# CARLO GAVAZZI
### Automation Components
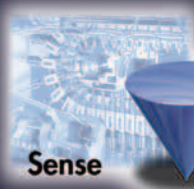
CARLO GAVAZZI

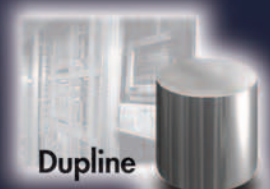# Product Overview

Sense  Switch  Control  Safety  Dupline

## A lifetime of commitment to automation

# CARLO GAVAZZI – A Global Force In

## Offering the Complete Package

CARLO GAVAZZI offers a vast array of high quality products, which provide you the optimum solutions to your various automation tasks and applications. Our comprehensive range of products is shown on the adjacent page, with the respective page number for an overview on the products. For complete data sheets and pricing simply visit www.GavazziOnline.com, click on "Online Datasheets" and enter the part number prefix shown in this brochure. Information is TRULY available at your fingertips. More features of our website can be found on page 22.



## Application and Market Knowledge

Our multitude of products are the result of years of intensive research and development. Our Engineering, Marketing and Sales Departments give assurance that all of our products are designed with the key features which the market requires for demanding applications.



Thanks to revolutionary technology from CARLO GAVAZZI, *TRIPLESHIELD*™ capacitive sensors are protected against disturbances caused by high levels of electrostatic discharge and surges, and also against noise from inverters, mobile phones, wire conducted noise, and contactor noise.

With the addition of our new manufacturing facility dedicated to researching, developing and manufacturing machinery safeguarding products, CARLO GAVAZZI has now expanded into providing safety solutions: Safety Light Curtains, Safety Control Modules, Safety Magnetic Switches, Safety Interlock Switches and Safety Mat Systems.

User friendly Solid State Relays with integrated heatsinks in standard and special versions for loads up to 90 amps. Low Noise types for meeting Emission Standard 50081. Integrated System Monitoring allowing permanent super-vision of critical loads. Analog Full Cycle Control reducing stress of heating elements. Phase Angle Control for switching in accordance to the applied control current.
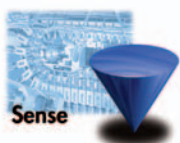
Current, Voltage and Phase Monitoring Relays for Mains Quality Inspection, Phase Sequence Monitoring, Load Guard. Current and Voltage Transformers. Smart Compact Transducers and Windows-Software-based Power and Energy Analyzers.

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# Industrial Automation

Sense    Switch    Control    Safety    Dupline

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# Inductive Proximity Sensors

| | Sensing Distance | Ø 4 mm | M5 | Ø 6.5 mm | M8 | M12 | M18 |
|---|---|---|---|---|---|---|---|
| **NAMUR** | 1 mm | | | EI0601NA | EI0801NA | | |
| | 2 mm | | | | EI0802NA | IA12xxF02U | |
| | 3.5 mm | | | | | | |
| | 4 mm | | | | | IA12xxN04U | |
| | 5 mm | | | | | | IA18xxF05U |
| | 6 mm | | | | | | |
| | 8 mm | | | | | | IA18xxN08U |
| | 10 mm | | | | | | |
| | 15 mm | | | | | | |
| | 40 mm | | | | | | |
| **2 wire DC extended** | 4 mm | | | | | IA12DSF04Dx / IA12ASF04DxM1 | |
| | 8 mm | | | | | IA12DSN08Dx / IA12ASN08DxM1 | IA18DSF08Dx / IA18ASF08DxM1 |
| | 14 mm | | | | | | IA18DSN14Dx / IA18ASN14DxM1 |
| | 15 mm | | | | | | |
| | 22 mm | | | | | | |
| **3 wire DC** | 0.8 mm | EI0401xP | | | | | |
| | 1 mm | | IA05BSF10xx / IA05BSF10xxM5 | IA06BSF10xx / IA06BSF10xxM5 | | | |
| | 1.5 mm | | | | IA08BxF15xx / IA08BxF15xxMx | | |
| | 2 mm | | | IA06BSN20xx / IA06BSN20xxM5 | | EI1202xP / IA12DSF02xO / IA12ASF02xOM1 | |
| | 2.5 mm | | | | IA08BxN25xx / IA08BxN25xxM5 | | |
| | 4 mm | | | | | EI1204xP / IA12DSN04xO / IA12ASN04xOM1 | |
| | 5 mm | | | | | | EI1805xP / IA18DSF05xO / IA18ASF05xOM1 |
| | 6 mm | | | | | | |
| | 8 mm | | | | | | EI1808xP / IA18DSN08xO / IA18ASN08xOM1 |
| | 10 mm | | | | | | |
| | 15 mm | | | | | | |
| | 40 mm | | | | | | |
| **3 wire DC extended** | 2 mm | | | | IA08BSF20xx / IA08BSF20xxM5 | | |
| | 4 mm | | | | IA08BSN40xx / IA08BSN40xxM1 | IA12DSF04xx / IA12ASF04xxM1 | |
| | 8 mm | | | | | IA12DSN08x0 / IA12ASN08x0M1 | IA18DSF08x0 / IA18ASF08x0M1 |
| | 15 mm | | | | | | |
| | 22 mm | | | | | | |

