CARLO GAVAZZI
Automation Components

CARLO GAVAZZI






Solutions

HVAC systems

HVAC systems

Solutions for

Air handling units **Heat pumps** **Chillers** **Roof tops** **Pellet burners**

ABOUT CARLO GAVAZZI

Carlo Gavazzi Automation is an international group active in the design, manufacture and marketing of electronic equipment targeted at the global markets of industrial and building automation.

Our history is full of firsts and our products are installed in a huge number of applications all over the world. With more than 80 years of successful operation, our experience is unparalleled.

We have our headquarters in Europe and numerous offices around the world.

Our R&D competence centres and production sites are located in Denmark, Italy, Lithuania, Malta and the People's Republic of China.

We operate worldwide through 22 of our own sales companies and also selected representatives in more than 65 countries, from the United States in the West to the Pacific Rim in the East.

Our core competence in automation spans three product lines: Sensors, Switches and Controls.

Our wide array of products includes sensors, monitoring relays, timers, energy management system, solid state relays, safety devices and fieldbus systems.

We focus our expertise on offering state-of-the-art product solutions in selected market segments.

Our customers include original equipment manufacturers of packaging machines, plastic-injection moulding machines, food and beverage production machines, conveying and material handling equipment, door and entrance control systems, lifts and escalators, as well as heating, ventilation and air-conditioning devices.

DESIGNED TO MEET MARKET REQUIREMENTS

It is becoming more and more important to have an energy-efficient integrated HVAC system for buildings. That is why HVAC components, such as heat pumps, rooftops, chillers and air handling units need more effective control and energy saving features to improve overall performance.

HVAC trends also show the increasing use of permanent magnet motors to increase system efficiency, greatly reducing the footprint while increasing performance.

Communication is crucial between the building management system and the components downstream. The use of protocols such as BACnet or MODBUS is becoming more and more common, involving components such as the main controllers, the compressor, the expansion valve, the energy meter and the softstarter.

Enhance performance with our monitoring relay solutions

- Various monitoring functions: phase sequence, phase loss and voltage level
- Compact dimensions

Increase system efficiency with our solutions for energy management

- Energy meters & power transducers
- Power analysers
- Current transformers
- Serial communications
- Solutions with BACnet communication
- Web-server solutions

Extend the lifetime of scroll compressors with easy to use soft starting solutions

- Dedicated solutions for scroll compressors
- 1- and 3-phase compact solutions
- 2- and 3-phase controlled solutions
- Integrated monitoring functions
- Modbus communication

Resistive heaters switching with solid state relays

- ON/OFF solid-state contactors
- Proportional controllers
- Wide range of 1-phase and 3-phase solutions
- Modular solutions

HVAC systems

Air handling units

Energy analysers	Soft starters	Variable frequency drives	Solid state relays	Energy/ power transducers	Monitoring relays	Solid state relays
EM340	RSGD	RVFF RVLF	RGC3P/RGC2P RGC1P/RGS1P RM1E	CPT-DIN ET340	DPD DWA01 DPB01/DPB51	RG RM RK

Carlo Gavazzi's comprehensive range of energy meters, energy analysers and power transducers keep your plant monitored 24/7.
The following communication protocols are available: Modbus, BACnet, M-bus and Profibus.
Our web server solutions also provide multi-site monitoring.
Our easy to use and reliable soft starter range, with extended ramp-up times, ensures smoother centrifugal fan starts.
An intelligent algorithm for current reduction and current balancing results in fewer electrical disturbances and less vibrations during starts.
A wide selection of solid-state relays offers analogue switching versions for the efficient control of resistor packs for heating or dehumidification and Zero Cross switching to reduce electrical spikes on the network.
Our compact monitoring relays for power factor monitoring allow the detection of broken belts in centrifugal fans.

