
  - CE Marked

<table>
<thead>
<tr>
<th>Nominal Supply Voltage</th>
<th>Switching Output</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>240Vac</td>
<td>1A / 240Vac</td>
<td>RE11LMM7</td>
</tr>
</tbody>
</table>

**Zelio Time - Timing Relays**

- **NEW**

<table>
<thead>
<tr>
<th>Description</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE8</td>
<td>205-6323</td>
<td>RE8</td>
</tr>
<tr>
<td>RE9</td>
<td>205-6324</td>
<td>RE9</td>
</tr>
<tr>
<td>RE11</td>
<td>205-6325</td>
<td>RE11</td>
</tr>
</tbody>
</table>

**DIN rail mounted relays (RE8, RE9, RE11) designed for mounting on DIN rails in an enclosure.**

**Application:** Opening of automatic doors, alarm, lighting in toilets and car park barriers

- **Output Current:** 5A
  - Operating temperature: -20°C to +60°C
  - Relative humidity: 15% to 85% (3K3) conforming to IEC 60721-3-3
  - IP degree of protection: IP20 (terminals) / IP50 (housing)

**Electrical durability:** >100000000 cycles

### Timing Ranges

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1s to 10s</td>
<td>24 to 240 VAC</td>
<td>0.7 A</td>
<td>RE11LMM7</td>
<td>205-6309</td>
</tr>
<tr>
<td>1s to 100h</td>
<td>24 to 240 VAC</td>
<td>8 A</td>
<td>RE11LMM7</td>
<td>205-6330</td>
</tr>
</tbody>
</table>

**On delay timing relay**

- 1s to 100h: 24 to 240 VAC 8 A RE11LMM7 205-6330
- 1s to 100h: 24 VDC, 24 to 240 VAC 8 A RE11LMM7 205-6330
- 1s to 100h: 24 VDC, 24 to 240 VAC 8 A RE11LMM7 205-6330
- 1s to 100h: 24 VDC, 24 to 240 VAC 8 A RE11LMM7 205-6330
- 1s to 100h: 24 VDC, 24 to 240 VAC 8 A RE11LMM7 205-6330
- 1s to 100h: 24 VDC, 24 to 240 VAC 8 A RE11LMM7 205-6330

**Push-in Terminals**

- **On delay** CT-ERS.22P
  - Price Each: 205-6320
- **Off delay** CT-ARS.11P
  - Price Each: 205-6320
- **Off delay** CT-ARS.21P
  - Price Each: 205-6320
- **Off delay** CT-APS.12P
  - Price Each: 205-6320

**Price Each**

- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330

**Price Each**

- RE11LMM7: 205-6330
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- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
- RE11LMM7: 205-6330
**Multirange Electronic Timers - continued**

**Zelio Time - Timing Relays - continued**

<table>
<thead>
<tr>
<th>Mfrs.</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1+</td>
<td>5+</td>
</tr>
<tr>
<td><strong>Off delay timing relay</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11CBM</td>
<td>205-839006</td>
<td></td>
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</tr>
<tr>
<td>RE11TBG</td>
<td>205-832200</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11TUQ</td>
<td>205-832206</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11BUQ</td>
<td>205-832204</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11BUQ</td>
<td>205-832204</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11TUQ</td>
<td>205-832206</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>9 functions delay timing relay</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMU</td>
<td>205-831500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMU</td>
<td>205-831500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMU</td>
<td>205-831500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMW</td>
<td>205-833400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMW</td>
<td>205-833400</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RE11RMW</td>
<td>205-833400</td>
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<td></td>
</tr>
<tr>
<td>RE11RMW</td>
<td>205-833400</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multi-voltage - Multi-function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Micron® Electronic Timer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multi-voltage - Multi-function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Slim 18mm wide enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● 35mm rail mount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Wide time range (0.1s to 1000h)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Highly accurate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Multi-function (10 different functions - Signal and non-signal)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Multi-voltage (12 - 240V ac/dc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● 1A @ 240V ac, 5A @ 24V dc SPDT relay output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Separate indicators for power and relay status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Low power consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H = 89, W = 17.5, D = 76mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions - Output</td>
<td>List No.</td>
<td>Order Code</td>
<td>Price Each</td>
</tr>
<tr>
<td>10 Modes - SPDT</td>
<td>1+</td>
<td>632381</td>
<td></td>
</tr>
<tr>
<td>1+</td>
<td>632381</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1+</td>
<td>632381</td>
<td></td>
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</tr>
<tr>
<td>1+</td>
<td>632381</td>
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<td>1+</td>
<td>632381</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ELIRIO Digital Timer</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Multi-voltage - Multi-function</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Multi-voltage (24-240V ac/dc)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Multi-function (8 or 17)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● 3 digit LCD for Preset time and Run time</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Option to select Up/Down counting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Tamper proof with key lock function</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● All settings accomplished with only two keys</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● Slim 17.5mm wide enclosure</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>● 35mm rail mount</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H = 89, W = 17.5, D = 76mm</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Functions - Output</td>
<td>List No.</td>
<td>Order Code</td>
<td>Price Each</td>
</tr>
<tr>
<td>8 - 5SPDT</td>
<td>195-54540</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 - 5DPST</td>
<td>195-54540</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 - 5SPDT</td>
<td>195-54540</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 - 5DPST</td>
<td>195-54540</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**Multi Function, Multi Voltage Timer**

**Type M11FM**

- 17.5mm Width DIN Rail housing
- Delay On Operate, Interval, Symmetrical Recycling Off/On or Off
- Multi-voltage supply: 24 - 240V ac / dc
- Two time ranges available: 0.5secs - 60mins or 5secs to 10hours
- DIP Switch facility allows one of 4 ranges to be selected
- 1 x SPDT relay output
- LED indication for relay status
- Conforms to UL, CUL, CSA and IEC

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1+</td>
<td>5+</td>
</tr>
<tr>
<td>M11FM 60XSSP</td>
<td>185-373200</td>
<td></td>
</tr>
</tbody>
</table>

---

**Timed Relay Interface Modules**

**38 Series**

- SPDT Electromechanical output relay
- SPST-N0 2A DC or AC Solid State Relay output
- Multi function timer, AI: DI: GI & SW
- 4 Time scales from 0.1s to 6h
- Instant relay ejection
- 35mm rail (EN 60715) mount
- CE, Gost Approved, UL Recognised

<table>
<thead>
<tr>
<th>Functions - Output</th>
<th>List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+ 5+ 10+ 50+</td>
<td>1+</td>
<td>632385</td>
<td></td>
</tr>
<tr>
<td>1+ 5+ 10+ 50+</td>
<td>1+</td>
<td>632385</td>
<td></td>
</tr>
<tr>
<td>1+ 5+ 10+ 50+</td>
<td>1+</td>
<td>632385</td>
<td></td>
</tr>
<tr>
<td>1+ 5+ 10+ 50+</td>
<td>1+</td>
<td>632385</td>
<td></td>
</tr>
</tbody>
</table>

---

**Ultra-Slim, Multifunction - H3RN Series**

- Standard multiple time ranges and multi-ple operating modes
- Compatible with Omron G2R relays and sockets
- SPCO or SPNO contact outputs available
- Conforms to VDE0435/P2021 and EMC standards
- UL recognised and CSA approved

<table>
<thead>
<tr>
<th>Nominal Supply Voltage</th>
<th>Switching Output</th>
<th>VDE0435/P2021</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>6A / 240V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6A / 250V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5A / 240V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5A / 250V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2A / 240V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2A / 250V ac</td>
<td>1+ 5+ 10+ 50+</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