Non flush mount | Flush mount | Flush and non flush

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**Dimension or Type**

| M30 | Flat Pack | Fork Type | Special | Amplifiers |
|-----|-----------|-----------|---------|------------|
| | | DU3.5 | | |
| | | DU5 | | SD110 |
| | | DU6 | | SD210 |
| | | | | SD270 |
| IA30xxF10U | | DU10 | | |
| IA30xxN15U | | | | |
| | | | EI8040 | |

All Inductive Sensors come with a 10 year Warranty

IA30DSF15Dx
IA30SASF15DxM1

IA30DSN22Dx
IA30ASN22DxM1

IC08ANC15xx
IC08ANC15xxM5

ID25CNC20xx
ID25CNC20xxM5

IC17CNC04xx

ID25ANC05xx

| | | DU6E | | |

EI3010xP
IA30DSF10x0
IA30ASF10xOM1

| | | DU10E | | |

EI3015xP
IA30DSN15x0
IA30ASN15xOM1

| | | EI8040xP | | |

NAMUR, transistor, SCR, MOSFET and analog output types. Standard and extended sensing distances from 1 to 40mm. Housing diameters from 4 to 80mm. Choice of cylindrical, limit switch style, rectangular, slotted (U-shaped) and "pancake" style housings. Offered in stainless steel, nickel plated brass or thermoplastic construction. Available with PVC connection cable, nano or micro plug for connection to quick disconnect cables. *All versions come with a standard 10 year warranty!*

IA30DSF15x0
IA30ASF15x0M1

IA30DSN22x0
IA30ASN22x0M1

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# Inductive Proximity Sensors (continued)

| Sensing Distance | M8 | M12 | M18 | M30 | 40x40 mm | Flat Pack |
|---|---|---|---|---|---|---|
| **4 wire DC** | | | | | | |
| 10 mm | | | | | | EI5510xP |
| 15 mm | | | | | | EI5515xP |
| 25 mm | | | | | EIA4025xP | |
| **2 wire AC** | | | | | | |
| 2 mm | | EI1202TB | | | | |
| 4 mm | | EI1204TB | | | | |
| 5 mm | | | EI1805TB | | | |
| 8 mm | | | EI1808TB | | | |
| 10 mm | | | | EI3010TB | | |
| 15 mm | | | | EI3015TB | | |
| **AC/DC** | | | | | | |
| 25 mm | | | | | EIA4025UP | |
| **Analog current output** | | | | | | |
| 0.1 - 1.5 mm | IA08ALC15AG | | | | | |
| 0.1 - 3.0 mm | | IA12ALC03AG | | | | |
| 0.1 - 6.0 mm | | | | | | ID40CNC06AF |
| 0.1 - 6.0 mm | | | IA18ALC06AG | | | |
| 0.5 - 10.0 mm | | | | IA30ALC10AG | | |
| 2 - 5 mm | | | EI1805I020 | | | |
| 3 - 8 mm | | | | EI3008I020 | | |
| **Analog voltage output** | | | | | | |
| 0.3 - 3.0 mm | | IA12ALC03AK | | | | |
| 0.3 - 5.0 mm | | | IA18ALC05AH | | | |
| 0.3 - 5.0 mm | | IA12ASC05AK | | | | |
| 3.5 - 11 mm | | | | IA30ASC11AK | | |

