CARLO GAVAZZI
Automation Components

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Product Overview

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Automation Components

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Photoelectric sensors

Carlo Gavazzi offers a wide range of photoelectric sensors designed to be used extensively in applications such as material handling, packaging machinery, automatic door systems, etc. A variety of sensing principles are covered, to fit the requirements of virtually any application: diffuse-reflective (D), background suppression (B), retro-reflective (R) with or without polarization (P), for transparent objects (G), and through-beam (T).
The sensors featuring IP69K ratings and ECOLAB approvals are designed for harsh environments.

Stand alone through beam

- Supply voltage: DC 3-wire
- Sensing distance: < 20 m
- Output: NPN/PNP - NO/NC
- Connectivity: cable or pig-tail
- Housing: PC, IP67
- Features: sensor mute input, T type
- Approvals: CE - cULus

M18 PA18

- Supply voltage: DC 4-wire
- Sensing distance: < 20 m
- Output: NPN/PNP NO+NC
- Connectivity: cable or M12 connector
- Housing: PBTP or NPB, IP67, IP68, IP69K
- Sensor types: D, B, R, P and T
- Approvals: CE - cULus - ECOLAB

PH18

- Supply voltage: DC 4-wire
- Sensing distance: < 20 m
- Output: NPN/PNP NO+NC
- Connectivity: cable or M12 connectors
- Housing: PBTP, IP67, IP68, IP69K
- Sensor types: D, B, R, P and T
- Approvals: CE - cULus - ECOLAB

LD30 with IO-Link and infrared laser

- Background Suppression - Time of flight sensor
- IO-Link Ver. 1.1
- Time delay, ON, OFF, One shot
- Logic: AND, OR, XOR, Gated SR-FF
- External input
- Outputs: NPN, PNP or Push-Pull
- Diagnostic functions: Operation hours, Power cycles, Detection cycles, Temperatures, Short-circuit, Maintenance

Miniaturised PD30

- Supply voltage: DC 4-wire
- Sensing distance: < 15 m
- Output: NPN/PNP NO+NC
- Connectivity: cable or M8 connectors
- Housing: ABS; IP67
  Stainless Steel; IP69K
- Sensor types: D, B, R, P, G and T
- Approvals: CE - cULus - ECOLAB

Compact PC50

- Supply voltage: DC 4-wire, AC/DC 5-wire
- Sensing distance: < 20 m
- Output: NPN/PNP - NO+NC, SPDT 3 A
- Connectivity: cable or M12 connector
- Housing: ABS/PC, IP67
- Sensor types: D, B, R, P and T
- Approvals: CE - UL - CSA

PM...

- Supply voltage: AC/DC 5-wire
- Sensing distance: < 20 m
- Output: SPDT 3 A
- Connectivity: cable outlet, terminals
- Housing: ABS/PC, IP67
- Sensor types: D, R, P and T
- Approvals: CE - UL325 - UL508

Remote amplified sensors MOF...

- Supply from system: S142A, B or C
- Sensing distance: < 50 m
- Output from system: SPDT 10A
- Connectivity: 11 pin socket
- Housing: syst. PPO, sens. PC IP67
- Sensor types: T, ATEX zone 22
- Approvals: CE - UL - CSA

PA18CL..

- Supply voltage: AC 2-wire
- Sensing distance: < 3 m
- Output: AC 500 mA
- Connectivity: cable or M12 connector
- Housing: PBTP or NPB, IP67
- Features: D, R or P type
- Approvals: CE - UL- CSA

Fork sensor PF80

- Supply voltage: DC 4-wire
- Slot width: < 3 mm
- Output: NPN+PNP NO/NC
- Connectivity: M8 connector
- Housing: PC, IP65
- Features: 10 kHz, teach lock, T type
- Approvals: CE

Fork sensor PF74, for lifts

- Supply voltage: DC 3-wire
- Slot width: < 30 mm
- Output: NPN+PNP NO/NC
- Connectivity: cable outlet
- Housing: PC, IP65
- Features: high dust immunity, T type
- Approvals: CE

Liquid level VP-sensor

- Supply voltage: DC 3-wire, AC 2-wire
- Sensing distance: direct contact
- Output: NPN/PNP/NO/NC, AC NO/NC
- Connectivity: cable or M12 connector
- Housing: PA12, PSU, Glass, NPB, stainless steel, IP67
- Approvals: CE

Photoelectric sensors

Carlo Gavazzi offers a comprehensive range of sensors for Doors, Gates and Entrances, all approved to meet the latest European and North American regulations.
The motion and presence sensors are based on vision technology and have been developed for straight or curved sliding pedestrian doors. They provide easy set-up, easy adjustment of the detection zone and a cross-walk elimination function.

Automatic doors PD98

- Supply voltage: AC/DC 5-wire
- Sensing distance: < 30 m
- Output: SPDT 1 A
- Connectivity: cable outlet, terminals
- Housing: PC/ABS, IP54
- Features: sensor mute input, T type
- Approvals: CE - UL325

Automatic doors PD86

- Supply voltage: AC/DC 5-wire
- Sensing distance: < 20 m
- Output: SPDT 3 A
- Connectivity: cable outlet, terminals
- Housing: PC/ZAMAK, PMMA, IP66
- Features: sensor mute input, T type
- Approvals: CE - UL325 - UL508

Automatic doors PD140

- Supply voltage: AC/DC 5-wire
- Sensing distance: < 60 m
- Output: SPST 1 A
- Connectivity: cable outlet, terminals
- Housing: aluminium/PC, IP65
- Features: sensor mute input, T type
- Approvals: CE - UL325, EN 12445, EN 12453, EN12978,
- EN/ISO 13849-1 ESPE2

Automatic doors PD180

- Supply voltage: AC/DC 5-wire, battery
- Sensing distance: < 30 m
- Output: SPST 1 A
- Connectivity: cable outlet, terminals
- Housing: PC, IP55
- Features: sensor mute input, T type
- Approvals: CE - UL325, EN 12445, EN 12453, EN12978
- EN/ISO 13849-1 ESPE2

Long range BGS PD112

- Supply voltage: DC 4-wire
- Sensing distance: < 2.5 m
- Output: NPN/PNP NO+NC
- Connectivity: cable or M12 connector
- Housing: PC, IP67
- Features: B, industrial or door mode
- Approvals: CE - cULus

Guardian 1 and 2

- Overhead sensor for curved and straight sliding doors
- Digital video camera technology
- Motion zone adjustable in 7 steps
- Presence zone teachable
- Outputs: presence and motion, SPST
- Approvals: cURus - UL325 - CE - TÜV

Automatic doors wireless safety

- Supply voltage: AC/DC, battery
- Wireless distance: < 10 m
- Output: 3 x SPST, NO 8,2 or NC
- Connectivity: cable outlet, terminals
- Housing: ABS or PC or PA6, IP66/IP67
- Main- and sub-module, 2.4 GHz duplex
- Approvals: CE - cULus - FCC

Automatic gates wireless safety

- Supply voltage: AC/DC, battery
- Wireless distance: < 15 m
- Output: 3 x SPST, NO 8,2 or NC
- Connectivity: cable outlet, terminals
- Housing: ABS or PC or PA6, IP66/IP67
- Main- and sub-module, 2.4 GHz duplex
- Approvals: CE - cULus - FCC

Automatic doors MPF system

- Supply voltage: AC/DC or AC
- Sensing distance: < 15 m
- Output: 2 x SPST 0.5 A or 2 A
- Connectivity: terminals
- System: PC, IP40 sensor: PC+SS, IP67
- Features: sensor mute input, T type
- Approvals: CE - UL325 - UL508 - TÜV

Automatic doors PD70

- Supply voltage: DC 3-wire
- Sensing distance: < 12 m
- Output: NPN/PNP - NO/NC
- Connectivity: cable or M8 connector
- Housing: PC, IP67
- Features: sensor mute input, T type
- Approvals: CE - cULus

Reflectors

- High quality retro-reflectors
- Housing shape: square or round
- Round shape: Ø25 to Ø84 mm
- Square shape: 13x17 to 100x100 mm
- Mounting: adhesive or screws
- Material: PMMA/ABS

Mounting brackets AMB series

- Bracket style: Straight or angled
- Sensor size: Ø4, M8, M12, M18 or M30
- Bracket material: galvanized steel or stainless steel AISI316L or Nylon 66 plastic housing
- Adjustability: ±32°
- Head can be rotated 360°

Capacitive sensors

Carlo Gavazzi is renowned for its TRIPLESHIELD™ capacitive proximity sensors with outstanding electromagnetic immunity. The 4th Generation TRIPLESHIELD™ sensors feature several significant upgrades, including superior electromagnetic immunity and refined sensitivity adjustment with stability indication and are now also available with on-board IO-Link communication. New benefits include a dust and temperature alarm function. Featuring an ECOLAB certified sensor housing rated to IP69K standard, these sensors are exceptionally well suited for a precise detection in environments subject to high temperatures, harsh chemicals, steam and high-pressure cleaning. The sensors are ideal for a wide range of applications that require reliable measurements or monitoring of solid materials or fluids.

M12 Tripleshield™

- Supply voltage: DC 4-wire
- Sensing distance: < 8 mm (F/NF)
- Output: NPN/PNP - NO+NC
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: high immunity to EMI
- Approvals: CE - UL - CSA

M18 and M30 Tripleshield™

- Supply voltage: AC 2-wire
- Sensing distance M18: < 12 mm (F/NF)
- Sensing distance M30: < 25 mm (F/NF)
- Output: SCR NO+NC
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: high immunity to EMI
- Approvals: CE - UL - CSA

CD34

- Supply voltage: DC 4-wire
- Sensing: water-based liquids
- Output: NPN/PNP NO/NC
- Connectivity: cable or M8 4-pin pig-tail
- Housing: PBT, IP65, IP66, IP67, IP68, IP69K
- Features: automatic tankwall suppression
- Approvals: CE - cULus - ECOLAB

CD46 Tripleshield™

- Supply voltage: DC 4-wire
- Sensing distance: < 10 mm (F/NF)
- Output: NPN/PNP NO/NC, Teach
- Connectivity: cable or M12 pig-tail
- Housing: PBT, IP68
- Features: high immunity to EMI
- Approvals: CE - UL - CSA

EC55 (VC55) Tripleshield™

- Supply voltage: DC 4-wire
- Sensing distance: < 25 mm (F/NF)
- Output: NPN/PNP NO+NC
- Connectivity: cable or M12 pig-tail
- Housing: PC, IP67
- Features: high immunity to EMI
- Approvals: CE - UL - CSA

CA18 and CA30 4th Gen. Tripleshield™

- Supply voltage: DC 4-wire
- Sensing distance M18: < 15 mm (F/NF)
- Sensing distance M30: < 30 mm (F/NF)
- Output: NPN/PNP NO+NC
- Connectivity: cable or M12 connector
- Housing: PBT, IP67, IP68, IP69K
- Features: superior immunity to EMI
- Approvals: CE - UL - CSA - ECOLAB

CA18 and CA30 with IO-Link 4th Gen. Tripleshield™

- Additional specifications: from standard IO-Link Ver. 1.1
- Time delay, ON, OFF, One shot
- Logic: AND, OR, XOR, Gated SR-FF
- External input
- Outputs: NPN, PNP or Push-Pull
- Diagnostic functions: Operation hours, Power cycles, Detection cycles, Temperatures, Short-circuit, Maintenance

M18 Chemical resistant

- Supply voltage: DC 4-wire
- Sensing distance: < 12 mm (F/NF)
- Output: NPN/PNP NO+NC
- Connectivity: cable
- Housing: PP or PVC or PTFE, IP67
- Features: high chemical resistance
- Approvals: CE

CD50

- Supply voltage: DC 4-wire
- Sensing distance: < 10 mm (F)
- Output: NPN/PNP NO/NC
- Connectivity: cable
- Housing: PPE-TPE, IP67
- Approvals: CE