The first online technical portal for design engineers
Log on, research, refine and design
**Miniature 4 Pole Changeover - H3YN Series**

- Pin compatible with Omron MY relays
- Standard multiple operating modes and multiple time ranges
- DPDT or 4PDT contact outputs available
- Conforms to VDE 0433/P2021
- UL recognised and cUL approved

### Time Ranges

- 0.1 to 2 sec

### Rated Load

- AC1: 1500 VA
- Electrical Life at Rated Load AC1: 60,000 Cycles

### Ambient Temperature

- -10 to 50°C

### Output

- 2NO (SPDT) Repeatability: 0.1-1s, 0.1-10s, 0.1-1min, 0.1-1hr

### Time Ranges

- Short range models (0.1-1s, 1-10s, 0.1-1min, 1-10min)
- Long range models (0.1-1hr, 1-10hr)

### Voltage

- Nominal Supply Voltage: 12 - 240V ac/dc
- Transfer Time: 0.05 to 1 sec
- Recovery Time: 50ms Max.
- Setting Accuracy Full Range: ±5%

### Contact Rating

- SPDT: 5A @ 250Vac/30Vdc
- Star Delta: 2XSPST-NO
- H3DS-GL: up to 120s
- H3DS-AL/H3DS-XL: 0.1s - 1.2s to 10hr - 120hr

### Time Setting Range

- 1 - 30s, 1 - 30 min, 1 - 10s, 1 - 10min

### Timing Functions

- lp - li - ER - EWu

### Functions

- Time Ranges
- 5% - 100%
- 1 - 10s
- 1 - 10min

### Adjustment Range

- 5% - 100%

### Control Input

- Terminal Y1-Y2
- Galvanic Separated
- Terminals A1-B1
- Terminals A1-B2

### Remote Potentiometer

- Time1: 1 - 30 - 300s
- Time2: 1 - 10min

### Power Supply

- 24 to 240V ac/dc
- Terminals A1-A2
- Terminals A1-B2

### Output

- 2 CO contacts
- 2 PO contacts
- 250V, 5A
- 22.5mm

### Certificates

- CE - UL - cUL
- GOST

### Price Each

<table>
<thead>
<tr>
<th>Terminal Type</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screw H3DS-5L</td>
<td>377-4168</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screw H3DS-ML</td>
<td>377-4156</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Locking Tool</td>
<td>Y92-538</td>
<td>377-4170</td>
<td></td>
</tr>
</tbody>
</table>

### Automation

- Control, Timers & Counters

---

**Multi-Range Multi-Voltage Star Delta Timer**

- 12 to 240V ac/dc operation
- Adjustable transfer time 0.05 to 1 sec
- 4 time range scales 0.1 sec to 20 min
- High input/output isolation
- LED status indicator
- Slim 17.5mm wide enclosure
- 35mm rail mount

### Nominal Supply Voltage

- 12 - 240V ac/dc
- Transfer Time: 0.05 to 1 sec
- Repeatability: ±1%
- Temperature Range: -10°C to +55°C

### Contact Rating

- SPDT: 5A @ 250Vac/30Vdc

### Operating Temperature

- -10°C to +55°C

### Price Each

<table>
<thead>
<tr>
<th>Supply Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 - 240V ac/dc</td>
<td>80.02.0.240.0000</td>
<td>1+ 5+ 10+ 25+</td>
<td></td>
</tr>
</tbody>
</table>

---

**Miniature plug-in Timers - 8S Series**

- 4 Timing functions
- 7 Overlapping time scales - 0.05s to 100h
- Three stat LED indicator
- High output switching capacity
- 94 Series sockets available separately
Multirange Electronic Timers - continued

Time Relays - continued

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>Price Each</th>
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</thead>
<tbody>
<tr>
<td>426-9029</td>
<td>1+</td>
<td>5+</td>
</tr>
<tr>
<td>426-9030</td>
<td>1+</td>
<td>5+</td>
</tr>
</tbody>
</table>

Multifunction, D6 Series
DIN Rail Mounting

![Multifunction, D6 Series](image)

- Multifunction
  - 8 functions
  - 8 time ranges
  - Indication of timing period
  - Integrated voltage selector
  - 1 C/O contact
  - Operating voltage 24V ac/dc or 110-240V ac
- True Off-delay
  - 4 time ranges
  - Integrated voltage selector
  - 1 C/O contact
  - Operating voltage 24V ac/dc or 110-240V ac

Operating Modes:
- E On Delay/Delay
- O Off Delay
- R On Delay

Time ranges:
- 1, 10 Secs, mins, hrs, days
- 1, 10 secs to 1, 3 mins

Contact rating:
- 8A @ 240Vac
- 5A @ 240Vac

-25°C to +55°C

Contact arrangement: SPCO

Order Code

<table>
<thead>
<tr>
<th>Timing Function List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>80.01</td>
<td>0.230.0000</td>
</tr>
<tr>
<td>80.01.0.230.0000</td>
<td>426-9029</td>
</tr>
</tbody>
</table>

Single Function Electronic Staircase Timer

![Single Function Electronic Staircase Timer](image)

- Nominal Supply Voltage: 230VAC, 50/60 Hz
- Output: 160 SPST
- Rated Current/Peak Current: 16/30A (20A 5ms)
- Rated Voltage: 220Vac
- Rated Load AC1: 3700 VA
- Rated Load AC15: 750 VA
- Nominal Lamp Rating (230V ac): 100W Incandescent
- 10000W Compensated Fluorescent
- 10000W Uncompensated Fluorescent
- 3000W Halogen
- Electrical Life at Rated Load AC1: 100,000 Cycles
- Delay Time Setting: 30 sec to 20 min adjustable
- Max. No. of Illuminated Pushbuttons: 30
- Ambient Temperature: -10 to 60°C
- Protection Category: IP20
- 30 sec to 20 min time setting
- Zero crossing load switching
- Can be used with illuminated pushbuttons
- LED status indicators
- 5mm 17.5mm wide enclosure
- 35mm rail mount

Order Code

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>14.71.8.230.0000</td>
<td>134-4200</td>
</tr>
</tbody>
</table>

Multifunction - DIN rail mount
81 Series

![Multifunction - DIN rail mount](image)

- Multi voltage, Multi function
- 4 functions with supply start, 3 with signal start
- Six time scales, from 0.1s to 10h
- 35mm rail (EN 50022) mount

- Coil operating voltage: 12 to 230V ac/dc
- Contact configuration: SPCC
- Rated current/Peak current: 16/30A
- Rated voltage/Max. switching voltage: 250/400V
- Rated load: AC1 4000VA
- Rated load: AC15 4000VA
- Breaking capacity - OCT: 16/30/12
- Minimum switching load: 500 mW (10V/5mA)
- Contact material: AgCuD0

Order Code

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>81.01.0.230.0000</td>
<td>426-9020</td>
</tr>
</tbody>
</table>

Modular - DIN rail mount
80 Series

- Mono and Multi function versions available
- 6 time scales, from 0.1s to 20h
- Rotary selector
- High input/output insulation
- 35mm rail (EN 50022) mount

- Mono function - Mono voltage
- Mono function - Multi voltage

Series Functions
- 80.01
- 80.01.0.230.0000
- 80.08
- 80.08.0.240.0000
- 80.10
- 80.10.0.230.0000
- 80.20
- 80.20.0.230.0000
- 80.30
- 80.30.0.230.0000
- 80.40
- 80.40.0.230.0000
- 80.50
- 80.50.0.230.0000
- 80.60
- 80.60.0.230.0000
- 80.70
- 80.70.0.230.0000
- 80.80
- 80.80.0.230.0000
- 80.90
- 80.90.0.230.0000