☐ Non flush mount    ☐ Flush mount

# Capacitive Proximity Sensors



TRIPLESHIELD PROTECTION
6 SENSORS IN ONE
TEACH MODE
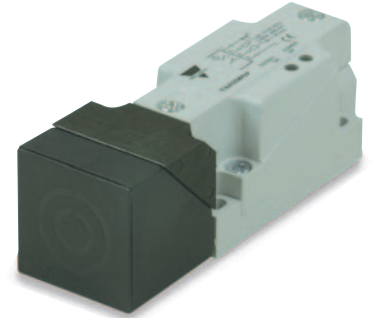
The third generation of the patented, industry leading TRIPLESHIELD™ capacitive sensor series are now microprocessor based and laden with exciting new features. Programming the sensor is also easier than ever. With the new Teach Mode capabilities and push button interface, these sensors can be easily set up and installed. They will automatically detect and adjust themselves for NPN or PNP loads, and flush or non-flush mounting. Add in the ability to program for normally open or normally closed output, and it's like having six sensors in one! Various protection types are built-in right into the sensors, for: dirt, moisture, humidity, short circuit, and reverse polarity. Naturally the sensors include all of the industry leading features that make the TRIPLESHIELD™ family the safest capacitive sensor available, including protection against ESD, RF, transients, and line-conducted noise. See why the TRIPLESHIELD™ continues to be the most innovative capacitive sensor in the market today!

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# Capacitive Proximity Sensors (continued)

| Sensing Distance | Sensing Distance | M18 | Ø 30 mm | M30 | Ø 32 mm | Flat Pack | Amplifiers |
|---|---|---|---|---|---|---|---|
| | | | | Housing Diameter, Dimension or Type | | | |
| **2 wire DC** | 3 mm | | | | | | S194156 |
| | 8 mm | | VR2A VR3A | | VR1A | | SV150 SV160 SV250 SV260 |
| | 15 mm | | VR2B | | VR1B | | |
| | 5 - 17 mm | | VR2 Adjust | | | | |
| **3 wire DC** | 2 - 10 mm | | | | | VC5510 | |
| | 4 - 11 mm | | | | | ACF10xP | |
| **4 wire DC** | 3 - 8 mm | CA18x08N/P | | | | | |
| | 3 - 8 mm | CA18xLx08NA | | | | | |
| | 3 - 12 mm | CA18x12N/P | | | | | |
| | 15 mm | | | EC3015xP | | | |
| | 4 - 15 mm high temperature | | | ECH3010xP | | | |
| | 2 - 16 mm | | | EC3016xP | | | |
| | 4 - 25 mm | | | EC3025xP | | EC5525xP | |
| **AC-supply** | 3 - 8 mm | CA18x08T | | | | | |
| | 3 - 12 mm | CA18x12T | | | | | |
| | 2 - 16 mm | | | EC3016TB | | | |
| | 4 - 25 mm | | | EC3025TB | | | |
| **AC/DC** | 2 - 16 mm | | | CA30CLF16CA | | | |
| | 4 - 25 mm | | | CA30CLN25CA | | | |
| | 4 - 12 mm with timer and relay output | | | | | VC11RT VC12RT | |
| | 4 - 12 mm without timer and relay output | | | | | VC12RN | |
| **Teach Mode** | 0.1 - 12mm 10 - 40VDC | CA18CLC (TEACH MODE) | | | | | |
| | 0.1 - 30mm 10 - 40VDC | | | CA30CLC (TEACH MODE) | | | |
| | 1 - 10mm 10 - 40VDC | | | | | CD46 (TEACH MODE) | |

**For Harsh Environments**

NAMUR, transistor, SCR and relay output types. Sensing distances from 3 to 40mm. Housing diameters from 11 to 40mm. Choice of cylindrical, rectangular and "pancake" style housings. Offered in nickel-plated brass, thermoplastic, polypropylene, PVC or Teflon construction. Available with PVC connection cable or micro plug for connection to M12 disconnect cables.