- Efficiency improvement
- Easy access to monitored data via IT network
- Reduced maintenance and lower mechanical noise when fan starts
- Fewer electrical disturbances and lower current peaks
- Reduced air pressure shocks in the case of canvas ducts
- Optimal de-humidification

Heat pumps

Soft starters	Solid state relays	Monitoring relays	Energy meters/ analysers	Timers	Variable frequency drives	Electrome-chanical relays
RSBS/RSBD RSBS HP RSBT	RG RM RGC3P	DPA52	EM110 EM111 EM340	DAA51 DMB51	RVLF	RMIA

Carlo Gavazzi's comprehensive range of solid state relays for auxiliary heater switching also includes low noise versions so as to reduce disturbance to the supply network.
Slim energy meters are available for 1-phase applications.
Our wide range of monitoring relays provides phase loss, phase sequence, over and under-voltage monitoring.
The complete range for fixed speed scroll compressors consists of 1- and 3-phase dedicated to soft starters and 2- and 3-phase controlled solutions with a patented self-learning algorithm to limit scroll compressor start current. The RSBS and RSBT soft starters are compliant with EMC Class B (residential).

- Noise-free switching of auxiliary heaters
- Plug'n'play soft starting solutions
- Best-in class current reduction
- Compliant with the stringent requirements for noise emissions
- Easy to fit in electrical panels
- More protection for the compressor
- Quick detection of abnormal conditions
- Compatibility with permanent magnet motors

HVAC systems

Chillers

Monitoring relays	Switching power supplies	Soft starters	Power quality analysers	Energy analysers	Energy/ power transducers	Variable frequency drives
DPB52/DPB01 DPA52/DPA53 DLA71/DPD	SPDC/SPDM SPM/SPPC	RSBD/RSWT RSBT/RSGD	WM20 WM40 WM30	EM210 EM340	ET340 CPT	RVLF

Carlo Gavazzi's compact and cost-effective range of power supplies, timers for star/delta switching and monitoring relays are designed to meet your toughest specification requirements for panel mounting.
2-phase controlled solutions with current balancing, 3-phase scroll compressor soft starters up to 95 A with a dedicated algorithm for multi-scroll compressor applications.
Our solutions for energy management for DIN and panel mount are comprehensive and versatile for the monitoring and power analysis.
Modbus or BACnet communication ports are available for communication with controllers and BMS.

- Easy installation even in limited space
- Protection of compressors
- Reduction of starting current by 50%
- No settings required
- Improved efficiency
- Remote access to data
- Easy integration into existing communication networks

Roof tops

Monitoring relays	Switching power supplies	Soft starters	Power quality analysers	Energy meters/ analysers	Solid state relays	Timers
DPD DPA52 DPB01/DPB52	SPM SPDC/SPDM SPPC	RSBT RSWT RSBD	WM40 WM30 WM20	EM24	RGC3P RGC3A RGC1P	DAA51 DAC51

Carlo Gavazzi's range of energy meters and power analysers fulfil all requirements in terms of both features and costs, for remote monitoring of energy consumption.
The comprehensive communication protocols and web-server solutions allow flexible and easy integration.
We offer proportional controllers for heaters and fans. Our compact IP20 solutions with phase angle control for fan speed regulation (1-phase and 3-phase), also 2-phase solutions for resistive heater modulation (RGC2P) full cycle switching.
Our range of soft starters are able to provide integrated diagnostic functions for additional protection.

The related operational temperature range is up to 60°C.
The self-learning algorithm, which is active at every compressor start, ensures that the compressor always starts with the correct parameters.
Modbus communication is also available to transmit real-time data to the machine controller.

- Efficiency improvement
- Easy data transmission to the BMS or the controller
- Automatic settings
- Reliable operation even at high temperatures
- Compact and cost-effective solutions

Pellet burners

Inductive proximity sensors	Capacitive sensors	Solid state relays
ICB12 ICB18	CA30CA CD50 CA18	RM1A RP1

Carlo Gavazzi's compact and cost-effective series of solid state relays is widely known for its reliability and robustness for high switching frequencies of water pump or smoke fan.

Our ICB inductive sensors are used to detect the position of the dampers so as to direct the air flow where needed. Short circuit, reverse polarity and transients protection is assured.

Our new 4th generation of Tripleshield sensors CA30CA.. allows a dust alarm to be sent when the sensor gets dirty and needs to be cleaned.

A temperature alarm is sent when the temperature exceeds 60°C.

EMC immunity and high sensing capability ensure correct detection in all conditions, especially where pellet-dust remains on the reservoir surface.