Ø18 ATEX Zone 22

- Supply voltage: DC 4-wire, AC 2-wire
- Sensing distance: < 12 mm (NF)
- Output: NPN/PNP NO+NC, SCR NO/NC
- Connectivity: cable
- Housing: PBT, IP67
- Features: fixed ON-delay 30 sec
- Approvals: CE - UL - CSA - ATEX

Ø32 VC11/12

- Supply voltage: AC/DC 5-wire, AC 5-wire
- Sensing distance: < 20 mm (NF)
- Output: SPDT 2 A
- Connectivity: cable
- Housing: PBT, IP67
- Features: adj. ON or OFF delay 600 sec
- Approvals: CE - cULus (M24), ATEX

Ø32 ATEX Zone 20

- Supply voltage: AC/DC 5-wire, AC 5-wire
- Sensing distance: < 20 mm (NF)
- Output: SPDT 2 A
- Connectivity: cable
- Housing: PBT, IP67
- Features: adj. ON or OFF delay 600 sec
- Approvals: CE - ATEX

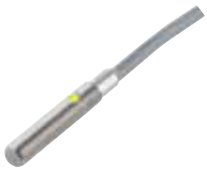
Inductive sensors

Carlo Gavazzi offers a broad range of inductive sensors, primarily used to detect the presence of metal. These sensors are used in packaging and plastics machines, assembly lines and conveyor systems. They are available in a wide variety of styles. Carlo Gavazzi offers inductive sensors in cylindrical housings (from 4 to 30 mm) with a sensing distance of up to 40 mm thanks to the new ICB triple distance family and also in rectangular, flat-pack and slotted housing. The ICS washdown series, available in M12, M18 and M30 sizes, is capable of ensuring repeated and highly accurate operations over a very wide temperature range, from -40°C up to +80°C (+85°C for ICS30) and rated to IP67, IP68 and IP69K standards. The new miniature series, from Ø4 to M8, can reach a frequency of up to 6 kHz and is also available with on-board IO-Link communication, as is the new ICB series, fully embracing the Industry 4.0 requirements.

Ø4

- Supply voltage: 3-w DC
- Sensing distance: ≤ 1.3 mm (F)
- Output: NPN/PNP - NO/NC
- Connectivity: cable or M8 connector
- Housing: stainless steel, IP67
- Special feature: miniature series, operating frequency up to 6 kHz
- Approvals: CE - UL - CSA

M5



- Supply voltage: 3-w DC
- Sensing distance: ≤ 1.3 mm (F)
- Output: NPN/PNP - NO/NC
- Connectivity: cable or M8 connector
- Housing: stainless steel, IP67
- Special feature: miniature series, operating frequency up to 6 kHz
- Approvals: CE - UL - CSA

M8

- Supply voltage: 3-w, 4-w DC
- Sensing distance: ≤ 4 mm (F/NF)
- Output: NPN/PNP - NO/NC
- Connectivity: cable or M8 connector
- Housing: stainless steel, IP67
- Special feature: miniature series
- Approvals: CE - UL - CSA

Ø4 - M5 - M8 with IO-Link

- Additional specifications: from standard IO-Link Ver. 1.1
- Time delay, ON, OFF, One shot
- Outputs: configurable NO or NC; NPN, PNP or Push-Pull
- Switching mode: single point, two point or window
- Adjustable Sn and hysteresis
- RPM counter, rotational speed monitoring & temperature alarm

M12

- Supply voltage: 2-w, 3-w, 4-w DC Namur, 2-w AC
- Sensing distance: ≤ 10 mm (F/QF/NF)
- Output: NPN/PNP - NO/NC - NO+NC
- Connectivity: cable or M12 connector
- Housing: NPB, stainless steel, PBT, IP67
- Special feature: IP68, IP69K and extended temperature range
- Approvals: CE - UL - CSA - ECOLAB

M18

- Supply voltage: 2-w, 3-w, 4-w DC Namur, 2-w AC
- Sensing distance: ≤ 20 mm (F/QF/NF)
- Output: NPN/PNP - NO/NC - NO+NC
- Connectivity: cable or M12 connector
- Housing: NPB, stainless steel, PBT, IP67
- Special feature: IP68, IP69K and extended temperature range
- Approvals: CE - UL - CSA - ECOLAB

M30

- Supply voltage: 2-w, 3-w, 4-w DC Namur, 2-w AC
- Sensing distance: ≤ 40 mm (F/NF)
- Output: NPN/PNP - NO/NC - NO+NC
- Connectivity: cable or M12 connector
- Housing: NPB, stainless steel, PBT, IP67
- Special feature: IP68, IP69K and extended temperature range
- Approvals: CE - UL - CSA - ECOLAB

M12 - M18 - M30 with IO-Link

- Additional specifications: from standard IO-Link Ver. 1.1
- Time delay, ON, OFF, One shot
- Outputs: configurable NO or NC; NPN, PNP or Push-Pull
- Switching mode: single point, two point or window
- Adjustable Sn and hysteresis
- RPM counter, rotational speed monitoring & temperature alarm

M12 extra short

- Supply voltage: 3-w DC
- Sensing distance: ≤ 8 mm (F/NF)
- Output: NPN/PNP - NO/NC
- Connectivity: cable or M12 connector
- Housing: NPB, IP67
- Special feature: compact dimensions
- Approvals: CE - cULus

Flat pack

- Supply voltage: 4-w DC
- Sensing distance: ≤ 15 mm (F/NF)
- Output: NPN/PNP - NO+NC
- Connectivity: cable or plug version
- Housing: polycarbonate, IP67
- Special feature: easy mounting and compact dimensions
- Approvals: CE - UL - CSA

Rotable head

- Supply voltage: 2-w AC/DC, 2-w AC, 4-w DC
- Sensing distance: ≤ 30 mm (F)
- Output: NPN/PNP - NO/NC - NO+NC
- Connectivity: terminal block
- Housing: PBT, IP67
- Special feature: rotable head
- Approvals: CE

Loop detector

- Supply voltage: 24-240 VAC/VDC
- Input: 1 loop or dual loop
- Output: 2 x SPDT, relay output
- Mounting: plug [LDP], DIN-rail [LDD]
- Special features: automatic sensitivity boost, automatic frequency tuning, fail safe/fail secure, advanced diagnostic
- Approvals: CE - UL [LDP] - CSA [LDP] - cULus [LDD]

Ultrasonic sensors

The ultrasonic sensors from Carlo Gavazzi provide superior sensing solutions for a variety of industrial applications. The UA sensors are excellent for contactless position and distance measurement and are able to detect any sound reflecting targets regardless of colour, transparency or surface. Due to their resistance to temperature variations and immunity against dust, steam and fumes, these sensors are especially well suited to harsh environments. The sensors come in a two switching output version and a combined version with one switching and one analogue output. Thanks to improved technology, an extended sensing distance and a reduced housing length, these sensors provide a state-of-the-art sensor family with high accuracy, versatility and resilience.

M18 Short body PBT housing

- Supply voltage: DC 4-wire
- Sensing distance: 300 or 800 mm teach-by wire
- Output: NPN/PNP - NO/NC
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: switching, positive or negative slope
- Approvals: CE - cULus

M18 Short body stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: 300 or 800 mm teach-by wire
- Output: NPN/PNP - NO/NC
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: AISI316L stainless steel, IP67
- Features: switching, positive or negative slope
- Approvals: CE - cULus

M18 Switching output

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: NPN/PNP - NO+NC
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: switching
- Approvals: CE - cULus

M18 Analogue output

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: positive or negative slope
- Approvals: CE - cULus

M30 Switching output

- Supply voltage: DC 4-wire
- Sensing distance: < 3.5 m teach-in
- Output: NPN/PNP - NO+NC, analogue
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: switching
- Approvals: CE - cULus

M30 Analogue output

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: positive or negative slope
- Approvals: CE - cULus

M18 Stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: NPN/PNP - NO+NC
- Connectivity: cable or M12 connector
- Housing: AISI316L stainless steel, IP67
- Features: switching
- Approvals: CE - cULus

M18 Stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: AISI316L stainless steel, IP67
- Features: positive or negative slope
- Approvals: CE - cULus

M30 Stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: < 3.5 m teach-in
- Output: NPN/PNP - NO+NC, analogue
- Connectivity: cable or M12 connector
- Housing: AISI316L stainless steel, IP67
- Features: switching
- Approvals: CE - cULus

M30 Stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: < 2.2 m teach-in
- Output: analogue 4-20 mA/0-10 V
- Connectivity: cable or M12 connector
- Housing: AISI316L stainless steel, IP67
- Features: positive or negative slope
- Approvals: CE - cULus

M12 Stainless steel

- Supply voltage: DC 4-wire
- Sensing distance: < 400 mm teach-in
- Output: NPN/PNP NO/NC
- Connectivity: cable or M12 pig-tail
- Housing: stainless steel, IP67
- Features: switching, 4-20 mA/0-10 V
- Approvals: CE

M30 (Ø39 mm)

- Supply voltage: DC 4-wire
- Sensing distance: < 3.5 m teach-in
- Output: NPN/PNP - NO+NC, analogue
- Connectivity: cable or M12 connector
- Housing: PBT, IP67
- Features: switching, 4-20 mA/0-10 V
- Approvals: CE - cULus

Conductive level sensors

The Carlo Gavazzi range of conductive level sensors is well suited to most level control applications. The new CL-series of intelligent conductive level controllers are used for monitoring level and controlling pumps of the conductive liquids. CLH models with a flexible conductive level probe can accommodate up to five rods for four different levels of control. Operating levels in the tank can easily be modified by extending or cutting short the length of the electrodes. The typical applications of conductive sensors are level control and flow detection in agriculture, the chemical sector, food and beverage, water distribution and water treatment industries.

CLD 1

- 5 KΩ to 150 kΩ
- Filling or emptying
- 17.5 mm width slim housing
- ON or OFF delay timer
- 1 X 8 A / 250 VAC output

CLD 2EB

- 250 Ω to 500 kΩ
- Filling or emptying
- 17.5 mm width slim housing
- 24-240 VAC/DC supply
- 1 X 8 A / 250 VAC output

CLP 2EB

- 5 KΩ to 150 kΩ
- Filling or emptying
- 35.5 mm width housing
- Simple amplifier
- 1 X 8 A / 250 VAC output

CLP2 Plug-in

- 250 Ω to 500 kΩ
- Filling or emptying
- 35.5 mm width housing
- 3 conductive ranges (L/S/H)
- 2 X 8 A / 250 VAC output

CLD2 DIN-rail

- 250 Ω to 500 kΩ
- Filling or emptying
- 35.5 mm width housing
- 3 conductive ranges (L/S/H)
- 2 X 8 A / 250 VAC output

CLP2 Master-Slave

- 250 Ω to 500 kΩ
- Filling or emptying
- Cascade up to 7 amplifiers
- Many different levels
- 1 X 8 A / 250 VAC output

CLP4 Plug-in

- 250 Ω to 500 kΩ
- Many different functions
- Up to 4 levels
- Tank well function
- 2 X 8 A / 250 VAC output

CLD4 DIN-rail

- 250 Ω to 500 kΩ
- Many different functions
- Up to 4 levels
- Tank well function
- 2 X 8 A / 250 VAC output

CLH

- 3 or 5 electrodes
- Standard 1 m length
- Length can be extended
- Electrode isolation
- Flexibility

VN/VT

- Up to 4 electrodes
- Standard 1 m length
- Stainless steel electrodes
- Electrode isolation
- Different housing materials

VH

- 1 electrode
- Level hanging probe
- UV resistant PVC or Neoprene cable
- Stainless steel electrodes
- Suitable for swimming pools

A94-10

- 2 electrodes
- Level hanging probe
- 5 m PVC cable
- Polyester housing
- Suitable for swimming pools

Magnetic sensors

Carlo Gavazzi offers a comprehensive range of proximity magnetic sensors to be used in detection applications. They are employed in conjunction with an external magnet: when the sensor approaches the magnet, the output from the sensor changes the status. Typically these sensors have a longer sensing distance than standard proximity sensors. There is a wide variety of styles available including rectangular, cylindrical and slotted. In addition, special coded magnets and sensors are available for use in safety applications. Magnetic sensors are frequently used for elevators and lifts, gate control, level detection and access control. Some proximity and level sensors are certified for use in explosive environments (ATEX).