Additionally, sensors for harsh operating temperatures (-321 to 356°F), as well as versions featuring patented TRIPLESHIELD™ protection for the highest immunity from electrostatic discharge, communication interference and fast transients.

☐ Non flush mount
☐ Flush mount
☐ Flush and non flush

EC5525PPAP-1
Made in Denmark

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# Photoelectric Sensors

| Sensing Distance | | Ø 10 mm | M12 | 32x12x20mm | M14 | 10 x 13.5 x 40 mm 20 x 30 x 10 mm | M18 | Ø 20 mm |
|---|---|---|---|---|---|---|---|---|
| **Diffuse Reflective** | 100 mm | | | | | | PA18CSD01xP PA18CLD01Tx | |
| | 200 mm | | | | | | PA18CSD02xP PA18CLD02Tx | MND02 |
| | 250 mm | | | | | PD40CND25 | | |
| | 100-400 mm | | | | | | EO1804xP PA18ALD04Tx PA18CSD04xP PA18CLD04Tx | |
| | 500 mm | | | PD32CND | | | | |
| | 150-600 mm | | | | | | | |
| | 200-800 mm optional timer (T) | | | | | | | |
| | 1000 mm | | | | | | | |
| **Background Suppression** | 15-80 mm | | | | | PD40CNB08 | | |
| | 50-150 mm | | | | | | | |
| | 120 mm | | | PD32CNB | | | | |
| | 500 mm | | | | | | | |
| **Retro-Reflective** | 3 m | | | | | | ER1830xP, PA18xLR30Tx PA18CSR30xx PA18CLR30Tx | |
| | 10 m | | | | | | | |
| **Polarized Retro-Reflective** | 1.5 m | | | | | PD40CNP15 | | |
| | 2 m | | | | | | EP1820xP, PA18xLP20Tx PA18CSP20xx PA18CLP20Tx | |
| | 2.5 m | | | PD32CNP | | | | |
| | 3 m | | | | | | | |
| | 6 m | | | | | | | |
| **Through-Beam** | 4 m | | | | | PD40CNT40 | | |
| | 5 m | | MHx05 | | | | | MNx05 |
| | 5 m with separate amplifier | MOFx5/5-5/5-8 | MOFx5-M12-2 | | MOFx20-M14-2/ 12-5/12-8 | | | |
| | 6 m | | | PD32CNT | | | | |
| | 10 m | | | | | | PA18CST10xx | |
| | 15 m | | | | | | | |
| | 12 m adjustable | | | | | | | |
| | 15 m with adjustable amplifier | | | | | | | MNFx15 MMFx15 |
| | 20 m adjustable optional timer (T) | | | | | | ET1820xP | |
| | 20 m with separate amplifier | MOFx20/20-5/ 20-8 | MOFx20-M12-2/ 12-5/12-8 | | MOFx20-M14-2/ 12-5/12-8 | | | |
| | 50 m with separate amplifier | MOFx50 | MOFx50-M12-2 | | MOFx50-M14-2 | | | |

## Fiber Optic

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Fiber** | For plastic fibers | | | | | PD40CNX12x | EF1801xP EF1801TB | |
| | For glass fibers | | | | | | | |