- High switching frequency
- Silent and reliable operation even in harsh environments
- Safer operation of the burner
- Intelligent alarms
- Different configurations available, tailored to specific needs

Our expertise in scroll compressors

Soft starters	Monitoring relays	Soft starters
RSBS **RSBS HP**	**DPA52**	**RSBD** **RSBT**

In a heat pump, as well as in a rooftop or in a chiller unit, the compressor is the heart of the system. It supplies the inverse cycle and is also the most expensive and energy-consuming device in the machine. When starting, the scroll compressor operates in a very abrupt way and this can lead to undesirable effects to the machine itself and to the nearby environment. A direct on-line (DOL) start is performed in just 3 cycles (around 60 ms) for a 3-phase machine and a little more for 1-phase ones. This can result in rapid inrush current (around 8 times the nominal current) and significant vibrations. The first effect of high inrush current is voltage fluctuations during starts, especially where the grid is not so resistant, as in many domestic or commercial environments or in locations far from the energy source. This leads to lights flickering and potential interference with equipment such as LAN networks, Wifi, smartphones and tablets. The second effect is that the nominal current for the utility contract may be exceeded, which could result in fines from the energy supplier or having to increase the contract power at a higher cost. In addition, direct on-line starts cause wear and tear to the coils, reducing the lifetime of the compressor.Vibrations mainly cause a shock to the motor, starting from the shaft, which means shorter compressor lifetime. They also lead to mechanical shock to the pipes which, especially in the long term and for larger machines, can cause refrigerant leakage. Last but not least, the noise of a direct on-line start can be rather annoying. These problems can be solved by using our range of soft starters specifically designed for scroll compressor applications. Inrush current is reduced by 50 to 55% and the compressor is started within 1s, allowing a smooth start and proper compression and lubrication. The 3-phase RSBD and RSBT soft starters are provided with an auto-adaptive algorithm which ensures the best inrush current reduction at every start. As the soft starter follows the changes in the compressor and the system over time, no setting is needed. At the same time, when unexpected conditions occur, such as a very high pressure difference in the refrigeration circuit, the soft starter will react ensuring starting even in the worst conditions.

Our product range

3-phase scroll compressor soft starters

RSBT

- Enhanced current reduction capability with patented auto-adaptive algorithm
- Integrated advanced diagnostic functions
- 3-phase controlled and internally bypassed
- Compliant with Residential (Class B) Limits for Emissions
- cULus listed, VDE (EN60335-2-40), CCC

MAIN FEATURES

- Plug&Play: no external settings needed
- Typicallly >50% scroll compressor inrush current reduction
- Compact dimensions: better panel space savings

3-phase scroll compressor soft starters

RSBD 45 mm

- Current balancing algorithm to reduce unbalance on uncontrolled phase
- Patented auto-adaptive algorithm for better inrush current reduction
- 2-phase controlled and internally bypassed
- Alarm and top of ramp indication
- cULus, CCC approved

MAIN FEATURES

- Plug&Play: no external settings needed
- Operational current: 12 AAC up to 45 AAC @ 40°C
- Multi-voltage operation: 220-400 VAC

3-phase scroll compressor soft starters

RSBD 75 mm

- Self-learning algorithm for current reduction and current balancing
- Operational current: 55/70/95 AAC
- Operational voltage: 220 - 600 VAC, 50/60 Hz
- Alarm, Top of ramp and Run relay output
- cULus approved, CCC

MAIN FEATURES

- Compact dimensions: 95 A in 75 mm wide housing
- Plug and play: no user settings required
- Internally Bypassed

3-phase pump and ventilator soft starters

RSWT 45/75/120 mm

- Motor rating: up to 45 kW (90 AAC)
- 3-phase controlled & internally bypassed
- Ramp-up/Ramp-down time: up to 20 sec
- "Operational voltage: RSWT40: 220 - 400 VAC, RSWT60: 220 - 600VAC"
- PTC input, Alarm - Top of Ramp - Run relay indication

MAIN FEATURES

- Easy to use and setup
- Self-learning algorithm to improve pump starts/stops
- Integrated overload protection (Class 10)

3-phase scroll compressor soft starters

RSBT 120 mm

- Patented algorithm achieves 50% current reduction vs direct on line start
- Operational current: 55/70/95 AAC
- Operational voltage: 220 - 480 VAC, 50/60 Hz
- Alarm, Top of ramp relay output
- cULus approved, CCC