Ø 6

- Max. switch. power contact: 10 VA
- Operating distance: > 8 mm
- Output: NO
- Connectivity: 0.5 m twin lead cable
- Housing: plastic, IP67
- Special feature: cylindrical series
- Approvals: CE

Ø 13,5

- Max. switch. power contact: up to 120 VA
- Operating distance: 3 - 32 mm
- Output: NO, NC, CO
- Connectivity: 0.5 m PVC cable
- Housing: plastic, IP67
- Special feature: cylindrical series
- Approvals: CE

M8

- Max. switch. power contact: up to 10 VA
- Operating distance: 8 - 27 mm
- Output: NO, CO
- Connectivity: 2 m PVC cable
- Housing: stainless steel or NPB, IP67
- Special feature: cylindrical series
- Approvals: CE

M10

- Max. switch. power contact: up to 120 VA
- Operating distance: 7 - 36 mm
- Output: NO, CO
- Connectivity: 2 m PVC cable
- Housing: brass or NPB, IP67
- Special feature: cylindrical series
- Approvals: CE

M12

- Max. switch. power contact: up to 120 VA
- Operating distance: 2 - 20 mm
- Output: NO, NC, CO, bistable
- Connectivity: 2 m PVC cable or 2 m silicone cable
- Housing: brass, NPB, plastic, IP67
- Special feature: includes a special family for elevators
- Approvals: CE

M16

- Max. switch. power contact: up to 100 VA
- Operating distance: 5 - 32 mm
- Output: CO, Bistable
- Connectivity: 2 m PVC cable or 0.5 m silicone cable
- Housing: brass, plastic, IP67
- Special feature: includes a special family up to 150°C
- Approvals: CE

Flat type

- Max. switch. power contact: up to 120 VA
- Operating distance: 7 - 40 mm
- Output: NO, NC, CO, bistable
- Connectivity: PVC cable, pig tail, twin lead cable
- Housing: plastic, IP67
- Special feature: includes a family with 2xNC outputs
- Approvals: CE

Level (inox)

- Max. switch. power contact: up to 120 VA
- Float diameter: Ø 28, Ø 53
- Output: NO, NC, CO, NO/NC
- Connectivity: silicone cable, XLPE cable
- Housing: stainless steel, IP67
- Special feature: includes a family up to 200°C
- Approvals: CE

Level (plastic)

- Max. switch. power contact: up to 120 VA
- Float diameter: Ø 25, 17.5, 31, 44, 45 mm
- Output: NO, CO, NO/NC
- Connectivity: PVC cable, silicone cable, XLPE cable
- Housing: plastic, IP67, IP68
- Special feature: possibility to reverse the output function
- Approvals: CE

ATEX

- Max. switch. power contact: up to 100 VA
- Operating distance: 8 - 35 mm
- Output: NO, NC, CO
- Connectivity: silicone, HF PUR, PVC cable
- Housing: stainless steel, self-ext. plastic, IP66, IP67
- Special feature: Category 2G, 2D or 1G, 1D
- Approvals: CE, TUV Sud

Safety sensors

- Max. switch. power contact: 5 VA
- Operating distance: 10 - 20 mm
- Output: several configurations
- Connectivity: PVC cable, pig-tail with M12 connector
- Housing: rectangular or cylindrical, stainless steel, plastic, IP67
- Special feature: safety and auxiliary outputs
- Approvals: CE - UL

Safety sensors (compact)

- Max. switch. power contact: 6 W
- Operating distance (Sao): 5 mm
- Output: 2 NO, 1 NO + 1 NC
- Connectivity: PVC cable, M8-plug
- Housing: rectangular, plastic, IP67
- Special feature: compact dimensions, extended operating temperature
- Approvals: CE - UL

Safety

Carlo Gavazzi's range of safety modules includes modules for light curtains, safety mats, two hand control (anti-tie down devices), magnetic and safety switches and emergency stops. They are suitable for use in applications up to Performance Level "e" and Safety Integrity Level SIL 3. We also offer extension units which can be used to increase the number of safety outputs. Our safety modules are cUL and TUV approved.
Our modules are powered by 24 VAC/DC and feature LED status indicators.

SMS20/SMS31 Emergency stop

- Emergency stop and safety gate modules up to Performance Level "e" for category 0 emergency stops
- 2 NO safety outputs (SMS20) or 3 NO safety outputs plus 1 NC auxiliary (SMS31) with automatic, manual and monitored manual start
- Detachable screw terminals

SMSA31 Safety gates

- Safety gate modules, with antivalent function, up to Performance Level "e" for safety magnetic switches
- 3 NO safety outputs plus 1 NC auxiliary with automatic, manual and monitored manual start
- Detachable screw terminals

SM2H21 Two hand control

- Safety module, up to Performance Level "e", for Two-hand controls Type IIIC (EN 574)
- For high risk applications such as presses and punches
- Detachable screw terminals

SMS20 Lift levelling

- Designed to be used in lift plants for floor levelling of the cabin.
- Compliant with standards EN 81-20, EN 81-50
- 2 NO safety outputs
- Detachable screw terminals

SME41 Expansion modules

- The expansion module is used to increase the number of safety outputs, up to Performance Level "e"
- 4 NO instantaneous relay outputs plus 1 NC auxiliary output for feedback
- Detachable screw terminals

Multifunction module delayed outputs

- The device can be connected with different types of input: E-stop, E-gate, limit switch, non-contact switch, safety light curtains (ESPE Type 4,Type 2), safety light beam (single beam), safety mat
- 2 x OSSD direct +2 x OSSD delayed
- Selectable delay time. Can be easily set-up through the hex-switch, from 0 to 30 sec.

Multifunction modules instantaneous outputs

- The device can be connected with different types of input: E-stop, E-gate, limit switch, non-contact switch, safety light curtains (ESPE Type 4,Type 2), safety light beam (single beam), safety mat
- 3 x OSSD (NO) + 1 OSSD Auxiliary (1 NC) (CM30D1A) or 4 x OSSD (NO) (CM40D0A)
- 4 LEDs on the front panel indicate the status and any errors during operation

Lift levelling safety module

- Control of levelling, re-levelling and preliminary operation with doors not closed and locked
- 2 x OSSD Safety (NO) + 2 OSSD Auxiliary (1 NC and 1 NO)
- Possibility of connecting mechanical or magnetic switches (reed contact)

NLG Light curtains

- Control Electro Sensitive Protective Equipment (ESPE) with static PNP or relay outputs reaching Performance Level "e"
- 2 NO safety outputs (NLG02) or 3 NO safety outputs plus 1 NC auxiliary (NLG13) with automatic/manual or monitored manual reset version
- Fixed or detachable screw terminals

Configurable master module

- Configurable Master safety controller
- Simultaneous monitoring of several safety devices and commands
- 8 digital safety inputs
- 2 OSSD digital safety output pairs
- 4 Test outputs and 2 programmable status outputs and separate EDM and Start/Restart

Speed monitoring modules

- The modules allow the configuration of up to 4 speed thresholds for each logic output (axis)
- Each module integrates two logic outputs configurable via the MSD and is therefore capable of controlling up to two independent axes
- RJ45 for encoder connections and terminal blocks for connection of proximity (up to 2 proximity per module)

I/O Expansion modules

- I/O module: 8I + 2O + 4 test outputs and 2 programmable status outputs
- I + Test O module: 12I + 8TO and separate EDM and Start/Restart
- Input only modules: 8/16 safety inputs + 4 test O
- Output only modules: 2/4 OSSD and separate EDM and Start/Restart
- Relay Output modules: different versions with NO and NC configurations

Safety

Carlo Gavazzi offers a complete range of limit and safety switches, providing machine manufacturers and panel builders with global and exhaustive solutions which allow machinery to operate correctly, minimizing process stops and personnel risk. Switches may be operated by process variables such as pressure, temperature, flow, current, voltage and force, acting as sensors in a process and used to automatically control a system.

Limit switch plastic body

- Plastic body
- Degree of protection: IP65
- Five different connection types
- Six different contact types
- Twenty-five different heads

Limit switch plastic body

- Plastic body
- Degree of protection: IP65
- Five different connection types
- Six different contact types
- Eighteen different heads

Limit switch metal body

- Metal body
- Degree of protection: IP66
- Five different connection types
- Six different contact types
- Twelve different heads

Miniature limit switch metal body

- Metal body
- Degree of protection: IP67
- Pre-wired cable
- Two different contact types
- Fifteen different heads

Limit switch metal body

- Metal body
- Degree of protection: IP66
- Three different connection types
- Ten different contact types
- Twelve different heads

Miniature limit switch plastic body

- Plastic body
- Degree of protection: IP67
- Pre-wired cable
- Two different contact types
- Fifteen different heads

Safety hinge

- Plastic body
- Degree of protection: IP67
- Two different contact configurations 2NO+2NC / 1NO+3NC
- Mechanical durability 1,000,000 operations
- Safety system of machinery up to SIL 3

Safety limit switch plastic body

- Plastic body
- Degree of protection: IP65
- Five different connection types
- Four different contact types
- Five different heads

Safety limit switch plastic body

- Plastic body
- Degree of protection: IP65
- Five different connection types
- Five different contact types
- Six different heads

Safety limit switch plastic body

- Plastic body
- Degree of protection: IP65
- Five different connection types
- Five different contact types
- Six different heads

Safety limit switch metal body

- Metal body
- Degree of protection: IP66
- Five different connection types
- Five different contact types
- Six different heads

Safety limit switch metal body

- Metal body
- Degree of protection: IP66
- Five different connection types
- Five different contact types
- Six different heads

Connectivity and Wind sensors

To support its wide range of sensors, Carlo Gavazzi also offers a number of accessories and connectors for all market needs. All our accessories, like our sensors, are characterized by high quality standards and are designed for ease of installation. The SCTL55 is the Industry 4.0 portable, self-powered user-friendly configurator for IO-Link sensors, providing simple configuration, monitoring and advanced diagnostic data.

Wind sensors are designed for measuring wind direction and wind speed in a wide variety of applications including wind turbines, cranes, weather stations and solar panels.

SCTL55
Smart configurator

- Handheld device for easy monitoring, diagnostic and configuration of IO-Link sensors
- IO-Link v1.1
- 5.5" HD touch screen display
- Automatic IODD file download via Wi-Fi
- High capacity rechargeable battery
- M8 3-wire, M8 4-wire and M12 connectors
- Approvals: CE - FCC - IC

ST03
Sensor tester

- Sensor tester
- Suitable for 2/3/4 wire and NAMUR sensor
- LED shows NO or NC
- LED shows NPN or PNP
- Comes with buzzer

CONB1
Straight and Angled

- M12 connector
- Straight version [-S..]
- Angled version [-A..]
- 2/5/10/15 m cable length
- NPN/PNP LED version
- 3/4/5 wire DC version
- IP67 rating
- PVC or PUR cable

CONB5
Straight and Angled

- M8 Connector
- Straight version [-S..]
- Angled version [-A..]
- 2/5/10/15 m cable length
- 3 or 4 wire DC version
- IP67 rating
- PVC or PUR cable

CONB1..W
Straight and Angled

- M12 connector
- Straight version [-S.W]
- Angled version [-A.W]
- 2 or 5 m cable length
- 4 wire AC version
- UL Ecolab approval
- IP69K rating
- TPE cable
- Optional NPN/PNP LED

CONH6
Straight and Angled

- M12 connector
- Straight version [-S.]
- Angled version [-A.]
- 2 or 5 m cable length
- 2 wire AC version
- IP67 rating
- PVC cable

CONB14NF-S/-A
Connector only

- M12 connector only
- Straight version [CONB14NF-S]
- Angled version [CONB14NF-A]
- For 0.75 mm² wires
- 4 wire version
- IP67 rating

Wind speed
DWS-V

- Anemometer
- Measures wind speed
- 2 to 30 m/s
- PNP or NPN output
- Built-in heater

Wind direction
DWS-D

- Wind vane
- Measures wind direction
- 0° to 360° measurement
- 90° measurement interval
- PNP or NPN output

CARLO GAVAZZI

Solid state relays

Carlo Gavazzi offers a comprehensive range of solid state relays (SSRs) covering AC and DC switching, 1-phase and 3-phase, suited for a wide range of applications. SSRs are used extensively in the plastics, packaging, food processing, semiconductor manufacturing and HVAC industries primarily for temperature control. Thanks to their fast switching capability, SSRs are the most reliable switching components for process accuracy. Over the years, SSRs have become the preferred switching solution compared to mechanical contactors as they can perform a very large number of switching cycles without breaking down. This ensures low machine downtime and hence lower running costs.