Order Code

<table>
<thead>
<tr>
<th>Voltage List No.</th>
<th>Order Code</th>
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</thead>
<tbody>
<tr>
<td>12 to 240V ac/dc</td>
<td>80.01.0.240.0000 426-8945</td>
</tr>
<tr>
<td>24 to 240V ac/dc</td>
<td>80.10.0.240.0000 134-4230</td>
</tr>
</tbody>
</table>

Multi function - Multi voltage

Series Functions
- 87.01
- 87.01.0.240.0000
- 87.91
- 87.91.0.240.0000

Order Code

<table>
<thead>
<tr>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>87.01.0.240.0000</td>
<td>418-1323</td>
</tr>
<tr>
<td>87.91.0.240.0000</td>
<td>418-1414</td>
</tr>
</tbody>
</table>
Multifunction/ Monofunction

**DIN Rail Mounting 17.5mm/22.5mm-Chronos 2**

- 17.5 slimline or 22.5mm DIN rail mounting
- Multi-function, Dual-function or Mono-function
- Multi-range (0.1s to 100 hours)
- Multi-voltage by 2 terminals
- Output: 1 or 2 channel programs - 8 @ 250V
- LED Status indicators
- Possible to connect external power supply to the control input
- 3 wire sensor control option
- Precision timing by micro-controller

**Operating Temperatures**
- -20 °C to 60 °C

**Function**
- **T**: Timed on/off latch after pulses
- **Ah**: Single flip flop on impulse, pause start
- **P**: Delayed fixed length pulse
- **O**: Delayed safe-guard
- **N**: Safe-guard
- **K**: Delay on de-energisation
- **Li**: Asymmetrical flip flop, pulse start
- **Bw**: Timing at the closing and opening of the control contact
- **Ac**: Timing after impulse
- **A**: Delay on energisation

**Multi-function**
- **X**: 8 function (N, O, P, W, Ad, Ah, Tt, Tt)
- **U**: 10 function (A, At, B, C, Ht, Di, D, Ac, Bw)

**Plug-in Electronic Timers**

8 and 11 Pins - Chronos 2

- Precision timing by micro-controller
- 8 or 11 pin plug in modules available
- Multi-Dual or Mono - Function
- 7 Timing ranges from 0.1s to 100h
- Output relay 8A @ 250V
- LED Status indicator
- 3-wire sensor control option

**Solid State Timers**

H3DK Series

- A wide AC/DC power supply ranges
- Finger-safe terminal block and captive screws according to EN 50274
- EMC (EN 61812-1) compliance for application in heavy industrial, residual, commercial or light industrial environments
- CE and LR Approved, UL Recognised

**Supply Voltage**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>88 926 125</td>
<td>120-6967</td>
</tr>
<tr>
<td></td>
<td>88 926 130</td>
<td>120-6968</td>
</tr>
<tr>
<td></td>
<td>88 926 105</td>
<td>120-6969</td>
</tr>
</tbody>
</table>

**Plug-in Time Switch**

- 1 or 2 Channels
- Switching capacity 16 A per channel
- Permanent by date-mode (holiday function)
- Manual override
- Elapsed time and pulse counter for each channel
- Security by PIN-Coding
- Unlimited program security by E2-Prom
- Can be programmed with supply disconnected
- >6 years power back up
- Din-rail mounting
- Daily and Weekly program
- 60 memory locations
- Automatic switching of setting times on reboot
- Unrestricted block programming of days
- Fully automatic daylight saving time (European, North American or Australian standard adjustable)

**Programmable Time Switch**

**Supply Voltage**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>88 926 125</td>
<td>120-6967</td>
</tr>
<tr>
<td></td>
<td>88 926 130</td>
<td>120-6968</td>
</tr>
<tr>
<td></td>
<td>88 926 105</td>
<td>120-6969</td>
</tr>
</tbody>
</table>

**Plug-in Timers**

8 pin plug-in base

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>24VDC</td>
<td>88 926 105</td>
<td>120-6967</td>
</tr>
</tbody>
</table>
| 12 pin plug-in base

- 12 to 240V ac/dc
- 120-6967

- 24VDC to 240VAC
- 120-6968

**Solid State Timers**

H3DK Series
Multirange Electronic Timers - continued

**Multifunction (4) Timer**
- 4 supply initiated functions: Delay On Operative, Interval, Symmetrical Recycling On/Off, Symmetrical Off/On
- Dual voltage
- Multi-time range (to 60 minutes)
- SPDT relay output (8A)
- LED indication of supply and relay status
- DIN rail or surface mounting
- 17.5mm wide

Supply Voltage Un
- 24V ac/dc / 110V ac 48 - 63Hz
- 24V ac/dc / 230V ac 48 - 63Hz

Supply variation
- 85 - 115% of Un

Power consumption (@ 1.15 x Un)
- AC: 3.9VA (110V), 13VA (230V)
- DC: 0.69W (24V)

Time delay
- Seconds: 0.5 - 10, 2 - 60
- Minutes: 0.2 - 2.5, 2 - 60

Repeat accuracy
- ±0.5% at constant conditions

Reset time
- 100ms

Ambient temperature
- -20 to +60°C

Output
- SPDT relay

Electrical life
- ≥100,000 ops @ rated load

Housing (UL94-V0)
- Orange flame retardant

Weight
- 66g

Terminal conductor size
- ≤2x 2.5mm² solid or stranded

**Multifunction (6) Timer**
- 2 supply / 4 switch initiated functions: Delay On Operative (2 switch / 1 supply initiated), Delay Off (within 60 minutes), SPDT relay output (8A)

Supply Voltage Un
- 24V ac/dc / 110V ac 48 - 63Hz
- 24V ac/dc / 230V ac 48 - 63Hz

Supply variation
- 85 - 115% of Un

Power consumption (@ 1.15 x Un)
- AC: 0.64VA (24V), 2.3VA (110V), 4.8VA (230V)
- DC: 0.59W (24V)

Time delay
- Seconds: 0.5 - 60
- Minutes: 0.5 - 60

Repeat accuracy
- ±0.5% at constant conditions

Reset time
- 100ms

Ambient temperature
- -20 to +60°C

Output
- SPDT relay

Output rating
- AC1 - 250V ac 8A (2000VA)
- AC15 - 250V ac 5A (no), 3A (nc)
- DC1 - 25V dc 6A (200W)

Electrical life
- 150,000 ops @ rated load

Housing (UL94-V0)
- Orange flame retardant

Weight
- 70g

Terminal conductor size
- ≤2x 2.5mm² solid or stranded

**Zelio Time Tamper-proof ON-delay Timer (RE7T)**
- ON-delay timer
- Protection of settings with sealable transparent cover
- Wide time range
- Wide-range supply voltage
- External setting of time delay with potentiometer (RE7TP)
- Printed timing and wiring diagrams on side
- Very compact

Supply Voltage Un
- 24V - 110VAC to 240VAC

Ambient temperature
- -20°C to 50°C

Output
- 1 or 2 (BA) c/o relays

Adjustable delay time
- 0.05s - 300hrs over 10 time ranges

Contact material
- AgNi

Pusher standards
- IEC 61812-1

Electrical Life
- 150,000 ops

Dimensions
- H=89, W=22.5, D=80

**Zelio Time Economic - ON-delay Timer (RE8T)**
- ON-delay timer
- Protection of settings with sealable transparent cover
- LEDS indicating relay energisation and time delay
- Printed timing and wiring diagrams on side
- Very compact