MAIN FEATURES

- Multi-voltage operation: 220 - 480 VAC
- Plug and play: no user settings required
- 3-phase controllecd with internal bypass
- Modbus RTU over RS485 serial communication

1-phase scroll compressor soft starters

RSBS / RSBS HP

- Current limit starting
- Advanced diagnostic functions
- Internally bypassed
- Up to 12 starts per hour
- cULus listed

MAIN FEATURES

- Plug&Play: no external settings needed
- Space saving IP20 design
- Integrated starting capacitor
- Optimised algorithm for high pressure starts (RSBS HP)

Compact motor soft starters

RSGD 45 / 75 mm

- Operational voltage range: 187-440 VAC, 187-660 VAC
- Operational current range: 12 AAC up to 100 AAC
- Control voltage: 24 VAC/DC, 110-400 VAC
- Auxiliary relays for top of ramp and alarms
- cULus, CCC, EAC approved

MAIN FEATURES

- Compact dimensions: up to 22 kW in 45 mm wide housing (RSGD 45 mm), up to 55 kW in 75 mm wide housing (RSGD 75 mm)
- Easy to setup: self-learning algorithm
- Internally bypassed and supplied

Variable frequency drives

RVFF

- 6 compact frame sizes. Panel mount
- 3-phase supply. Output ratings up to 160 kW
- Multi motor control: VF, SLV, PMSLV
- Integrated filters up to 55 kW
- UL, CE approved

MAIN FEATURES

- Permanent magnet motor control with sensor-less vector algorithms
- Built-in multi fans/pumps control, up to 8 with IO card
- On board PID and PLC functions for efficient control of HVAC system

Variable frequency drives

RVLF

- 4 mini frame sizes for ratings up to 11 kW
- Input voltage options for 110 V, 230 V and 400 V
- Efficient control via VF or SLV algorithms
- Integrated Class A filters for most models
- UL, CE approved

MAIN FEATURES

- Sensor-less vector control for precise speed control
- PTC inputs allow monitoring of motor temperature
- On board PID functions for effective control via feedback

Environmental sensors

ESCO2THWxxDM

- CO_2, Humidity, Temperature
- 0 - 2000 ppm or 5000 ppm
- 0°C...50°C; 0 - 100 %RH
- 0 - 10 V or 4 - 20 mA output
- Wall mounting

MAIN FEATURES

- 3 variables in 1 compact unit
- LCD display
- Modbus communication

Environmental sensors

ESAV

- Air velocity, Temperature
- 0 to 20 m/s
- 0 to 50°C
- 0 - 10V or 4 - 20 mA output
- Duct or remote mounting

MAIN FEATURES

- Dedicated monitoring software
- LCD display for remote mounting
- Modbus communication

Environmental sensors

ESTxD50xM

- Humidity, Temperature
- -40...100°C
- 0 to 100% RH
- 0 - 10 V or 4 - 20 mA output
- Duct mounting

MAIN FEATURES

- Dedicated monitoring software
- Suitable for HVAC ducting
- Modbus communication

Our product range

PCB mounted solid state relays

RP1

- Dimensions: 37 x 43 x 22 mm, PCB mounted
- Rated operational voltage: up to 480 VAC
- Rated operational current: up to 10 AAC
- Control input range: 4-32 VDC
- CE , cURus approved

MAIN FEATURES
- Zero cross or instant-on switching
- Optional DIN mounting with RP..Mx accessory

1-phase solid state relays

RGS1A / RGC1A

- Product width 17.5 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A^2s
- Integrated output overvoltage protection
- Control input: 4-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus (RGC), UR (RGS), CSA (RGS), VDE, GL (up to 30 AAC)

MAIN FEATURES
- Integrated heatsink (RGC1A) or without heatsink (RGS1A)
- 100 kA short circuit current rating
- Optional overtemperature protection (RGC1A)

1-phase proportional controllers

RGS1P / RGC1P

- Product width 35 mm up to 70 mm, DIN or panel mounting
- Ratings: up to 660 VAC, 90 AAC, 18000 A^2s
- Control input: 4-20 mA, 0-10 VDC, 0-5 VDC, 1-5 VDC, external potentiometer
- LED indication for control and load status
- CE, cULus (RGC), cURus (RGS), CSA (RGS) approved