PCB mounting RP1A, RP1D

- AC or DC output switching
- Zero Cross [RP1A], Instant On [RP1B] or DC [RP1D]
- Ratings up to 480 VAC, 5.5 AAC [RP1A/B]
- Ratings 350 VDC / 1 ADC, 60 VDC / 8 ADC [RP1D]
- Approvals: CE - cURus - VDE - [RP1A/B] - EAC

1-phase SSR RF1

- Zero Cross [RF1A] or Instant On [RF1B] switching
- Ratings up to 280 VAC, 25 AAC
- Integrated transil for output protection
- Control ON LED
- Approvals: CE - UR - CSA - VDE - EAC

1-phase SSR RA

- Zero Cross output switching
- Ratings up to 660 VAC, 110 AAC, 6600 A^2s
- High blocking voltage option
- Control ON LED
- Approvals: CE - UR - CSA - EAC

1-phase SSR RM1, RAM1

- Zero Cross [RM1A] or Instant On [RM1B] switching
- Ratings up to 759 VAC, 125 AAC, 18000 A^2s
- Integrated varistor for output protection
- Control ON LED
- Approvals: CE - UR - CSA - CCC - EAC - VDE [RAM1]

2- pole SSR RA2A

- 2 poles in 1 housing, independent control
- Ratings up to 660 VAC, 40 AAC per pole
- Zero Cross switching
- DC control voltage
- Approvals: CE - UR - EAC - CSA (excl. RA2A..C)

2- pole SSR RKD2, RK2

- 2 poles in 1 housing, independent control [RKD2] or common control [RK2]
- Ratings up to 660 VAC, 75 AAC per pole, 9800 A^2s
- Zero Cross or Instant On switching
- DC control voltage
- Approvals: CE - UR - CSA - VDE - EAC

3-phase SSR RZ3A

- 3-phase Zero Cross switching
- Suitable for resistive and inductive loads
- Ratings up to 759 VAC, 75 AAC
- Control ON LED
- Approvals: CE - UR - CSA (excl. 690 VAC) - EAC

DC SSR RD

- DC switching
- Ratings 5A / 60 VDC, 1A / 350 VDC
- DC control voltage
- Flat mounting surface
- Approvals: CE - CSA

Slim line SSR RGS1

- Compact, 17.5 mm wide
- Zero Cross [RGS1A] or Instant On [RGS1B] switching
- Ratings up to 759 VAC, 90 AAC, 18000 A^2s
- AC or DC control
- Approvals: CE - UR - CSA - VDE - EAC - GL (50 AAC only)

Slim line SS contactors RGC1

- Min. product width 17.5 mm (37 AAC) up to 70 mm (85 AAC)
- Ratings up to 660 VAC, 85 AAC, 18000 A^2s
- E-type (contactor) or U-type (SSR) terminal layout
- 100 kA UL short circuit current rating
- Approvals: CE - cULus - VDE - EAC- GL (up to 30 AAC)

Slim line SS contactors RGH1

- Zero Cross switching, Blocking voltage up to 1600 V_P
- Ratings up to 759 VAC, 65 AAC, 6600 A^2s
- Integrated varistor on output (up to 660 VAC)
- 100 kA UL short circuit current rating
- Approvals: CE - cULus - VDE - EAC

3-phase SS contactors RGC2A, RGC3A

- 3-pole [RGC3A] or 2-pole switching + 1 direct pole [RGC2A]
- Ratings up to 660 VAC, 75 / 65 AAC [RGC2/3]
- Motor ratings up to 11 kW / 15 HP @ 400 VAC
- RGC..M for system malfunction monitoring
- Approvals: CE - cULus - EAC - CCC - VDE [RGC..10]

Solid state relays

Carlo Gavazzi now offers additional features to the switching function of the SSR. Integrated monitoring of loads or SSR malfunction ensures a timely failure detection and so scrap and rework costs in production plants are kept to a minimum. SSRs with a communication interface embrace Industry 4.0. Data is accessible from SSRs in real time and can be used to predict machine abnormalities in a timely manner to avoid stoppages.

Carlo Gavazzi also offers a range of accessories that complement the solid state relay solutions, such as heatsinks, terminal adaptors, protection covers and thermal interfaces. Carlo Gavazzi's SSRs conform to international standards.

Proportional controllers RM1E

- Phase angle switching
- Ratings up to 660 VAC, 125 AAC, 18000 A²s
- 4-20 mA or 0-10 VDC analogue input
- Integrated varistor for output protection
- Approvals: CE - UR - CSA - EAC

Proportional controllers RGS1P

- Selectable switching mode - Phase angle, full cycle, advanced full cycle switching or soft start
- 4-20 mA or 0-10/0-5/1-5 V input
- Ratings up to 660 VAC, 90 AAC
- Integrated varistor for output protection
- Approvals: CE - UR - CSA - EAC

Proportional controllers RGC1P

- Selectable switching mode - Phase angle, full cycle, advanced full cycle switching or soft start
- 4-20 mA or 0-10/0-5/1-5 V input
- Ratings up to 660 VAC, 63 AAC
- Integrated varistor for output protection
- Approvals: CE - cULus - EAC

Proportional controllers RGC2P, RGC3P

- Phase angle, full cycle, advanced full cycle switching or soft start
- 0-20/4-20/12-20 mA or 0-10/0-5/1-5 V input
- RGC2P ratings (2-phase): 660 VAC, 75 AAC/pole
- RGC3P ratings (3-phase): 660 VAC, 65 AAC/pole
- Integrated monitoring for load loss or SSR malfunction
- Approvals: CE - cULus - EAC - CCC

System monitoring RA..S

- Monitoring for mains loss, load or SSR failure
- Ratings up to 530 VAC, 110 A
- DC control voltage, DC external supply
- Normally open or normally closed alarm output
- Approvals: CE - UR - CSA - EAC

System monitoring RGS..M, RGC..M

- Monitoring for system fault (mains loss, load loss, SSR open and short circuit), SSR internal error and supply out of range
- Ratings up to 660 VAC, 90 AAC
- DC control voltage, DC external supply
- Transistor output for remote alarm signalling
- Approvals: CE - UR - CSA - cULus [RGC] - EAC

Current sensing RGS1S, RGC1S

- Zero Cross switching with integrated current measurement
- Partial load failure detection (1/6)
- Monitoring for system malfunction with alarm output
- Ratings up to 660 VAC, 90 AAC, 18000 A²s
- Approvals: CE - UR - CSA - cULus [RGC] - EAC

Communication interface NRG

- Modbus RTU over RS485
- 32 SSRs per bus chain
- ON/OFF, Full cycle, Advanced full cycle or Burst switching mode
- Read-outs: current, voltage, frequency, power, energy, running hours and diagnostics
- Ratings up to 660 VAC, 90 AAC
- Approvals: CE - cULus - UR - CSA - EAC

Integrated Over Temperature Protection RGC..P

- Ratings up to 660 VAC, 85 AAC, 18000 A²s
- Output protected against overheating, automatic re-start after cool down
- Transistor alarm output for remote signalling
- Control ON and Fault LED indication
- Approvals: CE - cULus - VDE - EAC

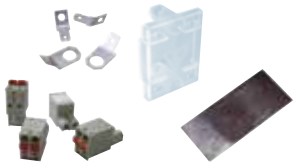
Integrated fuse RGC1F

- Zero Cross switching with onboard semiconductor fuse
- Product width 35 mm
- Monitoring for system malfunction [RGC1FS] and open fuse
- Ratings up to 660 VAC, 40 AAC
- Approvals: CE - cULus (up to 30 AAC) - EAC

Heatsinks

- A wide range of heatsinks suitable for DIN, panel or thru wall mounting
- Thermal resistance values from 5.4 to 0.4°C/W
- 24VDC, 115VAC or 230VAC supply voltage for heatsinks with integrated fan
- RoHS compliant

Accessories



- A wide range of other accessories suitable for use with SSRs: thermal pads, touch protection covers, varistors, terminal adaptors, cable accessories
- Optionally pre-assembled from factory
- All accessories are RoHS compliant

CARLO GAVAZZI

Soft starters

Carlo Gavazzi offers a comprehensive range of soft starting and motor reversing solutions for single and three phase squirrel cage a.c. induction motors. Carlo Gavazzi offers solutions for scroll compressors (RSBS, RSBD, RSBT, HDMS), centrifugal pumps and ventilators (RSWT). For other applications such as dryers, mixers, fans, hydraulic pumps and piston compressors, general purpose solutions such as the RSGD are available. Carlo Gavazzi soft starters are designed with self-learning algorithms for ease of use and better load matching. The RGTS and RSHR are fully solid-state solutions for single and three phase applications that require high frequency switching. In addition, customized solutions to satisfy specific customer requests can be provided.

Scroll compressor soft starters RSBD 45 mm

- Operational current: 12 to 45 A
- Self-learning algorithm with current balancing
- Top of ramp and alarm relay indication
- Max. starts per hour: 12
- Approvals: CE - cULus - CCC - EAC

Scroll compressor soft starters RSBD 75 mm

- Operational current: 55 to 95 A
- Self-learning algorithm for current reduction
- No user adjustments required
- Max starts per hour: 12
- Approvals: CE - cULus - CCC - EAC

Scroll compressor soft starters RSBT 45 mm

- Operational current: 16 to 32 A
- Self-learning algorithm with high pressure function
- No user adjustments required
- Optional: serial communication (Modbus) [Version: VC1HP]
- Max. starts per hour: 12
- Approvals: CE - cULus - VDE - CCC

Scroll compressor soft starters RSBT 120 mm

- Operational current: 55 to 95 A
- Self-learning algorithm for improved current reduction
- Optional: serial communication (Modbus) [Version: VC]
- Max. starts per hour: 12
- Approvals: CE - cULus - CCC

Pump and ventilator soft starters RSWT 45 mm

- Operational current: 12 to 25 A
- Algorithm reduces oscillation during pump start and stop
- Manual or auto-reset of alarms
- Integrated overload protection
- Approvals: CE - cULus - CCC - EAC

Pump and ventilator soft starters RSWT 75 mm/120 mm

- Operational current: 32 to 90 A
- Operational voltage: 220 - 600 VAC
- Up to 20 starts per hour
- Integrated overload protection and remote reset for alarms
- Approvals: CE - cULus - CCC - EAC

General purpose soft starters RSGD 45 mm

- Operational current: 12 to 45 A
- Operational voltage: 220 - 600 VAC
- Self-learning algorithm for optimised starts
- Torque control during ramp-down
- Compact dimensions: 45 mm wide housing
- Optional: motor overload protection (Class 10)
- Approvals: CE - cULus - CCC - EAC

General purpose soft starters RSGD 75 mm

- Operational current: 55 to 100 A
- Operational voltage: 220 - 600 VAC
- Self-learning algorithm for current reduction and current balancing
- PTC input and remote reset of alarms
- Integrated motor overload protection (Class 10)
- 3 relay outputs: top of ramp, alarm, run
- Approvals: CE - cULs - CCC - EAC

Motor reversing relay RR2A

- Operational current: up to 11 A
- Motor reversing relay
- Built-in interlock function
- Integrated voltage transient protection
- Approvals: CE - UL - cUL

1-phase solid state soft starter RGTS

- Operational current: 12/16/25 A
- Operational voltage: 100 - 240 VAC
- 100 kA short circuit current rating
- Max. starts per hour: 10
- Approvals: CE - cULus

1-phase compressor soft starter RSBS

- Operational current: 32 A
- Current limit starting with high pressure function
- Max. starts per hour: 10
- Approvals: CE - cULus (pending)

1-phase dynamic motor starter HDMS

- Operational current: 12 to 37 A
- Eliminates the need for a start capacitor typically used to start single phase motors
- >70% start current reduction on scroll compressors and submersible pumps
- Tool-free terminals
- Approvals: CE - cULus

Variable frequency drives

Carlo Gavazzi offers a range of variable frequency drives (VFDs) for general purpose applications (RVLF) and also for pumps and ventilators (RVFF) up to 160 kW. The RVFF series can also control permanent magnet motors (BLDC/PM motors). Carlo Gavazzi also offers PC software that facilitates parameter configuration and also makes it is easy to download the configuration onto multiple VFDs.