Supply Voltage Un
- 24V, 110VAC to 240VAC

Ambient temperature
- -20°C to 50°C

Output
- SPDT relay 5A (no), 3A (nc)

Reset time
- 250 ms

Contact material
- AgNi

Pusher standards
- IEC 61812-1

Electrical Life
- >100,000 ops

Dimensions
- H=78, W=22.5, D=80

**RTMA miniature 2 & 4 Pole Plug-In Timer**
- Mono-function delay on energisation
- Multi-range (0.1s to 100 hours in 7 selectable ranges)
- Excellent noise resistance
- Output: 2 or 4 timed changeover relay 5A @ 230V
- Option to select instantaneous relay output
- 2 LED status indicators
- Precision timing by micro-controller
- CUL approved and UL recognised

Supply Voltages
- 12V dc, 24V dc, 24V ac

Operating Temperature
- -20 to 60°C

Weight
- 55g

Dimensions
- 21x27x67mm

Contacts
- 2 or 4 SPDT 5A

Electrical Life
- >100,000 ops

Dimensions
- 21x27x67mm

Weight
- @ 230V ac resistive
- @ 5A/240V ac resistive

H = 89, W = 17.5, D = 59

---

**Order Code**

<table>
<thead>
<tr>
<th>Multifunction (4) Timer</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>M1MT9 24/230V</td>
<td>851-9498</td>
</tr>
<tr>
<td>M1MT9 24/110V</td>
<td>851-9601</td>
</tr>
</tbody>
</table>

**Multifunction (6) Timer**

<table>
<thead>
<tr>
<th>Multifunction (6) Timer</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>M10MT 24/230V</td>
<td>851-9510</td>
</tr>
</tbody>
</table>

**True Delay Off (Delay On Release)**

Supply / monitoring voltage Un
- 24V ac/dc / 110V ac 48-63Hz
- 24V ac/dc / 230V ac 48-63Hz

Supply variation
- 85 - 115% of Un

Power consumption (@ 1.15 x Un)
- AC: 12.8VA (230V)
- DC: 0.62W (24V)

Time delay
- Seconds: 0.5 - 10, 2 - 60
- Minutes: 0.5 - 10

Repeat accuracy
- ±0.5% at constant conditions

Reset time
- 100ms

Ambient temperature
- -20 to +60°C

Output
- SPDT relay

Output rating
- AC1 - 250V ac 8A (2000VA)
- AC15 - 250V ac 5A (no), 3A (nc)
- DC1 - 25V dc 6A (200W)

Electrical life
- 100,000 ops @ rated load

Housing (UL94-V0)
- Orange flame retardant

Weight
- 70g

Terminal conductor size
- ≤2x 2.5mm² solid or stranded

H = 89, W = 17.5, D = 59

---

**RTMA miniature 2 & 4 Pole Plug-In Timer**

<table>
<thead>
<tr>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21x27x67mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Contacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 or 4 SPDT 5A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>21x27x67mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Life</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;100,000 ops</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>55g</td>
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<table>
<thead>
<tr>
<th>Max Reset Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>230ms</td>
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</tbody>
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**Order Code**

<table>
<thead>
<tr>
<th>RTMA miniature 2 &amp; 4 Pole Plug-In Timer</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>RE8TA11BU</td>
<td>423-3086</td>
</tr>
<tr>
<td>RE8TA11BU</td>
<td>423-3232</td>
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<td>423-4232</td>
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<tr>
<td>RE8TA11BU</td>
<td>423-4244</td>
</tr>
</tbody>
</table>
### TMR48A Analogue Panel Mounting

**Electronic Timer**

Electronic timer in 48 DIN housing with rear connections compatible with standard 8-pin relay socket. Can be panel mounted, base and DIN rail mounted using relay socket accessories.

- **Function:**
  - Multi-function (8 functions with optional timing inhibit gate)
  - Multi-range (0.02s to 300 hours in 14 ranges)
  - 12 to 240V dc, 24V ac to 240V ac multi-voltage on 2 pins

#### Specifications:
- **Electrical Life:** 100,000 ops
- **Repeat Accuracy:** ±0.5% of set value @ 25°C
- **Max Reset Time:** 100ms

#### Connections:
- **Pin:**
  - Common for contact A
  - Supply (negative if DC)
  - Timing inhibit gate (negative if DC)
  - N/C contact B

#### Accessories:
- **Description:**
  - 48x48 DIN case, 45 x 45 cut-out, D. Bezel & Knob 16.8, D. behind bezel 80
  - 2 LED status indicators
  - Gate inhibit on all timing functions
  - Precision timing by micro-controller

#### Price Each
- **Description:**
  - 48x48 DIN case, 45 x 45 cut-out, D. Bezel & Knob 16.8, D. behind bezel 80
  - 2 LED status indicators
  - Gate inhibit on all timing functions
  - Precision timing by micro-controller

### TMR48L Analogue Panel Mounting

**Electronic Timer**

Electronic timer in 48 DIN housing with rear connections compatible with standard 11-pin relay socket. Can be panel mounted, base and DIN rail mounted using relay socket accessories.

- **Function:**
  - Multi-function (8 functions with optional timing inhibit gate)
  - Multi-range (0.02s to 300 hours in 14 ranges)
  - 12 to 240V dc, 24V ac to 240V ac multi-voltage on 2 pins

#### Specifications:
- **Electrical Life:** 100,000 ops
- **Repeat Accuracy:** ±0.5% of set value @ 25°C
- **Max Reset Time:** 100ms

#### Connections:
- **Pin:**
  - Common for contact A
  - Connect to pin 2 for function G
  - N/C contact A
  - Timing inhibit gate (negative if DC)

#### Accessories:
- **Description:**
  - 11 Pin Relay Base
  - 2 LED status indicators
  - Gate inhibit on all timing functions
  - Precision timing by micro-controller

#### Price Each
- **Description:**
  - 11 Pin Relay Base
  - 2 LED status indicators
  - Gate inhibit on all timing functions
  - Precision timing by micro-controller
**Multirange Electronic Timers - continued**

**TMR48X Analogue Panel Mounting**

**Electronic Timer - continued**

<table>
<thead>
<tr>
<th>Connections</th>
<th>Connections</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pin 1 Common for contact A</td>
<td>Pin 5 N/C contact B</td>
</tr>
<tr>
<td>Pin 2 Supply (negative if DC)</td>
<td>Pin 6 N/O contact B</td>
</tr>
<tr>
<td>Pin 3 N/O contact A</td>
<td>Pin 7 Supply (positive if DC)</td>
</tr>
<tr>
<td>Pin 4 N/C contact A</td>
<td>Pin 8 Common for contact B</td>
</tr>
</tbody>
</table>

248838

**Process Control, Timers & Counters**

**Automation**

Contact SPCO

Operating voltage range 90-110%

Reset time 0.5s max.