MAIN FEATURES
- Power control via a selectable switching mode (phase angle, full cycle, advance full cycle or soft start switching)
- Compact dimensions
- Reliability with integrated overvoltage protection

1-phase solid state relays

RM1A / RAM1A

- Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount
- Rated operational voltage: up to 660 VAC
- Rated current: 25 AAC, 50 AAC, 75 AAC, 100 AAC, 125 AAC
- Control input: 4-32 VDC, 20-280 VAC
- CE, cURus, CSA , VDE (RAM), CCC approved

MAIN FEATURES
- Zero cross or Random switching
- Suited for resistive, inductive or capactive loads
- Integrated output overvoltage protection (RM1)

1-phase proportional controllers

RM1E

- Dimensions: 58.2 x 44.8 x 28.8 mm, panel mount
- Rated operational voltage: up to 660 VAC
- Rated current: 25 AAC, 50 AAC, 100 AAC
- Control input: 4-20 mA, 0-10 V
- CE, cURus, CSA approved

MAIN FEATURES
- Phase angle switching
- Integrated overvoltage protection
- 0 to 99% power output control

2-pole solid state relays

RK

- Dimensions: 45 x 58 x 33 (44) mm, panel mount
- Independent control (RKD2..) or common control (RK2..)
- Ratings : up to 660 VAC, 50 AAC /pole, 75 AAC /pole
- Control input: 4-32 VDC
- CE, cURus, CSA, VDE approved

MAIN FEATURES
- Integrated output overvoltage protection
- Pre-attached thermal pad
- Conformant to EN 60335-1

Our product range

3-phase solid state contactors

RGC2A / RGC3A

- Product width 54 mm up to 70 mm, DIN mount
- Rated operational voltage: up to 660 VAC
- Rated current: up to 75 AAC/pole (RGC2A), 65 AAC/pole (RGC3A) @ 40°C
- Control input: 5-32 VDC, 20-275 VAC (24-190 VDC)
- CE, cULus

MAIN FEATURES
- Integrated output overvoltage protection
- Optional monitoring for SSR and load circuit malfunction (RGC..M)
- 100 kA short circuit current rating

3-phase proportional controllers

RGC2P / RGC3P

- Product width 54 mm up to 70 mm, DIN mount
- Rated operational voltage: 180 - 660 VAC
- Rated current: up to 75 AAC/pole (RGC2P), 65 AAC/pole (RGC3P) @ 40°C
- Control input: 0-20 mA, 4-20 mA, 12-20 mA, 0-10 V, 0-5 V, 1-5 V, external potentiometer
- CE, cULus

MAIN FEATURES
- Integrated output overvoltage protection
- Phase angle, Distributed full cycle or Soft start as switching modes
- Integrated monitoring for SSR and load circuit malfunction

3-phase monitoring relays

DPD

- Dimensions: 22.5mm DIN rail mounting Enclosure
- 120 VAC to 480 VAC Delta & Star mains
- Voltage and frequency monitoring
- 2 SPDT 8 A relay outputs
- UL, CSA, CCC approved

MAIN FEATURES
- NFC programming
- Up to 10 configurable setpoints
- Apps for Android and Windows PC programming

Phase sequence and loss relays

DPA52 / DPA53

- Dimensions: 81 x 17.5 x 67.2 mm DIN rail housing
- Phase sequence and loss relay
- 3 phase AC (own power supply); regenerated voltage
- Power supply 208-480 VAC (±15%)
- Undervoltage detection (DPA53)
- UL, CSA, CCC approved

MAIN FEATURES
- Compressor protection from reverse running and phase loss
- DPA51 features switch mode supply
- Low consumption

Under/over voltage phase relays

DPB01 / DPB52

- Dimensions 81 x 17.5 x 67.2 mm (DPB52) or 83 x 22.5 x 99.5 mm (DPA01) DIN-rail housing
- TRMS 3-Phase sequence, Phase and Neutral loss relay
- 3 phase independent over and under voltage with adjustable delay
- Star and Delta power supply from 208-480 VAC ± 15% (DPB01) -40% +30% (DPB52)
- UL, CSA, CCC approved

MAIN FEATURES
- Compressors protection from reverse running and phase loss
- 17.5 mm width: the smallest in the market
- Independent voltage setpoints and built-in delays