General purpose VFD RVLF 1-phase 100 V

- V/F Control + Sensorless Vector control
- Input voltage 1-phase 100-120 VAC
- 0.4 kW and 0.75 kW
- Built-in RJ45 for MODBUS and BACNet communication
- Panel mount or DIN-rail (with accessory)

General purpose VFD RVLF 1-phase 200 V

- V/F Control + Sensorless Vector control
- Input voltage 1-phase 200-240 VAC
- 0.4 kW to 2.2 kW
- Built-in RJ45 for MODBUS and BACNet communication
- Built-in Class 2 EMI filter
- Panel mount or DIN-rail (with accessory)

General purpose VFD RVLF 3-phase 200 V

- V/F Control + Sensorless Vector control
- Input voltage 3-phase 200-240 VAC
- 0.4 kW to 2.2 kW
- Built-in RJ45 for MODBUS and BACNet communication
- Panel mount or DIN-rail (with accessory)

General purpose VFD RVLF 3-phase 480 V

- V/F Control + Sensorless Vector control
- Input voltage 3-phase 380-480 VAC
- 0.75 kW to 11 kW
- In built RJ45 for MODBUS and BACNet communication
- Built-in Class 2 EMI filter
- Panel mount or DIN-rail (with accessory)

Pump and ventilator VFD RVFF 3-phase 480 V

- V/F Control + Sensorless Vector Control + Permanent Magnet SLV
- Input voltage 3-phase 380-480 VAC
- 4 kW to 160 kW
- Panel mounting
- Inbuilt filter up to 55 kW
- PLC, PID and Multi-pumps control

DeviceNET gateway RV-DNET

- Optional communication module for RVLF/RVFF
- DeviceNET communication

ProfiBus gateway RV-PDP

- Optional communication module for RVLF/RVFF
- PROFIBus communication

CANopen gateway RV-CAN

- Optional communication module for RVLF/RVFF
- CANopen communication

Modbus TCP/IP gateway RV-TCPIP

- Optional communication module for RVLF/RVFF
- TCP-IP Communication

Pump card RV-IO-8DO

- Optional accessory of RVFF
- Controls up to 8 equipment/fans/pumps in Fixed mode
- Controls up to 4 equipment/fans/pumps in cyclic mode

Copy Module RV-CU

- Optional accessory for RVLF or RVFF
- A module to easily duplicate settings and parameters to either RVLF or RVFF

CARLO GAVAZZI

Industrial relays and Sockets

Carlo Gavazzi offers a comprehensive range of electromechanical relays for industrial automation.
These are available in plug-in and PCB mounting. Many of the relays come as standard with a push-to-test button as well as a LED indicator. Carlo Gavazzi relays are frequently used in control panels, in HVAC control systems, pump and compressor control and electronic and consumer products. They are typically used to switch loads such as heaters, lights and motors. Carlo Gavazzi also offers a complete range of sockets (DIN-rail mounting) for industrial and PCB relays.

Industrial RCP

- 8 or 11-pin socket mounting
- 2 or 3 change-over contacts
- Matching sockets available
- AC coils 6 to 230 VAC/DC coils 6 to 110 VDC
- Standard with LED, Push arm and Flag

Midi industrial RPY

- High switching power
- 10 or 16 A switching capacity
- 1 or 2 or 3 or 4 pole configuration
- DC coils from 6 to 110 V/AC coils from 6 to 230 V
- Flanged pins 5 mm (0.20")

Midi industrial RMI (2 pole)

- High switching power
- 10 A switching capacity
- 2 pole configuration
- AC coils 6 V to 230 V/DC coils 6 to 110 V
- Standard with LED, Push arm and Flag

Midi industrial RMI (4 pole)

- High switching power
- Contact rating 6 A
- 4 pole configuration
- AC coils 6 to 230 V/DC coils 6 to 110 V
- Standard with LED, Push arm and Flag

Power NF/NP

- Switching capacity 30 A
- DC coils 6 to 110 VDC / AC coils 12 to 240 VAC
- 1 or 2 normally open contact
- Faston terminals / PCB terminals

Power NB

- Power relay
- Switching capacity 30 A
- DC coils 6 to 110 VDC / AC coils 12 to 240 VAC
- 1 or 2 normally open contact
- Bolt terminals

Power CF/CS

- High switching power
- Switching capacity 30 A
- 2 normally open contacts, 2 change over contacts
- DC coils from 5 to 110 V / AC coils from 24 to 277 V
- Faston terminals / PCB terminals

Slim RSLM

- 5 mm width
- Switching capacity 6 A
- 1 normally open contacts or 1 change over contact
- DC coils from 12 to 60 V
- PCB terminals

Sockets ZPD

- Sockets for RCP relays
- Rated voltage 300 VAC
- Rated current 10 A
- Terminal type screw cage
- Contact material nickel plated - CuZn33

Sockets ZMI

- Sockets for RMI relays
- Rated voltage 300 VAC
- Rated current 10 A
- Terminal type screw cage
- Contact material Cu Ni

Sockets ZPY

- Sockets for RPY relays
- Rated voltage 300 VAC
- Rated current 16 A
- Terminal type screw cage
- Contact material nickel plated - CuZn33

Sockets ZRLS

- Sockets for RSLM relays
- Rated voltage up to 250 VAC
- Rated current 6 A
- Screw terminals or spring terminals
- Options: various AC/DC voltage input

Switching power supplies

Carlo Gavazzi presents a complete range of power supplies and battery chargers for both the automation industry and building automation. These are available in 3 different package types: cabinet DIN-rail mounting, low profile DIN-rail mounting for electrical distribution panels and the enclosed type. Power supplies are also available with DC, 1-phase, 2-phase and 3-phase inputs. Output voltages span from 5 to 48 VDC, with output powers from 5 W to 960 W. Aside from the power supplies there are also other available devices such as battery chargers and redundant controller modules. The battery chargers are available in 2 powers, 30 W and 60 W, and 2 voltages, 12 V and 24 V. Redundancy modules can manage 2 inputs from power supplies in order to guarantee that the DC voltage is always provided even in the case of failure of one power supply.

SPD 1 - DIN-rail 1-phase power supplies

- From 5 to 480 W output power, 110 V or 240 VAC 1-phase or 120 V to 370 VDC input
- Power OK output
- Screw or spring terminals
- Adjustable output
- TUV approved, cULus Listed, Class 2 UL1310 (up to 92 W), Class I Div 2

SPD 2 - DIN-rail 100 W 2-phase power supply

- 100 W output power, 340 to 575 VAC (2-phases) or 480 - 820 VDC input
- Power OK output
- Passive PFC
- High efficiency, compact dimensions
- Class I, Div 2 certified; TUV approved, cULus listed

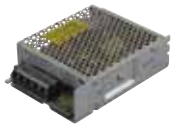
SPD 3 - DIN-rail 3-phase power supplies

- From 120 to 960 W output power, 340 - 575 VAC (2- or 3-phases) or 480 - 820 VDC input
- Power OK output
- Active PFC
- Parallel operation switch
- TUV approved, cULus Listed

SPM - Low profile DIN-rail power supplies

- From 7.5 to 100 W output power, 110 or 240 VAC or 120 to 370 VDC input
- Short circuit and overload protection
- Internal input filter
- UL Class 2 output
- TUV approved, cULus Listed, Class 2 UL1310 (up to 92 W), Class I Div 2

SPPC Enclosed type 25 W ~ 800 W



- 110 V / 240 VAC or 120 to 370 VDC input
- Wide operating temperature -25°C to 70°C
- Conformal coated PCB
- Available with PFC
- Cooling fan w/ speed control
- Adjustable output
- cURus recognized

SPDM - DIN-rail 1-phase power supplies

- 30 W to 240 W output power, 110 VAC / 240 VAC or 120 V to 370 VDC input voltage
- Compact dimensions
- Adjustable output
- DC Ok indication
- TUV approved, cULus listed, Class 2 UL1310 (up to 75 W)

SPDC - DIN-rail 1-phase power supplies

- 120 W and 480 W output power, 110 VAC / 240 VAC or 120 V to 370 VDC input voltage
- Very compact
- Parallel connection output
- DC Ok Output
- TUV approved, cULus listed

SPM5BC - 30 W and 60 W battery chargers

- Universal AC input 90 VAC to 264 VAC
- For lead acid batteries
- 12 V or 24 V output
- Battery polarity protection

SPUC - 30 A 12/24 VDC UPS Controller

- DC input 12 or 24 V / Uninterrupted DC output 12 or 24 V
- Up to 30 A output
- For batteries up to 25 Ah
- DIN-rail mounting
- TUV approved, cULus listed

SPUBC - 120 W 24 VDC UPS & power supply

- 24 V power supply, Battery Charger and UPS
- Smart battery diagnosys and Charge management
- For batteries up to 50 Ah
- DIN-rail mounting
- cURus recognized

SPM2RM2410 - SPD24RM20 redundant module 10 to 20 A

- 24 V redundant power supply management
- 2 DIN-rail modules size / 2 "Power ready" signal outputs
- Up to 20 A output
- Simple installation and setup
- TUV approved, cULus listed

SPUBAT24 DIN-rail battery bank 1.2 to 12 Ah

- Stainless steel battery rack for UPS and battery chargers
- 24 V VRLA Battery bank
- Front panel screw terminals for easy connection
- DIN-rail or wall mounting
- Built-in easily replaceable fuse

Digital panel meters

Carlo Gavazzi offers a comprehensive range of digital panel meters, digital displays (for current meters, ammeters, voltmeters, frequency meters, temperature meters and temperature controllers, tachometers, and rate meters) and signal conditioners for OEM, panel builder, instrumentation and MRO customers.

Covering most input types, our digital panel meters are well suited to any display requirements. With the modular types it is possible to realize any sort of configuration and the analogue signal can also be retransmitted to show the readings. The displayed colour can be set to change at specific thresholds, allowing any type of anomaly to be easily seen.