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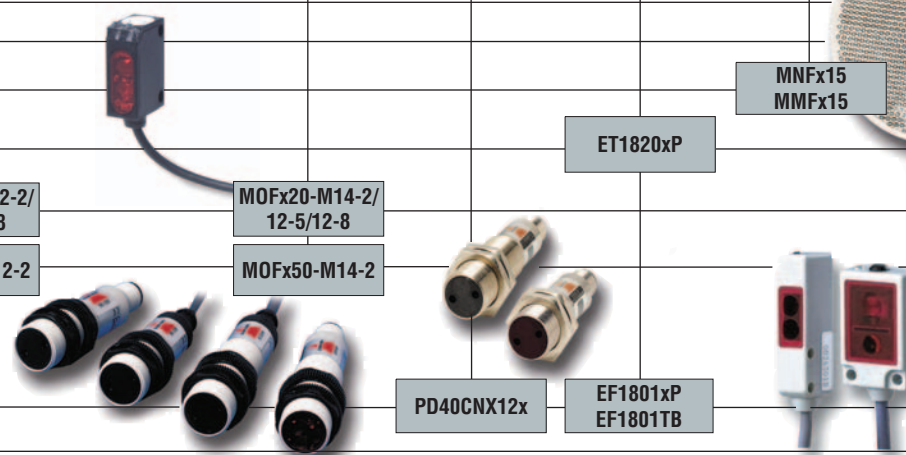
| Dimension or Type | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| M30 | Flat Pack | 13 x 30 x 60 mm | 18 x 36 x 63 mm / 18 x 75 x 36 mm | 18 x 75 x 36 mm | 50 x 50 x 17 mm | 25 x 65 x 81 mm | Special | Amplifiers |

EO3002    ED5502xP

Transistor, SCR and relay output types. Sensing distances from 50mm to 50m. Housing diameters from 11 to 40mm. Choice of cylindrical, rectangular and "pancake" style housings. Available in nickel-plated brass, polycarbonate or Luran construction. Offered with PVC connection cable or micro plug for connection to quick disconnect cables. Diffuse reflective, retro-reflective, polarized retro-reflective and through beam sensing principles. Find out today why CARLO GAVAZZI is the world leader in supplying photoelectric sensors to the car wash industry - *perhaps the harshest of sensing environments.*

ED5506xP

PMD8xx (T)

PC50CND10BA
PC50CND10RP

PA15I
PB15I

PC50CNB50BA

PC50CNR10BA
PC50CNR10RP    PMR10xx (T)

EP5520xP

PA3P
PB3P

PC50CNP06BA
PC50CNP06P    PMP6xx (T)

ET5505xP

S142x
S143x

MPFTR5-4
MPFTR5-M14-4
MPFTR5-D18-4

MPF1xxx
MPF2xxx
MPF3xxx

PA12x    PB12x

PC50CNT20
PC50CNT20R    PMT20xx (T)

S142x
S143x

S142x
S143x

S142x
S143x

TEACH MODE

PD60CNX20x

PD60CNV20x

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# Photoelectric Sensors - Specialized

| Housing Dimensions | | |
|---|---|---|
| **32 x 12 x 20 mm** | **13 x 30 x 60 mm** | **125 x 61 x 26 mm** |

| Special Function | 32 x 12 x 20 mm | 13 x 30 x 60 mm | 125 x 61 x 26 mm |
|---|---|---|---|
| **Miniature with Teach-In** | PD32Cnx | | |
| **Clear Object Detection** | PD32CNG | PD60CNG | |
| **Contrast Sensing** | | PD60CNK | |
| **Color Sensing** | | | PD12 |
| **Laser** | LD32 | | |

TEACH MODE
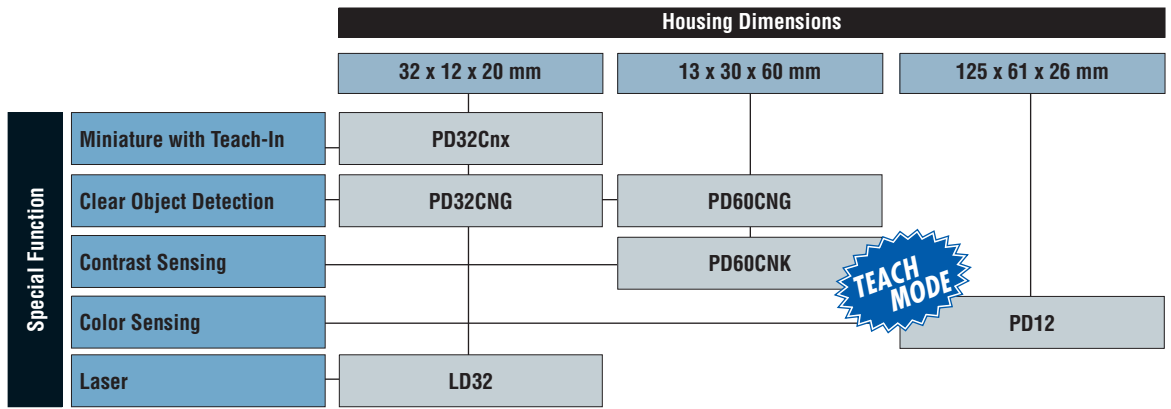
For applications that require specialized sensors, Carlo Gavazzi now offers photoelectric sensors that go beyond the capabilities of standard sensors. Whether it be detecting transparent objects and changes in contrast, to detecting specific colors and even sorting by multiple colors, Carlo Gavazzi now offers you the solution. A complete family of miniature sensors with full-size features is also available, including laser. The sensors are microprocessor based and can be programmed, or 'taught', by the user through a simple push button interface.