Cosφ relays

DWA01

- Dimensions 83 x 22.5 x 99.5 mm DIN rail housing
- Cosφ monitoring relays
- 3 phase AC (own power supply); regenerated voltage
- Power supply 208-240 VAC or 380-480 VAC
- UL, CSA approved

MAIN FEATURES
- Detects any potentially dangerous change of the cosφ
- Direct current connection or by CT
- Easy setup

Our product range

Pump alternating relays

DLA71

- Dimensions: 81 x 35.5 x 67.2 mm DIN rail housing
- Pump alternating relay for 2 or 3 pumps
- Galvanically separated power supply, 24/48 or 115/230 VAC
- 2x or 3x 5A SPST relay output
- UL, CSA approved

MAIN FEATURES

- Built-in function for automaticrotation of the pumps
- Built-in delay for the second or thirdpump in case simultaneous activation is required
- Plug and play: no settings needed

Timers

DAA51 / DAC51

- Dimensions: 81 x 17.5 x 67.2 mm DIN rail housing
- Delay on operating function (DAA), start/delta function (DAC)
- Universal power supply
- Repeatability: < 0.2%
- UL, CSA approved

MAIN FEATURES

- Extended delay-on-operating time, selectable from 0.1 s to 100 h
- Star-delta control function with star and star-to-delta adjustable times
- Protection against frequent compressor starting and from big inrush currents

Timers

DMB51

- Dimensions: 81 x 17.5 x 67.2 mm DIN rail housing
- Combined AC and DC power supply
- Repeatability: <0.2%
- UL, CSA, RINA approved

MAIN FEATURES

- Delay on operate/release-, interval (manual/automatic start)
- Double interval; symmetrical recycler (ON or OFF first)
- Timing range from 0.1 s to 100 h

AC Current transformers

E83

- Dimensions: 56 x 22.5 x 49 mm
- 7 input ranges
- Ouput 4-20 mA DC
- No power supply
- UL, CSA approved

MAIN FEATURES

- Easy interface to PLC
- Built in hall sensor for current sensing
- LED indication

Power transducers

CPT-DIN

- Dimensions: 83.5 x 45 x 98.5 mm DIN rail housing
- Accuracy 0.5 % (voltage, current)
- Measurement by CT and VT
- Front protection degree IP20
- Analogue, digital, pulse or serial outputs available

MAIN FEATURES

- Very compact size power transducer
- Provides electrical variables set to a PLC to manage compressors and other loads
- Suitable for on-board panel installation

3-phase energy transducers

ET340

- Dimensions: 3 DIN module; DIN-rail mounting
- Measurement of voltage, current, power, power factor, frequency, THD (V, A)
- Bi-directional energy metering, 2 tariffs, cl. 1 (EN62053-1)
- Measuring inputs: 208 to 400 V_{LL} AC, 65 A

MAIN FEATURES

- Self-powered
- RS485 Modbus port (screw, 2x RJ45)
- Optical port
- Sealable terminal covers
- CE approved

Our product range

1-phase energy meters /analysers

EM110 / EM111

- Dimensions:1 DIN module; DIN-rail mounting
- Electromechanical totalizer (EM110) or backlit touch LCD (EM111)
- Measurement of voltage, current, power, power factor and frequency (EM111)
- Bi-directional energy metering, 7 digits, cl. B (EN50470)
- Measuring inputs: 115/230 VAC, 45 A

MAIN FEATURES

- Self-powered
- Pulse output or as an alternative: RS485 Modbus, M-Bus (EM111)
- Sealable terminal covers
- CE, MID (PFA (EM111) and PFB) approved

3-phase energy analysers

EM210

- Dimensions: 4 DIN modules or 72 x 72 mm
- Installation: DIN-rail or panel mounting in a single product
- 3-phase energy meters with CT/VT connection
- Measurement of voltage, current, power, power factor and frequency
- Pulse output
- RS485 Modbus RTU, high speed (up to 115kbps)

MAIN FEATURES

- Self-powered
- Sealable terminal covers
- Very compact housing to save space
- CE, cULus, MID approved