Repeat accuracy

DIN 48 x 48 Multifunction

On-Delay - H3AM

Large Display

- Large easy to read display
- Wide supply voltage 100 to 240Vac
- Different coloured moving pointers indicates both set and remaining times
- Wide time ranges (three units cover 0.2s to 60h)
- User configurable output configuration
- Sealed to IP65
- Manual setting knob
- Conforms to IEC61812-1, IEC60664-1

UL Recognised and CSA approved

Operating modes

- Eight selectable
- Time ranges: Selectable between 0.1s to 9990hr full scale
- Repeat accuracy: ±0.3%
- Reset time: 0.5s max.
- Contact: SPCD

Operating voltage range 90-110%

Price Each

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>88 886 116</td>
</tr>
<tr>
<td>9 Pin Relay Base</td>
</tr>
</tbody>
</table>

**Digital Multifunction - H3CAA**

- DIN48 body size
- Eight operating modes and selectable time range between 0.1s and 9.99 hours
- Programmed via five front panel "fold down" push rotary switches
- LCD bar display indicates remaining time and control output status
- Separate mounting adaptor available for front panel mounting
- CSA and SEV approved
- UL Recognised

Operating mode

- Eight selectable
- Contact rating: 3A @ 250V ac/60Hz
- Operating voltage: 24 to 240V ac or 12 to 240V dc across same input terminals
- Reset time: 2 to 10
- Contact: SPCD

Operating voltage range 90-110%

Price Each

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>TimerH3CA-A-306</td>
</tr>
<tr>
<td>Chassis socket</td>
</tr>
<tr>
<td>Panel mounting adaptor</td>
</tr>
</tbody>
</table>

**On-Delay - H3AM**

Large Display

- Six operating modes and six time ranges between 0.1s and 99.9hrs
- Supplied with panel mounting bracket

Operating modes On delay

<table>
<thead>
<tr>
<th>Time range</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
<th>5+</th>
<th>10+</th>
<th>25+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1s to 60hrs</td>
<td>H3AM-M-8500</td>
<td>186-053</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.2s to 12hrs</td>
<td>H3AM-M-8300</td>
<td>186-065</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Solid-state Timer - H3CR**

DIN 48 x 48 Multifunction

- Lloyds/UK approvals
- Conforms to EN61812-1 and EN60064-1 (VDE0110)
- 4K/2 for Low Voltage and EMC Directives
- UL Recognised and CSA Approved
- Six-language instruction manual provided

Price Each

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>627814</td>
</tr>
</tbody>
</table>

**Digital, Programmable LED Display**

- 9 programmable modes of operation
- Bright green LED display ensures clarity of view, even at distance
- 5 timing ranges from 1 sec. to 100 hrs., including a 24 hr. range
- Two tier access code for program security plus tamper proofing
- Selectable up/down timing
- Programmable buzzer on output option

Price Each

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>330-8546</td>
</tr>
<tr>
<td>Panel Mount Adaptor</td>
</tr>
</tbody>
</table>

**Digital Multifunction - UDT**

- 6 programmable modes of operation
- Bright green LED display ensures clarity of view, even at distance
- 5 timing ranges from 1 sec. to 100 hrs., including a 24 hr. range
- Two tier access code for program security plus tamper proofing
- Selectable up/down timing
- Programmable buzzer on output option

Price Each

<table>
<thead>
<tr>
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</tr>
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<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>767-074</td>
</tr>
</tbody>
</table>

**Transmitters**

3040vac to 120vac

Price Each

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mfrs. List No.</td>
</tr>
<tr>
<td>------------------</td>
</tr>
<tr>
<td>645-400</td>
</tr>
</tbody>
</table>

**Digital Multifunction - UDT**

- Large easy to read display
- Wide supply voltage 100 to 240Vac
- Different coloured moving pointers indicates both set and remaining times
- Wide time ranges (three units cover 0.2s to 60h)
- User configurable output configuration
- Sealed to IP65
- Manual setting knob
- Conforms to IEC61812-1, IEC60664-1

UL Recognised and CSA approved

Operating modes On delay

<table>
<thead>
<tr>
<th>Time range</th>
<th>Mfrs. List No.</th>
<th>Order Code</th>
<th>1+</th>
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<td></td>
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</tbody>
</table>

**Solid-state Timer - H3CR**

DIN 48 x 48 Multifunction

- Lloyds/UK approvals
- Conforms to EN61812-1 and EN60064-1 (VDE0110)
- 4K/2 for Low Voltage and EMC Directives
- UL Recognised and CSA Approved
- Six-language instruction manual provided

Price Each

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</tr>
<tr>
<td>627814</td>
</tr>
</tbody>
</table>
Digital Multifunction - 814

- Six operating modes and eleven time ranges between 0.01 sec and 9999hrs
- Four digit LCD indicates set time, time remaining and output contact status
- Connection is by standard 8 or 11 pin socket
- Panel mounting bracket supplied
- Operating modes: A: delay on energise, B: single shot (timing on impulse)
- Sealed to IP64
- 8A SPCO relay output
- Four digit LCD indicates set time, time remaining and output contact status
- Six operating modes and eleven time ranges between 0.01 sec and 9999hrs
- 0.1s to 999.9s or 1s to 99m59s time ranges
- Push button rotary switch setting
- Memory backup prevents reset on momentary interruption of supply (105-976) and up to 10 minutes loss (105-979)
- Panel mounting using separate adaptor or surface mounting using surface/DIN rail socket
- UL Recognised and CSA approved

Digital - HSCNLED

LED Display

- Push button rotary switch setting
- 4 digit LED display indicates time elapsed
- 0.1s to 999.9s or 1s to 99m59s time ranges available
- Memory backup prevents reset on momentary interruption of supply (105-976) and up to 10 minutes loss (105-979)
- Panel mounting using separate adaptor or surface mounting using surface/DIN rail socket
- UL Recognised and CSA approved

Digital Multifunction Timer DIN 1/16

LT4H

- 2-colour backlight LCD display of elapsed and set time
- Easy time setting by seesaw buttons
- Cover also in black (please order: timer + cover ATLS0811J)
- Power failure memory by EPROM
- Standards: CE, UL, CSA
- Installation: front and DIN-rail mounting

Relay Timer Base

Time Cube - CT2 and CT3

The Time Cube modules are electronic timers that are designed to be inserted between a standard plug-in relay and its socket, enabling the relay to be operated as a timer relay. The CT modules are able to accept any standard 8 or 11 pin RELECO series C2 or C3 relay as well as those from any other supplier.

Relay Output

- Voltage: 120/240V ac/24V dc
- Sockets: 104-630, 104-631, 104-632, 104-633

Multirange - H2C

- Synchronous motor operation
- Five time ranges selectable via screwdriver slot recessed into timer face
- 50/60Hz operation, selectable
- Fixed and moving pointers and time out neon indicator
- Reset activated by removal of supply voltage
- Panel mounting using separate adaptor or 11pin plug-in mounting
- CSA and SEV approved
- UL Recognised

Electromechanical Timers

- Range shown for each model.
- The relay coil voltage must be in the supply voltage range shown for each model.