Touch display

- 4.3" and 7" colour displays
- Easy setup of graphic pages and functions with the powerful software Wizard
- BACnet and KNX gateway
- Support viewing from IP cameras
- Ethernet connection

Modular indicator/ controller UDM35

- 3½ DGT LED
- AC/DC V-I, Temperature and Resistance, Speed, Frequency and Period measurement
- Up to 4 independent alarm set-points, 20 mA/10 VDC analogue output
- RS485 or RS232, MODBUS RTU
- Panel mounting
- Degree of protection: IP67, NEMA12, NEMA4x

Modular indicator/ controller UDM40

- 4 DGT LED
- AC/DC V-I, Temperature and Resistance, Speed, Frequency and Period measurement
- Up to 4 independent alarm set-points, 20 mA/10 VDC analogue output
- RS485 or RS232, MODBUS RTU
- Panel mounting
- Degree of protection: IP67, NEMA12, NEMA4x

Modular controller USC

- Modular signal's conditioner
- AC/DC V-I, Temperature and Resistance, Speed, Frequency and Period measurement
- Up to 4 independent alarm set-points, 20 mA/10 VDC analogue output
- RS485 or RS232, MODBUS RTU
- DIN-rail mounting
- Degree of protection: IP20

Indicator LDI3

- 3 DGT µP-based
- AC V-I
- 20 Selectable CT/VT primary ranges
- 48 x 96 mm
- Panel mounting
- Degree of protection: IP50 (IP65 on request)

Indicator LDM30

- 3 DGT LED + "0" dummy µ-based
- AC V-I
- Dip-switch-selectable ranges
- 48 x 96 mm
- Panel mounting
- Degree of protection: IP50 (IP65 on request)

Indicator/controller LDM35H

- 3½ DGT LED
- AC/DC V-I
- Up to 2 independent alarm set-points
- 48 x 96 mm
- Panel mounting
- Degree of protection: IP65

Indicator/controller LDM40

- 4 DGT LED
- AC/DC V-I
- Up to 2 independent alarm set-points, 20 mA/10 VDC analogue output, RS485 MODBUS RTU
- 48 x 96 mm
- Panel mounting
- Degree of protection: IP65

Indicator DI3-DIN

- 3 DGT µP-based
- AC/DC V-I, Frequency
- 20 Selectable CT/VT primary range
- 3-DIN modules
- DIN-rail mounting
- Degree of protection: IP40

Indicator DI3-72

- 3 DGT µP-based
- AC/DC V-I, Frequency
- 18 Selectable CT/VT primary range
- 72 x 72 mm
- Panel mounting
- Degree of protection: IP50 (IP65 on request)

Power analyzers and current transformers

Main electrical metering is essential to monitor all the electrical variables coming from the submetering. Installations are becoming more and more demanding, some of them powering critical loads, so power quality with harmonic analysis is vital. Carlo Gavazzi's range provides various mounting and installation solutions to meet different application requirements. In many cases the meters, in an electrical installation, have to measure high currents, which is why Carlo Gavazzi offers a comprehensive range of current transformers, compatible with both the main meters and the submeters.

Multifunction meter WM12 - WM14

- DIN-rail mounting
- 208 or 660 VAC, 5 AAC
- 1% RDG (kWh), 0.5% FS (V, A)
- Modbus RS485, 2 relay outputs
- Approvals: CE - cULus

Energy transducer ET112

- DIN-rail mounting
- 1-phase, 120 or 240 VAC, 100 AAC
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, optical port
- Approvals: CE

Energy transducer ET330

- DIN-rail mounting
- 400 to 480 V_{LL} AC, 5 AAC
- Class 0.5S (kWh), 0.2% RDG (V, A)
- RS485 Modbus port, optical port
- Approvals: CE - cULus

Energy transducer ET340

- DIN-rail mounting
- 208 to 400 V_{LL} AC, 65 AAC
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, optical port
- Approvals: CE

Modular power analyzer WM20

- Panel mounting
- 208 or 690 VAC, 5 AAC
- Class 0.5S (kWh), 0.2% RDG (V, A)
- Up to 2 outputs, optical port, Modbus RS485 and Ethernet, BACnet MSTP and IP, Profibus
- Approvals: CE - cULus

Modular power quality analyzer WM30

- Panel mounting
- 208 or 690 VAC, 5 AAC
- Class 0.5S (kWh), 0.2% RDG (V, A)
- Up to 4 outputs, optical port, Modbus RS485 and Ethernet, BACnet MSTP and IP, Ethernet/IP, Profibus
- Approvals: CE - cULus

Modular power quality analyzer WM40

- Panel mounting
- 208 or 690 VAC, 5 AAC
- Class 0.5S (kWh), 0.2% RDG (V, A)
- Up to 6 inputs, up to 8 outputs, optical port, Modbus RS485 and Ethernet, BACnet MSTP and IP, Ethernet/IP, Profibus
- Approvals: CE - cULus

Modular branch circuit analyzer WM50

- Panel mounting
- 208 or 690 VAC, 5 AAC + TCD
- Main unit: Class 0.5S (kWh), 0.2% RDG (V, A). TCD: 0.5% (V,A)
- Up to 96 sub-metering 65 A ch. Up to 6 digital inputs, up to 6 outputs, optical port, Modbus RS485 and Ethernet
- Approvals: CE - cULus

Power analyzer WM15

- Panel mounting
- 208 to 690 VAC, 5 AAC
- Class 1 (kWh), 0.5% RDG (V, A)
- Pulse/alarm output, optional Modbus RS485 port
- Approvals: CE - MID - cULus

Power transducer CPA

- Contactless power analyzers
- 1-phase AC (from 1 to 400 Hz) or DC systems
- RS485 communication port (Modbus)
- Current range:
  [CPA050] 50 AAC / 50 ADC
  [CPA300] 300 AAC / 400 ADC
- Voltage range: 800 VAC / 1000 VDC
- Approvals: CE - cURus

Power transducer CPT

- DIN-rail mounting
- 208 or 690 VAC, 1 or 5 AAC
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 port, relay, open collector, or analogue output
- Approvals: CE - cURus - CSA

Current transformer CTD X - CTD S

- DIN-rail, bus-bar or panel mounting
- Solid or split core current transformers
- Primary: from 1 to 4000 AAC
- Secondary: 5 A (1 A on request)
- Approvals: CE - UR - CSA

Energy analyzers and quick-fit solutions

A comprehensive range of energy meters and analyzers focused on submetering and cost allocation. Carlo Gavazzi provides a solution to industrial, commercial, residential and power generation applications where accuracy, standard compliance (including MID), electrical variable metering, analysis and communication are all important factors. Up to date designs, quality, attention to details, such as installation features and installation time, all mean that Carlo Gavazzi are very competitive in the market. A full retrofit range of meters offering metering and monitoring solutions to meet every need can be found in our product portfolio.

Energy analyzer EM110 - EM111 - EM112

- DIN-rail mounting
- 1-phase, 120 or 240 VAC, 45 or 100 AAC
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, M-bus port, or open collector output
- Approvals: CE - MID - cULus

Energy analyzer EM330 - EM340

- DIN-rail mounting
- 208 to 400 V_{LL} AC, CT input [EM330] or 65 A direct connection [EM340]
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, M-bus port, or open collector output
- Approvals: CE - MID - UL [EM330]

Energy analyzer EM24

- DIN-rail mounting
- 208 to 400 V_{LL} AC, CT or 65 A direct connection
- Class 1 (kWh), 0.5% RDG (V, A)
- 3 digital inputs. Wired or wireless M-bus, RS485 Modbus or Modbus TCP Ethernet port
- 2 digital outputs
- Approvals: CE - cULus - MID

Quick-fit energy meter EM270 and TCD X

- DIN-rail and panel mounting
- 230 or 400 VAC, 160 to 630 AAC measured by up to 2 TCD X triple current transformers
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, static output
- Approvals: CE - cULus

Quick-fit energy meter EM271 and TCD M

- DIN-rail and panel mounting
- 230 or 400 VAC, 60 to 400 AAC measured by up to 2 TCD M split-core triple current sensors
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, static output
- Approvals: CE - cULus

Quick-fit energy transducer ET272 and TCD M

- DIN-rail mounting
- 230 or 400 VAC, 60 to 400 AAC measured by up to 2 TCD M split-core triple current sensors
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port with self-addressing capability
- Approvals: CE - cULus

Quick-fit energy meter EM280 and TCD06B

- DIN-rail and panel mounting
- 230 or 400 VAC, 32 AAC measured by 6-channel TCD06B current transformer block (solid or split core)
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, static output
- Approvals: CE - cULus

Retro-fit energy analyzer EM210AV - MV

- DIN-rail and panel mounting
- 230 or 400 VAC, CT input [AV] or 60 to 800 AAC measured by CTV or ROG current sensors [MV]
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port, static output
- Approvals: CE - cULus

Rogowski current sensors ROG4K

- Cable mounting
- Rogowski split core current sensors for EM210 MV
- Primary: up to 4000 AAC
- Secondary: direct connection to EM210 MV without any external converter
- Approvals: CE - cURus

Current sensor CTV

- Cable mounting
- Miniature split core current sensors
- Primary: from 60 to 800 AAC
- Secondary: 333 mV
- Approvals: CE - cURus

Split-core current transformers CTA

- Cable mounting split-core current transformers
- Primary: from 100 to 600 AAC
- Secondary: 5 A
- Approvals: CE - cURus

DC Energy meter VMU E - VMU X

- DIN-rail mounting
- 400 VDC, 1000 A (20 A direct)
- Class 1 (kWh), 0.5% RDG (V, A)
- RS485 Modbus port or static output
- Approvals: CE

Remote data reading and Data aggregation solutions

The mounting of a power analyzer or an energy meter on a power distribution unit is not enough to effectively manage the whole electrical installation, because the data available on the display would seldom be read and controlled. To be effective, remote reading and reporting of historical data are required. A control room can gather the readings while the data can be analysed and used as a basis for decision-making, all thanks to a full automated system. Carlo Gavazzi can provide solutions for small, medium size and large plants for energy efficiency monitoring, photovoltaic monitoring and datacenter monitoring.

UWP 3.0

- Web-Server, gateway and controller for energy efficiency management applications
- Micro PC with monitoring and control features over multiple buses
- Datalogging, remote communication and data analysis capabilities
- Dashboards and reports
- Management of up to 5000 datapoints for monitoring and control functions

VMU-C EM

- Embedded solution for remote data reading and energy management in Datacenter applications
- Micro PC with Web-Server and Web service capability
- Data and event logging capability
- Integrated data management functions
- Management of up to 1000 datapoints and 11 remote I/O module groups

VMU-M/VMU-P/VMU-O EM

- VMU-M master unit with local datalogging to manage up to 15 VMU 1-DIN units
- VMU-P unit for environmental monitoring
- VMU-O unit with digital inputs/outputs reading

VMU-MC/VMU-OC

- Pulse counter concentrator
- Modular solution to collect from 2 to 11 pulse counter S0 inputs
- Totalizers calculation and Modbus/RTU communication
- VMU-MC: master module with 2 S0 inputs
- VMU-OC: additional module with 3 S0 inputs
- Plug'n'play connection to UWP 3.0 or VMU-C EM

Em²-Server

- Cloud solution for multi-site energy management
- Virtual machine software integrating database and web-server
- Data aggregation from up to 100 sites/installations
- Advanced data management functions
- Management of up to 100 UWP 3.0 or VMU-C EM units

VMU-C PV

- Embedded solution for remote data reading in solar applications
- Micro PC with Web-Server and Web service capability
- Data and event logging capability
- Integrated data management functions
- Management of up to 64 inverters/energy meters and 15 Eos-Array groups

Eos-Array / Eos-Array Lite

- VMU-M master unit with local datalogging to manage up to 15 VMU 1-DIN units
- VMU-S string unit for basic or advanced string control, and string efficiency monitoring
- VMU-P unit for environmental monitoring
- VMU-O unit with digital inputs/outputs reading

Environmental sensors PVS-1

- Solar irradiance sensor for photovoltaic applications
- Crystalline silicon cell
- Compact and rugged IP67 aluminium case
- UV resistant resin incapsulation
- Available with 0-100 mV or 4-20 mA output

Modbus to M-bus converter VMU B

- DIN-rail mounting
- RS485 Modbus master
- For EM23, EM210, EM270, EM271, EM280, WM15
- M-bus output port
- Approvals: CE

M-Bus to Modbus/TCP Gateway SIU-MBM

- M-Bus to Modbus/TCP gateway
- Up to 20 M-Bus devices (SIU-MBM-01, SIU-MBM-02)
  Up to 160 M-Bus devices (SIU-MBM-01-160)
- Up to 32 wireless M-Bus devices (SIU-MBM-02)
- Set-up by free UCS software
- Approvals: CE

Communication interface OPTOPROG

- Bluetooth and USB interface for meters and analysers with optical port
- Compatible with WM20, WM30, WM40, WM50 and ET100, ET300 families
- Compatible with UCS PC software and UCS Mobile Android APP
- Battery powered
- Approvals: CE - FCC - IC - Bluetooth

UWP A / UWP M long range wireless solution

- Comprehensive solution for integrating CG meters and power analysers into public or private wireless monitoring networks
- Long range wireless (ISM 868 MHz, Europe)
- Compatible with CG meters and UWP 3.0
- Universal power supply
- Approvals: CE, LoRaWAN® (UWP A)

Building automation

Carlo Gavazzi's modular concept for home and building automation is based on a patented digital bus, the two-wire Dupline® controlling and monitoring applications for example lighting, roller blinds, heating, air-conditioning and alarms. This innovative system allows considerable savings in energy consumption, increasing comfort and safety. Operations, services and maintenance are simplified, with complete status overview anytime and anywhere. It can also be interfaced to any building automation system via BACnet/IP.