3-phase energy meters/analysers

EM24 DIN

- Dimensions: 4 DIN modules , DIN-rail mounting
- Meter for energy from CT 5 A or for direct energy 65 A
- Measurement of voltage, current, power, power factor and frequency.
- Bi-directional energy metering on 2 8-digit counters, cl. B (EN50470-3)
- Inputs: 3 x 230 (400) VAC, 5 A, 65 A

MAIN FEATURES

- 115-230 VAC power supply or self-powered
- 3 inputs for external dimension counting (IS)
- Pulse or relay output: RS485 Modbus RTU, M-Bus
- Sealable terminal covers
- CE, MID (PF), cULus (5 A version) approved

3-phase energy analysers

EM340

- Dimensions: 3 DIN modules; DIN-rail mounting
- Backlit touch LCD
- Measurement of voltage, current, power, power factor and frequency
- Bi-directional energy metering on 2 8-digit counters, cl. B (EN50470)
- Measuring inputs: 3 x 230 (400) VAC, 65 A

MAIN FEATURES

- Self-powered
- Pulse output or as an alternative: RS485 Modbus, M-Bus
- Sealable terminal covers
- CE, MID (PFA and PFB) approved

3-phase power analysers

WM20

- Dimensions: 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- cULus approved

MAIN FEATURES

- Provides installation data to a SCADA to manage the whole system
- Modular housing to build the instrument according to the real application needs
- Modbus and BACnet (both RS485 or Ethernet) and Profibus DPV0 communication ports available

3-phase power quality analysers

WM30 / WM40

- Dimensions: 96 x 96 mm panel mounting housing
- Accuracy 0.2 % (voltage, current)
- Universal power supply
- Front protection degree IP65, NEMA4X, NEMA12
- cULus approved - Solar California listed

MAIN FEATURES

- 16-alarm PLC logic and digital inputs for utility metering (WM40)
- Modular housing to build the instrument according to the real application needs
- Modbus and BACnet (both RS485 or Ethernet), Profibus DPV0 and Ethernet/IP communication ports available
- Built-in datalogger for instantaneous variables, dmd profiles and events (WM40)

Our product range

Capacitive sensors

CA18

- Dimensions: M18 / M30
- Tripleshield™ sensor protection
- Plastic housing, DC and AC versions
- Sensing distance 0.5-12 mm
- CE, UL, CSA approved

MAIN FEATURES
- Optimised features for level detection in plastic and rubber applications
- Sensing face can withstand temperatures up to 120°C
- Protection: short circuit, transient and reverse polarity

Capacitive sensors

CA30

- 4-12 mm sensing distance adjustable
- Time delay on operate or release, up to 10 minutes adjustable
- Multi voltage supply: 20.4-255 VAC/DC
- 2 A, SPDT relay output
- Housing M30 x 100 mm
- CE, cULus approved

MAIN FEATURES
- Level sensor for solid, fluid or granulated substances
- IP67, NEMA 1, 2, 4, 4X, 5, 6, 6P, 12

Capacitive sensors

CA30CA.. series

- High EMC Immunity.
- M30 mm housing, easy to mount
- Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC
- CE, UL, CSA approved

MAIN FEATURES
- Reliable detection of pellets in the burner's feeding system
- Dust alarm output
- Temperature alarm output at 60°C

Capacitive sensors

CD50

- Dimensions: 50 x 30 x 7 mm
- Flat pack sensor, easy to mount
- Power supply 10-30 VDC, 50 mA NPN or PNP, NO or NC
- CE approved

MAIN FEATURES
- Detection of condensed water from Airconditioning system

Conductive level systems

CLD / CLP

- Exact level detecting with insulated electrodes
- SPDT 8 A relay output
- 24-240 AC/DC or 230 AC or 115 AC
- CE, UL, CSA approved

MAIN FEATURES
- Detection of condensed water from air conditioning system
- Easy to install with simple electrodes
- Wide sensitivity 250 Ω to 500 kΩ

Conductive level probes

CLH

- 3-5 stainless steel electrodes
- User defined electrode length
- Insulation available in Kynar or Polyolefine
- 1 1/2" pipe thread mounting
- IP65/68 rating

MAIN FEATURES
- -20°C to 90°C
- Replaceable electrodes
- Extendable electrodes

Our product range

Inductive proximity sensors

ICB12 / ICB18

- M12 and M18 NPB housing in short or long barrel lengths
- Sensing distance from 2 mm up to 20 mm
- Output functions: NO or NC, NPN or PNP
- Two meter oil resistant PVC cable or M12 plug version
- CE, cULus, cCSAus approved