Supplies Voltage

- Mfrs. List No.: 184-993
- Order Code: 1+ 5+ 10+ 25+
- Price Each: 184-993

Contact Type

- Connection: Screw
- Price Each: 184-993

Timers Order Code

- Price Each: 184-993

Assembly Order Code

- Price Each: 184-993
Electromechanical Elapsed Hour Counters

### Hour Meter
TH6 Series

- Supply voltage: 220V AC ±15%
- Frequency: 50 / 60 Hz (switchable)
- Counting Range: 0 to 99999.9 / 0 to 99999.9
- Min. counting unit: 0.1 hour (6 min)
- Ambient temperature: -10°C to 50°C
- Panel thickness: 1 - 9 mm
- Protection: IP30, IP40
- Dimensions (WxHxD): 48 x 24 x 66mm

#### Non-Reset - Type 633
Miniature PCB and Panel Mounting

- PCB Mounting: Connections: 1 + V dc: 3 Disable output, 5 No connection: 2 -0V, 1 - V dc: 2 Disable output
- Panel Mounting: Connections: H=20, W=30, D=34 (behind bezel excl. pins)
- Mounting case: Panel cut-out = 46 x 46 mm (behind bezel excl. pins)
- Panel thickness: 1 - 9 mm
- Display: 7-digit, 999999.9 (DC), 9999999.9 (AC)
- Reading accuracy: AC 1 / 100h = 0.6 min = 36s, DC 1 / 10h = 6 min = 360s
- Voltage: 24 VAC / 50Hz, 240 VAC
- Frequency: 50/60 Hz (switchable)
- Dimensions (WxHxD): 48 x 48 x 66mm
- Weight: 51g

#### Non-Reset - Type 891
Panel Mounting

- H=24, W=48, D=39 (behind panel)
- Panel cut-out = 22 x 48 (without bezel)
- Bezels: A: 29x54, panel cut-out = 25 x 60, B: 48x48, panel cut-out = 45 x 45

#### Non-resettable 7-digit elapsed hour counters
- Synchronised motor drive, resolution 0.01hrs
- Polycarbonate housing with spring-fit clip
- Two bezels supplied for panel mounting
- Connection by screw or 6.3 (0.25") fast-on terminals

- Capacity: 99999.99 hrs
- Supply Voltage: 10 - 80 VDC
- Current Consumption: 5mA average, 10mA max. during pulsing
- Operating temp. Range: -20°C to +70°C
- Protection: IP41
- Dimensions: H = 48 mm, W = 48 mm, D = 32 mm (behind panel)
- Weight: 51g

### Non-Reset

#### DIN 43700 Standard

- Panel cut-out = 46 x 46
- Panel cut-out using either bezel: 51 dia or 46 x 46

#### Electro-mechanical Elapsed Hour Counters Series HK46

- 7-digit electromechanical hour counter
- Installation by front plate
- Mounting by snap fastener or fork clamp
- Electrical connection by screw or 6.35 (0.26") fast-on terminals

- Display: 7-digit, 999999.99 (AC), 999999.9 (DC)
- Approx. 4mm high, white on black, red
- Decimals display: decimal display
- Bezels: 55 x 55, 72 x 72 mm
- Reading accuracy: AC 1 / 100h = 0.6 min = 36s, DC 1 / 10h = 6 min = 360s
- Voltage: 12-48 V dc
- Frequency: 50/60 Hz can be selected
- Panel cutout using either bezel: 55 x 55
- Panel cutout = 46 x 46 mm
- Operating temp. Range: -20°C to +70°C
- Protection: IP41
- Dimensions: H = 48 mm, W = 48 mm, D = 32 mm (behind panel)
- Weight: 51g

**Price Each**

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Order Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>115Vac</td>
<td>233-225</td>
</tr>
<tr>
<td>240Vac</td>
<td>233-237</td>
</tr>
</tbody>
</table>
Electronic Elapsed Hour Counters

Panel Mounting - Type 231

Connections:
1. Reset
2. Enable
3. Supply L (common)
4. Supply N

H = 24, W = 48, D = 31.5 (overall)
Panel cut-out = 22.2 x 45

- Elapsed hour meter housed in DIN case
- Sealed to IP65
- Finger proof protected to IP20
- Adjustable display angle
- Separate start input connection
- 4 figures - counts to 9999
- High contrast, white or black display figures
- Wide temperature range, low power consumption, high shock resistance
- Remote electrical reset facility
- Long life (50 million pulses)
- Non-volatile memory allows data retention for 25yrs
- Remote electrical reset facility
- Very low power consumption
- IP65
- Rated IP65
- IP66
- Finger proof protection
- Impact and corrosion resistant

Supply Voltage: 80VAC to 230VAC
Separate start input connection

Technical data:
- Connection: 2m high-flexible PVC wire radial
- Width: 19 mm, Height: 46 mm
- Material, axis: stain resistant
- Weight: AC 52 g, DC 62 g
- Life time: > 50 years
- Operation temperature: -10°C to +50°C
- Voltage tolerance: ±10% 10% 50/60Hz
- Pulse frequency: 10Hz
- Max. count frequency: 10Hz
- Min. pulse time: 50ms
- Power Consumption: 5V, 12Vdc: 80mW, 24Vdc: 160mW, 230Vac: 600mW
- Duty factor @ 25°C: 100%
- Min. power consumption: 130 mW
- Life time: > 50 years
- Voltage range: 12-48V dc (nom), 9V dc (min), 60V dc (Max.)
- Temp. range: -40°C to +85°C
- Current consumption: 50mA
- Pin connections: P + V - N V (common)
- I Signal: Pulse input
- R Reset*
- *At supply voltage for 2s (max)

Note: For proper mechanical support, all 4 pins should be soldered to the PCB.

Electronic mechanical pulse counter
AV15.01/W15.51
with manual zeroing, adding, 5-digit

- 6-digit
- IP65 protection
- Very low power consumption
- Machine solderable and washable
- High shock resistance

Totalising Counter - Miniature

HENGSTLER

PCB Mounting - Non Reset

- 6-digit
- IP65 protection
- Very low power consumption
- Machine solderable and washable
- High shock resistance

4 Digit Reset

HENGSTLER

- Miniature 6-digit non-reset counters for panel mounting
- Housed in translucent plastic case with magnifier window
- DC types feature high shock resistance with solder pin connections
- 230Vac type has screw terminal connections
- dc: H = 20, W = 30, D = 34 (behind bezel, excl. pins)
- ac: H = 20, W = 30, D = 43 (behind bezel, excl. tmb)

Panel cut-out = 14.2 x 27

Price Each

<table>
<thead>
<tr>
<th>Order Code</th>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>10+</td>
</tr>
<tr>
<td>50+</td>
<td></td>
</tr>
</tbody>
</table>

Technical data:
- Connection: 2m high-flexible PVC wire radial
- Width: 19 mm, Height: 46 mm
- Material, axis: stain resistant
- Weight: AC 52 g, DC 62 g
- Life time: > 50 years
- Operation temperature: -10°C to +50°C
- Voltage tolerance: ±10% 10% 50/60Hz
- Pulse frequency: 10Hz
- Max. count frequency: 10Hz
- Min. pulse time: 50ms
- Power Consumption: 5V, 12Vdc: 80mW, 24Vdc: 160mW, 230Vac: 600mW
- Duty factor @ 25°C: 100%
- Min. power consumption: 130 mW
- Life time: > 50 years
- Voltage range: 12-48V dc (nom), 9V dc (min), 60V dc (Max.)
- Temp. range: -40°C to +85°C
- Current consumption: 50mA
- Pin connections: P + V - N V (common)
- I Signal: Pulse input
- R Reset*
- *At supply voltage for 2s (max)

Order Code

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Price Each</th>
</tr>
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<tbody>
<tr>
<td>1+</td>
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<td></td>
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Technical data:
- Connection: 2m high-flexible PVC wire radial
- Width: 19 mm, Height: 46 mm
- Material, axis: stain resistant
- Weight: AC 52 g, DC 62 g
- Life time: > 50 years
- Operation temperature: -10°C to +50°C
- Voltage tolerance: ±10% 10% 50/60Hz
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- Pin connections: P + V - N V (common)
- I Signal: Pulse input
- R Reset*
- *At supply voltage for 2s (max)

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<tr>
<td>50+</td>
<td></td>
</tr>
</tbody>
</table>

Notes:

- Elapsed hour meter housed in DIN case
- Sealed to IP65
- Finger proof protected to IP20
- Adjustable display angle
- Separate start input connection
- 4 figures - counts to 9999
- High contrast, white or black display figures
- Wide temperature range, low power consumption, high shock resistance
- Remote electrical reset facility
- Very low power consumption
- IP65
- Rated IP65
- IP66
- Finger proof protection
- Impact and corrosion resistant

Supply Voltage: 80VAC to 230VAC
Separate start input connection

Technical data:
- Connection: 2m high-flexible PVC wire radial
- Width: 19 mm, Height: 46 mm
- Material, axis: stain resistant
- Weight: AC 52 g, DC 62 g
- Life time: > 50 years
- Operation temperature: -10°C to +50°C
- Voltage tolerance: ±10% 10% 50/60Hz
- Pulse frequency: 10Hz
- Max. count frequency: 10Hz
- Min. pulse time: 50ms
- Power Consumption: 5V, 12Vdc: 80mW, 24Vdc: 160mW, 230Vac: 600mW
- Duty factor @ 25°C: 100%
- Min. power consumption: 130 mW
- Life time: > 50 years
- Voltage range: 12-48V dc (nom), 9V dc (min), 60V dc (Max.)
- Temp. range: -40°C to +85°C
- Current consumption: 50mA
- Pin connections: P + V - N V (common)
- I Signal: Pulse input
- R Reset*
- *At supply voltage for 2s (max)

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<tr>
<td>50+</td>
<td></td>
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</tbody>
</table>
Electromechanical Counters - continued

6 and 8 Digit Totalising Counters

Panel Mounting

- 6 and 8 digit indication
- Manual or non-reset
- Push on crimp/socket connectors supplied
- Up to 25Hz count speed
- Sealed to IP40

Panel cut-out=27.52, H=40, W=56
Fixing centres=31, Depth behind panel=72.5

Supply Voltage

dc Types
12V 10% 100% 24V 10% 240V

ac Types
110/230V 100% 220/240V 100% 440V 100%

Duty Factor at 25°C
100% 100% 250ms

Power Consumption
2.5W 100% 25W 100%

Max. Count Speed
25Hz 10Hz 100Hz

Min. pulse length
25ms 9 reset pulse 50ms 9 reset pulse

Min. pause between pulses
25ms 50ms 250ms

Frequency/Ripple Factor
50Hz ±10% 50Hz ±10%

Power
2.2W 2.4VA

Max. reset on-time
20ips 10ips

Max. reset frequency
1 per sec 1 per 2 secs

Temperature Range
-10°C to +50°C

Counter meets environmental specification
IP40

Price Each
223078

6 Digit - Manual Reset

240VAC 925-860

240V DC 825-871

8 Digit - Non-reset

24VDC 925-900

5/6 Digit Presettable - FE514-6, FE319-55

HENGSTER

Panel Mounting

- Preset value continuously visible
- Manual or electric reset
- 5-digit indication
- Sealed to IP40
- Push-on crimp/socket connectors supplied
- Up to 25Hz count speed
- Changeover output contacts 100VA

Panel cut-out=52x52
H=75, W=60
Fixing centres=63
Depth behind panel=72.5

Supply Voltage
24V ±10% ±10%

Power Consumption
2.5W(120V) 2.75W(160V)

Max. count speed
25Hz 25Hz

Min. Pulse count
20ms (200ms)

Duty factor at 25°C
100% (20%) 100% (10%)

Pulse/pause ratio
1:1 (1:5) 1:1 (1:10)

Max. reset frequency
1 per sec 1 per 2 secs

Max. reset on-time
(2) Mins

Price Each
223120

Manual Reset

240VAC 925-500

240VDC 925-524

Manual/Electrical reset

24VDC 925-536

Manual 6 digit and electrical presettable 5 digit counters with reset facility

Counters count from zero to the preset figure

SPDT contacts (2A @ 240VAC)

Push-on solder connectors supplied

The following accessories are available:

- Wiring socket: The socket plugs onto the rear of the counter, and is suitable for both manual and electrical/manual types. Rear connections are suitable for soldering or 2.8mm high wire connectors.

- Transparent cover: A dust and splashproof cover with transparent window, allowing operation of pushbuttons. The cover consists of a metal frame, gasket, flexible transparent window and fixing hardware and gives protection to the operation of pushbuttons.

- Push-on crimp/socket connectors supplied

- Manual 6 digit and electrical presettable 5 digit counters with reset facility

- Counters count from zero to the preset figure

- SPDT contacts (2A @ 240VAC)

To preset the counter, depress the reset button and key in the desired figure. Release the button. The preset buttons are then locked which prevents accidental alteration of the preset figure. No counting pulses can be received while the counter is being reset. Reset of the manual unit is achieved by pressing the reset button, reset of the electrical/manual unit is operated by an external pulse.
### Electronic Counters

#### 8 Digital Dual Counter and Rate Indicator
- LCD, reflective or green/red backlighting. 0.45” (11.7mm) high digits
- Optional relay and serial output module
- Count speeds up to 20 kHz
- Programmable counting for count and rate
- Bi-directional counting with up/down control or quadrate sensing
- NEMA/IEPS sealed front bezel

<table>
<thead>
<tr>
<th>Display</th>
<th>Reflective or dual colour backlit 8 digit LCD display</th>
</tr>
</thead>
<tbody>
<tr>
<td>Input Ranges</td>
<td>Input A - DIP switch selectable to accept pulses from a variety of sources, V_{max} = 28 V dc</td>
</tr>
<tr>
<td>Rate Display</td>
<td>6 digit display, max. Frequency 0.01Hz to 20 kHz</td>
</tr>
<tr>
<td>Count Display</td>
<td>Max. frequency 20 kHz for all count options without setpoint option</td>
</tr>
<tr>
<td>Optional Cards</td>
<td>Relay Output: Single-FORM-C relay 1A @ 30V dc; discrete 3A @ 125V ac</td>
</tr>
<tr>
<td>Zero Set</td>
<td>Baud rate from 300 to 19200 baud</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-35 to 75°C</td>
</tr>
<tr>
<td>Power Supply</td>
<td>9 - 28VDC, 125mA Max. or 250VAC, 50/60Hz with additional power supply module MLPS</td>
</tr>
<tr>
<td>Dimensions</td>
<td>(WxHxD) 74.9x39.1x43.4mm</td>
</tr>
</tbody>
</table>

#### Single and Dual Preset, One Preset + Batch - 4545 Series

4 (or 8) Digit LED Display

- LCD, reflective or green/red backlighting. 0.45” (11.7mm) high digits
- Optional relay and serial output module
- Count speeds up to 20 kHz
- Programmable counting for count and rate
- Bi-directional counting with up/down control or quadrate sensing
- NEMA/IEPS sealed front bezel

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<tbody>
<tr>
<td>Input Ranges</td>
<td>Input A - DIP switch selectable to accept pulses from a variety of sources, V_{max} = 28 V dc</td>
</tr>
<tr>
<td>Rate Display</td>
<td>6 digit display, max. Frequency 0.01Hz to 20 kHz</td>
</tr>
<tr>
<td>Count Display</td>
<td>Max. frequency 20 kHz for all count options without setpoint option</td>
</tr>
<tr>
<td>Optional Cards</td>
<td>Relay Output: Single-FORM-C relay 1A @ 30V dc; discrete 3A @ 125V ac</td>
</tr>
<tr>
<td>Zero Set</td>
<td>Baud rate from 300 to 19200 baud</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-35 to 75°C</td>
</tr>
<tr>
<td>Power Supply</td>
<td>9 - 28VDC, 125mA Max. or 250VAC, 50/60Hz with additional power supply module MLPS</td>
</tr>
<tr>
<td>Dimensions</td>
<td>(WxHxD) 74.9x39.1x43.4mm</td>
</tr>
</tbody>
</table>