Master units

- Controller: home, building and hotel automation functions. Datalogger for energy values and embedded webserver for energy monitoring
- Two RS485 ports (Modbus)
- Protocols: BACnet, Modbus TCP/IP and RTU, HTTP/S, FTP/S, Data Push, SMTP, NTP, MQTT, Rest API
- Dimensions: 2-DIN modules

Dupline® bus generators

- Connection to UWP 3.0 via internal bus or terminals via the high speed bus
- Up to 7 SH2MCG24 can be connected on the same network, taking into consideration the sum of SH2MCG24 and SH2WBU24N
- Dimensions: 2-DIN modules

Wireless bus generators

- Connection to UWP 3.0 via internal bus or terminals via the high speed bus
- Wireless transmission based on IEE 802.15.4, @ 2.4 GHz
- Maximum slave number: 250
- Operating distance: 700 m open space
- Dimensions: 2-DIN modules

Dali bus generators

- DALI Master for Smart Dupline®
- Integrated DALI power supply
- Up to 7 DALI masters on one Dupline® network
- Up to 64 lighting actuators on one DALI bus
- Tunable white management
- Dimensions: 2-DIN modules

Repeater modules

- Regenerates the Dupline® carrier signal with 300 mA output
- Extends network length
- Isolates the primary and secondary Dupline®
- 230 VAC power supply
- Dimensions: 2-DIN housing

Dimmer modules

- Universal dimmer switch for R, L, C up to 500 W and LED loads
- Automatic load detection for L, R, C loads
- Integrated heat sink for temperature dissipation
- Connection to other cabinet modules via local bus
- Dimensions: 2-DIN modules

Relay modules

- 4 separate output relays
- LED-indications for supply, bus and output status
- Push button for local on/off switching
- Connection to other cabinet modules via local bus
- Dimensions: 2-DIN modules

Digital input modules

- 4 digital inputs NPN, PNP, voltage free
- The 4 inputs can be configured as contact or counter
- LED indication for power supply, Dupline® bus, input activated
- Connection to other cabinet modules via local bus
- Dimensions: 2-DIN modules

Rollerblind modules

- Up/down control of 2 AC/DC rollerblind motors
- LED indication for power supply, Dupline® bus, motor up, motor down
- Push button for local on/off switching
- Connection to other cabinet modules via local bus
- Dimensions: 2-DIN modules

Light switches

- 4 individually programmable push buttons
- 4 individually programmable LEDs for true response
- Bus powered, no external supply required
- B4X-LS4-U: Developed to fit into wall socket and frames from Fuga, NIKO and Bticino
- B5X-LS4-U: Developed to fit into wall socket and frames from Elko, Gira and Jung

PIR detectors + Luxmeter

- Passive infrared detector (PIR)
- Detects movement end presence
- Bus powered, no external supply required
- Walk test: LED indication
- Programmable sensitivity

Temperature displays

- Temperature controller with display
- Shows current room, outdoor and auxiliary temperature
- Bus powered, no external supply required
- SHA: Developed to fit into wall socket from Fuga, NICO and Bticino
- SHE: Developed to fit into wall socket from Elko, Gira and Jung

Building automation

The Dupline® bus provides several advantages to building automation systems. The simplified wiring and high flexibility of the bus-powered sensors and decentralized I/O modules can provide considerable installation cost reductions. Due to the cost-effective design of the smart-house modules, this can be achieved by using materials with a cost comparable to the traditional hardwired solutions.
The issue is to interface Dupline® and Energy Meters to the building automation controllers and building management systems and with the UWP 3.0 BACnet controller, all data points from Dupline® and Energy Meters are now automatically made available as BACnet objects, ready to be used by any building automation controller or BMS from the major suppliers.

Wireless light switches

- 4 individually programmable push buttons
- Blue and red LEDs for wireless field power and battery level
- Battery supplied
- SHA4XWLS4: developed to fit into wall socket and frames from Fuga, NIKO and Bticino
- SHE5XWLS4: developed to fit into wall socket and frames from Elko, Gira and Jung

Wireless relays

- Small sized single relay output for eurobox mounting
- Energy reading
- Range up to 700 m in open air
- Load: 10 A/250 VAC
- Capacitive touch buttons for a plug&play replacement of standard switches (Bticino only)

Wireless energy meter

- Small sized for eurobox mounting
- Values readout: A, V, W, Wdmd, VA, var, PF, kWh
- Range up to 700 m in open air
- Direct connection up to 16 A

Wireless dimmer

- Universal dimmer switch for R, L, C up to 200 W and LED loads
- Automatic load detection for L, R, C loads
- Range up to 700 m in open air
- Capacitive touch buttons for a plug&play replacement of standard switches (Bticino only)

Decentral analogue input/output modules

- Output modules with two 0-10 V outputs
- Input modules for thermistor, resistor and voltage measuring: pt1000, ni1000, 10K3 thermistor input, 1-11K resistor input, 0-10 V input, 4-20 mA
- Small dimensions for decentralized installations

Input module / Pulse counter

- Input module with 4 configurable inputs: S0 class B pulse counter or voltage free input
- Count values are stored in non-volatile memory
- Counts up to 99999999 with rollover
- Bus powered

Wireless input module

- Input module with 4 configurable inputs: S0 class B pulse counter or voltage free input
- Count values are stored in non-volatile memory
- Counts up to 99999999 with rollover
- Range up to 700 m in open air

Decentral relay modules

- Small sized single relay output
- Load: 16 A / 250 VAC
- Withstands 130 A inrush current
- Bus powered

Environmental sensors

- CO_2, temperature and humidity sensors
- CO_2 measuring range: 0 to 2000 ppm
- Temperature measuring range: -20°C to 50 °C
- Humidity measuring range: 0 to 100 %R
- LCD Display and touch function to activate back-light and change signal type

Weather station

- Light, wind, temperature measurement
- Ranges: 0 to 100K lux, 0 to 35 m/s, -40°C to 80°C
- Rain sensor included
- Integrated GPS receiver
- Modbus RS485 protocol

Touch display

- 4.3" and 7" colour displays
- Easy setup of graphic pages and functions with the powerful Wizard software
- BACnet and KNX gateway
- Support viewing from IP cameras
- Ethernet connection

Fire damper

- I/O module to control two fire dampers
- Box ready for wall mounting near dampers
- Four contact inputs, two relay outputs 230 VAC / 5 A
- Power supply: 24 to 230 VAC
- Degree of protection: IP55

Parking guidance system

The Carpark 3 is a complete solution for guiding drivers directly to vacant parking bays. Displays with arrows and digits indicate which direction to drive and how many bays are available. Upon arrival, the vacant parking bays are easily spotted by looking for the bright LED lights. Each bay has an ultrasonic sensor that detects and indicates occupancy resulting in a high precision system. The outdoor solution with wireless sensors and camera-based recognition detects cars in off-street or on-street parking areas. The occupancy information is then sent to the UWP platform via the cloud or to the customer's management system. The wireless communication is based on LoRaWAN® and NB-Iot protocols. Furthermore, the system features smart building functions and products for lighting and ventilation control.

45° Ultrasonic sensor

- Ultrasonic sensor with a 45° detection angle for mounting at the entry to the parking space
- Built-in bright RGB LEDs with 360° indication of space status (multi-colour)
- Base holders for cable tray, ceiling and pipe/tube/conduit mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø116 x 76 mm

Vertical Ultrasonic sensor

- Vertical sensor to be mounted directly above the car
- Built-in bright RGB LEDs with 360° indication of space status (multi-colour)
- Base holders for cable tray, ceiling and pipe/tube/conduit mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø116 x 76 mm

Vertical Ultrasonic counting sensor

- Vertical sensor to be mounted in the driving lane for counting
- Built-in bright RGB LEDs with 360° indication of space status (multi-colour)
- Base holders for cable tray, ceiling and pipe/tube/conduit mounting
- Dupline® 3-wire bus-powered
- Dimensions: Ø116 x 76 mm

LoRa®-based wireless sensor

- Recessed mounting
- Operating frequency: 868 MHz. Propritary LoRa® and LoRaWAN® communication
- Detection principle: magnetic
- Battery powered
- Dimensions: 91 x 96 x 84 mm

Carpark Master generator

- Generator of power and Dupline® bus communication on 3 wires
- Connected as a slave to the Carpark controller UWP 3.0
- Connects up to 90 Carpark sensors via Dupline® 3-wire bus
- Dimensions: 2-DIN housing
- Powered by 24 VDC
- Dimensions: 2-DIN housing

Carpark Controller

- Parking guidance, booking, carpark management, smart building, data logger and energy monitoring in one controller
- Protocols: BACnet, Modbus TCP/IP and RTU, HTTP/S, FTP/S, Data Push, SMTP, NTP, MQTT, Rest API
- Built-in webserver with user interface for carpark management software

Carpark Server

- Carpark server with capability of linking up to 10 UWP 3.0 together in larger systems
- Built-in webserver with user interface for carpark management software
- Data export in excel format
- Powered by 24 VDC
- Dimensions: 2-DIN housing

NB-IoT wireless sensor

- Recessed mounting
- NB-IoT communication protocol. Licensed band: 8/20
- Detection principle: magnetic
- Battery powered
- Dimensions: 91 x 96 x 84 mm

LoRa®-based concentrator

- It collects via Long Range wireless the bay status that is sent by each sensor in real-time.
- Operating distance: 250 metres
- For indoor and outdoor installation
- 230 Vac/24Vdc
- Dimensions: 300 x 175 x 92 mm

Carpark Displays with symbols and digits

- Display with configurable symbols and digits
- Bright RGB LED
- Indoor and outdoor installation
- Visible at a distance of more than 50 m
- 24 VDC powered

Carpark Displays with running text

- Display with configurable symbols and digits and running text
- Bright RGB LED
- Indoor and outdoor installation
- Visible at a distance of more than 50 m
- 24 VDC powered

Videobox

- In converts images into occupancy information
- Up to 8 IP camers can be connected to one videobox
- Utmost respect for the privacy
- 230Vac/110Vac
- Dimensions: 160 x 51 x 127 mm

Fieldbuses - Industrial and DuplineSafe

Dupline® is a field and installation bus that offers unique solutions for a wide range of industrial applications. The system is capable of transmitting multiple digital and analogue signals over several kms, via an ordinary 2-wire cable. Its modular design and simple operating principle enables it to be implemented easily in new or existing applications. Solutions can be engineered by combining products from the wide range of Dupline® modules, including digital and analogue I/O modules, PLC and PC interfaces, HMIs and Modems. All modules in an installation connect to the same 2-wire cable, which is used to exchange data between modules and between a central controller and modules.