MAIN FEATURES

- High precision and reliability thanks to the microprocessor technology
- Eco-friendly potting material
- Short-circuit and overload LED indication
- Laser engraved on front cap, permanently legible

Photoelectric level sensors

VP / VPA / VPB

- 3/8 "pipe thread x 70.5 (74 mm) housing
- Power supply 10-40 VDC, 200 mA NPN or PNP, NO and NC
- CE approved

MAIN FEATURES

- Detection of condensed water from Air-conditioning system
- Reliable detecting of water even with oil presence

DIN rail power supplies

SPD

- DIN rail housing
- 1-phase (5-480 W), 2-phase (100 W), 3-phase (120-960 W)
- Rated input voltage: 85-264 VAC (1-phase), 380-575 VAC (2-phase), 340-575 VAC / 480-820 VDC (3-phase)
- UL, cUL listed, TÜV/CE approved

MAIN FEATURES

- Power Factor Correction (PFC)
- Parallel versions available
- High efficiency (up to 93%)

DIN rail power supplies

SPDM 120W

- 24 VDC, 120 W Output
- Efficiency up to 88%
- Ultra-slim dimension: 45mm width
- Universal input voltage AC and DC
- Operating temperature from -25° to +70° C
- Stainless steel enclosure

MAIN FEATURES

- Output protections: OVP/OLP/SCP/OTP
- DC OK LED indication
- Built-in current limiting circuit

DIN rail compact power supplies

SPDC 240W

- 24 VDC, 240 W output
- 45 mm width, high compactness
- Very high efficiency up to 94%
- Operating temperature from -25° to + 70° C
- Universal input 90 VAC ~ 264 VAC / 127 VDC ~ 370 VDC

MAIN FEATURES

- DC OK relay output and LED indication
- PFC > 0.95
- Parallel connection selection switch

DIN rail compact power supplies

SPDC 120W

- 12 or 24 VDC, 120 W Output
- 32 mm width, high compactness
- Very high efficiency up to 91%
- Operating temperature from -25° to +70° C
- Universal input 90 VAC ~ 264 VAC / 127 VDC ~ 370 VDC

MAIN FEATURES

- DC OK relay output and LED indication
- PFC
- Parallel connection selection switch

Our product range

Low profile DIN power supplies

SPM

- DIN rail housing
- Universal input 90-264 VAC / 120-370 VDC
- Single phase and battery charger versions available
- UL, cUL listed, TÜV/CE approved

MAIN FEATURES
- Operating temperature w/o derating -25°C to +60°C
- Short circuit and Overload protection
- High efficiency (up to 89%)

Enclosed power supplies

SPPC

- Universal Input 115 / 230Vac
- Output Voltages: 5V, 12V, 24V and 48V
- Ouput powers from 25 to 800W
- Wide temp range from -25°C to +70°C (-13°F to 158°F)
- cURus, CE approved

MAIN FEATURES
- Fully protected output: OVP, SCP
- Very compact dimension
- PFC versions available from >75W

Slim industrial relays

RSLM

- 28.0 x 5.0 x 15.0 mm
- Ultra slim – 5 mm width
- Surge protection up to 6 kV
- Nominal voltage up to 60 VDC
- High sensitivity: Approx. 170 mW

MAIN FEATURES
- Highly-compact and space-saving
- Available in SPDT or SPST
- Conforms to VDE 0700, 0631 reinforced insulation

Electromechanical relays

RMIA series

- 2 x 10 A and 4 x 5 A versions
- DC coils: 6-220 V
- AC coils: 6-380 V
- Free wheeling diode integrated
- Sockets for PCB or DIN rail installations

MAIN FEATURES
- Contacts suitable for High Inrush loads
- Very compact size
- LED, latchable mechanical push button and flag as standard

Electromechanical relays

RCP series

- 2 x 10 A and 3 x 10 A contacts
- Industry standard relay
- High immunity to supply voltage fluctuation
- DC coils: 6-110 V
- AC coils: 6-230 V

MAIN FEATURES
- Octal and Undecal
- LED, latchable mechanical push button and flag as standard
- Wide selection of sockets for PCB and DIN rail

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