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**Automation**

**Process Control, Timers & Counters**

**Element 14**

**farnell.com**

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**Process Control, Timers & Counters**

**Farnell**

**P 2955**

**Date: 06-09-12 time: 21:49**

**C = CYAN  M = Magenta  Y = Yellow  B = Black/UKBK1**

**Counter operation 731-924: 1 Preset, 731-936: 2 Preset,**

**Input Ranges Input A - DIP switch selectable to accept pulses from a variety of sources,**

**V_{max}**

**Display Reflective or dual colour backlit 8 digit LCD display**

**Dimensions (WxHxD) 74.9x39.1x43.4mm**

**Power Supply 9 - 28VDC, 125mA Max. or 85 to 250VAC, 50/60Hz with additional power supply**

**Operating Temperature 0°C to +55°C**

**Count Display Max. frequency 20 kHz for all count options without setpoint option**

**User Input Programmable input, V_{max} = 28 V dc, response time**

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**WACHENDORFF**

**29046303**

**H = 24; W = 48; D = 45mm (overall)**

**Connections:**

1 Supply +ve (common) 2 Reset 4 Supply -ve

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**CURTIS**

**Type 210**

- Pulse counter housed in 24x48mm DIN case sealed to IP65 with fingerprint protected terminals to IP20
- Electrical reset and electrical/manual reset versions
- Supply voltage connection permits permanent display if required
- Separate input connection for monitored supply
- Non-volatile memory allows data retention for 25 years
- Wide temperature range, low power consumption and high shock resistance

<table>
<thead>
<tr>
<th>Price Each</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mftrs. List No.</td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>210-1673-001A (K01)</td>
</tr>
<tr>
<td>210-1673-003A (K02)</td>
</tr>
</tbody>
</table>

**Electronic LED-preselection counter with two presets**

**Series NE216**

- Main counter with two presets
- 8-digit totalizer
- Positive and negative counting range for main counter and totalizer
- Batch counter w/o preset
- Start value can be programmed
- Scaling factor can be programmed: 0.0001 - 9999.99
- Preset mode can be programmed as progressive preselection or trailing preselection

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**TROUBLESHOOTING TIPS**

Chat online to one of our technical engineers at farnell.com.
Hengstler Tico 732 models are available with LCD displays and in different versions dependent on the supply voltage and number of outputs required. The multi-functionality of Tico 732 is due to the fact they can be programmed as an impulse or preset counter, time meters with or without presets, as a tachometer with or without limit values, or as a shift or batch counter. For each mode of operation there are programmable parameters which are customised according to the specific tasks. Pulse level: the new TTL input allows the use of a much wider range of pulse generators including RS422 line drivers. Time Counter: now stops when the preset value has been reached. Shift counter: now available with preset values to provide two separate preset counters in one housing. In addition, the total value (sum) of both counters is recorded and displayed. Batch counter: Toggles between batch counter mode and totalising counter mode; the total value (sum) of both counters is recorded and displayed. The Tico 732 series of multi-function counters from Hengstler are provided with extended functions that increase their versatility and further enhance the range of possible applications. The Tico 732 models are available with LCD displays and in different versions dependent on the supply voltage and number of outputs required. The multi-functionality of Tico 732 is due to the fact they can be programmed as an impulse or preset counter, time meters with or without presets, as a tachometer with or without limit values, or as a shift or batch counter. For each mode of operation there are programmable parameters which are customised according to the specific tasks. Pulse level: the new TTL input allows the use of a much wider range of pulse generators including RS422 line drivers. Time Counter: now stops when the preset value has been reached. Shift counter: now available with preset values to provide two separate preset counters in one housing. In addition, the total value (sum) of both counters is recorded and displayed. Batch counter: Toggles between batch counter mode and totalising counter mode; the total value (sum) of both counters is recorded and displayed.
**Time Counters**

**LCD Display**
- Large 8.6mm character height
- Backlit models available for improved visibility in dimly lit environments
- Black and light grey cases available
- Key protect switch prevents accidental reset
- Low panel depth 46.5mm
- Variety of input options
- 7 digits, time range 0 to 3,999,999.9
- Dual time range 999,999.99 to 9,999,999.99
- 58mm to 9,999,999.99
- Self-powered by built-in battery, backlit models required
- 24V dc power supply
- UL Recognised CSA and VDE approved

Supply voltage: 24V dc

**Tacho LED**
- Position Indicator LED
- Counter LED
- Counter LCD
- Internal Lithium Battery

**Supply Voltage**
- Backlight type: 24V dc
- No required (internal battery)

**Multivoltage**
- High 24 to 240V ac/dc
- Low 0 to 2.4V ac/dc

**Non-voltage**
- Short circuit impedance 10K 
- Open impedance 750K 

**Operating temperature**
- -10°C to +55°C

**Storage temperature**
- -20°C to +60°C

**Counting Frequency**
- max. 7.5kHz (30Hz for contact input)

**Mounting**
- With clamping frame

**Bezel**
- 24x48, Panel Cut-Out: 22x45

**Function**
- Display: LED or LCD

**Supply Voltage**
- Voltage: 24V dc

**Order Code**
- Supply voltage: 24V dc

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**Electronic Indicators**

**Universal Intelligent Panel Meter**

The DM3800 is an intelligent digital panel meter that can accept inputs from a wide variety of sensors and display the signal digitally. The DM3800 is available in two versions, AC supply or DC supply. All functions are programmable via the integral front panel keys. The DM3800 supports TAML (Transfer Function Module Library) i.e. the ability to download custom functionality by means of standard modules available from the manufacturers website. This allows pre-written or custom control functions to be quickly and easily incorporated.

- Universal Input
- 6 Digit Display
- IP65 Sealed Front

**Supply Voltage**
- Voltage: 24V dc

**Order Code**
- Supply voltage: 24V dc

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**Digital Time Switches**

**D Line**

A range of digital time switches with an exclusive design, featuring a backlit white LCD display, plus extremely simple use with a two-line text menu and five pushbuttons, make the D Line products ideal for automating the functions of the installation. Thanks to the pioneering way in which vacation periods can be managed, the new D Line allows you to override the normal weekly program supply or incorporation of the year even through different years. The range includes versions with 1 and 2 channels, equipped with large capacity internal batteries so they are able to function during a blackout and an EEPROM permanent data store, to ensure that the scheduled program is followed and the date and hour settings are maintained even during a power failure.

**Input voltage**
- 230VAC

**Warranty**
- 5 years

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**Process Control, Timers & Counters**

**Counter/Timer/Tacho/Position Indicator - TICO 731**

**HENGSTLER**

- Counters with 8-digit LCD/6-digit LED displays
- Bi-directional position indicator with 6-digit LED display
- Time counters with 8-digit LCD displays
- Tachometers with 8-digit LED and 6-digit LED display
- Display only unit for PLC serial communication, 8-digit LCD display
- Bezel sealed to IP65
- Reset can be manual via keypad or external, and can be locked

**Function**
- Display: LED or LCD

**Supply Voltage**
- Voltage: 24V dc

**Order Code**
- Supply voltage: 24V dc

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**INTELLIGENT ONLINE BUYING SYSTEM PROVIDING**

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