Channel generator

- Generates Dupline® carrier signal
- Up to 128 Dupline® channels
- Number of channels selectable
- AC and DC power supply
- Dimensions: 4-DIN housing

Fieldbus gateways

- Gateways for Profibus-DP, Devicenet, Modbus-RTU, Modbus/TCP
- Built-in channel generator
- Split I/O option
- AC and DC power supply
- DIN-rail mounting

Digital input modules - DIN

- Contact and voltage input modules
- Relay and solid state output modules
- Bus-powered types
- AC and DC power supply
- DIN and decentral mounting

Analogue input modules - decentral

- 4 universal analogue inputs or outputs
- Types: 0-20 mA, 4-20 mA or 0-10 V
- Galvanically isolated inputs
- AC and DC power supply
- Dimensions: 4-DIN housing

Repeaters

- Repeater for extending the Dupline® transmission distance
- Optical repeaters allow part of the Dupline® system to run on multimode fibre
- Dimensions: 4/8-DIN housing

Programming and test units

- Programming tool for assigning addresses to Dupline® modules
- Test unit for monitoring and control of Dupline® channels
- Handheld
- Battery / bus powered

DuplineSafe output module

- Configurable safety relay
- Monitors up to 63 safety switches connected via Dupline®
- Force guided contacts
- TUV approved for SIL3
- Dimensions: 8-DIN housing

DuplineSafe input module

- Input module for E-stops and safety pull cords
- Transmits dynamically on two Dupline® channels
- TUV approved for SIL3
- Powered from the bus
- Dimensions: 57 x 36 x 16 mm

DuplineSafe gateways

- Profinet, Profibus-DP and Modbus-RTU gateways for DuplineSafe monitoring
- Can also monitor and control standard Dupline® signals in the same system
- Dimensions: 8-DIN housing

DuplineSafe repeater

- Repeater for extending the DuplineSafe transmission distance
- Isolation between primary and secondary Dupline®
- Can be cascaded
- Dimensions: 8-DIN housing

DuplineSafe optical converter

- Optical repeaters allow part of the DuplineSafe system to run on multimode fibre
- Electrical-to-optical and optical-to-electrical units
- Dimensions: 4-DIN housing

DuplineSafe programmer

- Handheld configuration tool for the DuplineSafe input and output modules
- Allows real-time monitoring of safety signals
- LCD display
- Battery powered

Monitoring relays

Carlo Gavazzi offers a comprehensive range of monitoring controls for the detection of: phase loss, incorrect phase sequence, phase unbalance, over/under current, over/under load, over/under frequency, over/under voltage and overtemperature. Our products include monitors for: current, voltage, power, power factor, 3-phase systems, motor temperature and also current transformers. These monitors can be used in a wide range of applications for protecting motors against improper supply and overload (elevators, compressors, pumps, air conditioning systems, mixing tanks), and also protect properties against the risk of fire caused by loss of insulation or current leaks.

3-phase relays DPA51/DPA52

- Phase sequence
- Phase loss/regenerated voltage detection
- No setup required
- 5 A SPDT relay output

3-phase relays DPA55

- Phase sequence
- Phase loss
- Voltage window
- Incorrect connection proof (208-480 VAC power supply)
- 5 A SPDT relay output

3-phase relays DPB51/DPB52

- Phase sequence
- Phase loss
- 3P systems, 3P+N systems [DPB51]
- Independent overvoltage and undervoltage setting
- Adjustable alarm ON delay
- 5 A SPDT relay output

3-phase relays DPB01

- 3P systems, 3P+N systems, up to 400 Hz [CM44]
- Phase sequence and phase loss
- Independent overvoltage and undervoltage setting
- Adjustable alarm ON delay
- 8 A SPDT relay output

3-phase relays DPB02

- 3P systems, 3P+N systems, up to 400 Hz [CM44]
- Phase sequence and phase loss
- Voltage asymmetry setting
- Adjustable alarm ON delay
- 8 A SPDT relay output

3-phase relays DPC01

- 3P systems, 3P+N systems, up to 400 Hz [CM44]
- Phase sequence and phase loss
- Independent overvoltage and undervoltage setting + asymmetry and tolerance setting
- Separate adjustable alarm ON delays
- 2 x 8 A SPDT relay output

3-phase relays DPC02

- 3P systems, 3P+N systems, up to 400 Hz [CM44]
- Phase sequence and phase loss
- Independent overvoltage and undervoltage setting + overfrequency and underfrequency setting
- Separate adjustable alarm ON delays
- 2 x 8 A SPDT relay output

3-phase relays DPD02

- 3P systems, 3P+N systems, up to 400 Hz
- NFC device configuration and real time reading, through dedicated Android or Windows App
- All 3-phase voltage values can be monitored and combined to each relay
- Delays and hysteresis individually set for each variable
- 2 x 8 A SPDT relay output

Current relays DIA01/DIA53

- 5A AC/DC [DIA01], up to 100 A AC range [DIA53]
- No power supply required [DIA53]
- Overcurrent setting
- 5 A SPDT relay output [DIA01], NPN/PNP transistor output [DIA53]

Current relays DIB01/DIB02

- 0.1 mA to 5 A AC/DC [DIB01], 60 mV/150 mV [DIB02], 2 A to 100 A AC [100A]
- Overcurrent or undervoltage setting
- Adjustable alarm ON delay
- 8 A SPDT relay output

Current transformers A82

- Wall mounting
- Cable hole
- 1-phase AC
- Input current up to 500 A AC
- Output 4 - 20 mA DC, 0 - 20 mA DC, 0 - 10 V DC

Current transformers E83

- DIN-rail mounting
- Cable hole
- 1-phase AC
- Input current up to 50 A AC
- Output 4 - 20 mA DC

Monitoring relays

The possibilities for monitoring relays are countless: verification of machinery operation, detection of broken heater elements, lighting monitoring in critical areas (airport runways, buildings aircraft warning lights, tunnels), monitoring of ventilation fans and in building automation systems. Protection can be provided against people, fire, earth current leakage, or protecting from incorrect mains or cables connections. Also cabling and mounting is eased using different types of housing, double cage terminals, or pass-through connections for current measurement. Setup is always easy and accurate with the front dials and DIP switches.

Voltage relays DUA01/DUB01

- AC/DC TRMS over or undervoltage monitoring
- Range up to 500 VAC or DC
- Adjustable delay and hysterersys
- Programmable latching / inhibit
- 1 x 8 A SPDT relay output

Voltage relays DUA52

- DC battery undervoltage monitoring
- 12 V, 24 V and 48 V battery systems
- Adjustable voltage and hysterersys settings
- 1 x 5 A SPDT relay output

Voltage relays DUA55

- Voltage window relay
- Nominal voltage from 208 to 240 V AC
- Monitoring own supply
- Incorrect connection proof (208-480 V AC power supply)
- 5A SPDT relay output

Voltage relays DUB02/DUB03

- Over and undervoltage monitoring
- Measure own supply 24 V, 115 V, 230 V AC [DUB02], 24-240 V AC/DC [DUB03]
- Adjustable delay on alarm ON or on recovery
- Programmable latch / inhibit function
- 1 x 8 A SPDT output

Current/Voltage relays DIC01/DUC01

- TRMS AC or DC voltage monitoring
- Over + over or over + under or under + under
- Separately adjustable delays, adjustable hysteresis
- Programmable latch / inhibit function
- 2 x 8 A SPDT relay output

Thermistor relays DTA01/02, DTA71/72

- Motor thermistor relays for PTC connection
- Remote or local, automatic or manual alarm reset
- PTC open or short circuit. Information LED for status and troubleshooting
- 1 or 2 relays output

Thermistor relay DTA04

- Motor thermistor relays for PTC connection
- Remote or local, automatic or manual alarm reset
- PTC open or short circuit. Information LED for status and troubleshooting
- 2 x 8 A SPST relay output
- Relay outputs for contactor opening and signalling
- 24 V to 240 V AC/DC power supply voltage

Earth Leakage DEA71/DEB71

- Fixed [DEA01] or Adjustable IΔn threshold [DEB71]
- Warning output @ 60% IΔn
- Trip Output @ 80% IΔn
- Adjustable time delay [DEB71]
- 2 SPDT relay outputs
- Sealable antitampering lid [DEB71]

Core balance transformers CTG

- Zero current transformer for DEA71 and DEB71
- Suitable for 1-phase and 3-phase mains
- Max. Input voltage 750 VAC
- Reduction ratio 1:1000
- Opening from 35 mm to 210 mm

Frequency relays DFB01/DFC01

- Over and underfrequency monitoring
- Rated frequency 50 Hz or 60 Hz
- Adjustable delay on alarm ON or on recovery
- Programmable latch / inhibit function
- 1 x 8 A SPDT output

Power relays DWA01/DWB

- Cosφ or Active power monitoring
- Direct reading up to 5 A, 10 A or through "MI" current transfomers for higher currents
- Adjustable Cosφ or selectable independent upper and lower values
- Adjustable delay ON
- 1 x 8 A SPDT relay output

Pump alternating relays DLA71/DLA73

- For 2 or 3 pumps
- Pump rotation and multiple pumps activation
- Overflow relay output [DLA73]
- 2 x 5A SPST relay output [DLA71 2P] 3 x 5A SPST relay output [DLA71 3P, DLA73]

Timers and Counters

Timers are frequently used in a wide range of applications in automation, such as motor control centres, packaging machinery, HVAC equipment, control panels and process control systems. The Carlo Gavazzi timer portfolio is complete and offers solutions for different mountings (DIN-rail, panel or plug-in), functions (ON and OFF delay, interval, one-shot, recycler, star-delta) and output (SPDT, DPDT, 4PDT relay, or static output).

Delay on operation DAA/PAA

- DIN-rail or plug in housing
- Time range 0.1 s to 100 h
- Universal power supply
- SPDT or DPDT relay output
- Approvals: CE - UL - CSA - RINA

Delay on release DBA/PBA

- DIN-rail or plug in housing
- Time range 0.1 s to 100 h
- Extended power supply
- SPDT relay output
- Approvals: CE - UL - CSA

True delay in release DBB/PBB

- DIN-rail or plug in housing
- Time range 0.1 s to 10 h
- Extended power supply
- SPDT or DPDT relay output
- Approvals: CE - UL - CSA

Star-delta DAC/PAC

- DIN-rail or plug in housing
- Time range 0.1 s to 600 s
- Universal power supply
- SPDT relay output
- Approvals: CE - UL - CSA

Recycler DCB/PCB

- DIN-rail or plug-in housing
- Time range 0.1 s to 100 h
- Extended power supply
- 1x or 2x SPDT relay output
- Approvals: CE - UL - CSA

Multifunction DMB/PMB/DMC/PMC

- DIN-rail or plug-in housing
- 7 functions (0.1 s to 100 h)
- Universal power supply
- 1x, 2x SPDT or DPDT output
- Approvals: CE - UL - CSA

Multifunction FAA/FMB

- Panel or plug-in mounting
- 7 functions (0.02 s to 300 h)
- Universal power supply
- DPDT output
- Approvals: CE - UL - CSA

Multifunction HAA

- Plug-in mounting
- 4 functions (0.1 s to 100 h)
- Universal power supply
- DPDT or 4PDT output
- Approvals: CE - UL - CSA

Mini-E EAS/EBS/ECS

- DIN-rail or panel mounting
- 3 functions (0.5 s to 10 m)
- Extended power supply
- Static output
- Approvals: CE - UL - CSA

Electromechanical counters

- Panel mounting
- Up to 8 digits
- With or without reset
- Max count frequency 10 Hz

Electronic counters

- Panel mounting
- Up to 8 LDC/LED digits
- 10 to 30 VAC power supply or battery
- Manual or electronic reset

Electronic multifunction counters

- Panel mounting
- 2 x 6 LDC digit display
- Programmable as counters, tachometers or timers
- 1 or 2 presets
- Electronic reset

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CAT PO ENG REV.22 02/20