# Magnetic Sensors

| | Housing Material | | | |
|---|---|---|---|---|
| **Housing Size** | **Plastic** | **Brass** | **Nickel-Plated Brass** | **Stainless Steel** |
| **Ø6 mm** (Cylindrical) | FMMP | | | |
| **Ø16 mm** | FSLP | | | |
| **M8** | | | | FMM |
| **M10** | | FS.A.2/S3 FS.S.2/S1 | | |
| **M12** | FM.A, FM.C, FMP, and FM.S | FS.A.2/S4 FS.S.2/S4 FM | FSM.A FSM.S.2 | FSQ.A. |
| **M16** | FS.B.2/2MT | FSM.S.2/S2 | | |
| **M18** | FS | | | |
| **28 x 18.5 x 7mm** (Slot) | IM | | | |
| **45 x 37 x 10mm** | ISY | | | |
| **75 x 50.7 x 40mm** | I.A, I.C, and I.S2 | | | |
| **7 x 27 x 11mm** (Rectangular) | MM | | | |
| **8.3 x 37 x 16mm** | M.A, S.B, M.S.1, and MS.A.2 | | | |
| **21.2 x 11.5 x 79mm** | S.A, S.B, S.C, and S.S.2 | | | |
| **24 x 25.5 x 85mm** | SP.B.2 | | | |

Magnetic sensors in a variety of sizes, shapes, and materials, to solve the widest variety of applications. Sensors consist of a reed switch, and a magnet (ordered separately). Sensing distances depend upon the size and strength of the magnet.

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# Ultrasonic Sensors

| | | Thru-Scan | | | Diffuse | | |
|---|---|---|---|---|---|---|---|
| | | **M18** | **M30** | **Pancake** | **M18** | **M30** | **Pancake** |
| **Discrete** | 100 - 600mm | UA18CLS06POM1 | | | UA18CLD06x0 | | |
| | 200 - 1500mm | UA18CLS15POM1 | | | UA18CLD15x0 | | |
| | 200 - 2000mm | | | | | UA30CLD20OM1TI[1] | |
| | 300 - 2500mm | | UA30CLS25POM1 | | | UA30CLD25x0 | |
| | 400 - 4000mm | | | UC80CNS40NO | | | |
| **0-10VDC** | 100 - 600mm | | | | UA18CLD06AK | | |
| | 200 - 1500mm | | | | UA18CLD15AK | | |
| | 300 - 2500mm | | | | | UA30CLD25AK | |
| | 150 - 1500mm | | | | | UA30CLD15FKM7[2] | |
| | 250 - 2000mm | | | | | UA30CLD20FKM7[2] | |
| | 350 - 3500mm | | | | | UA30CLD35FKM7[2] | |
| | 200 - 2000mm | | | | | UA30CLD20AKM1TI[1] | |
| | 300 - 3500mm | | | | | UA30CLD35AKM1TI[1] | |
| **4-20mA** | 100 - 600mm | | | | UA18CLD06AG | | |
| | 200 - 1500mm | | | | UA18CLD15AG | | |
| | 300 - 2500mm | | | | | UA30CLD25AG | |
| | 150 - 1500mm | | | | | UA30CLD15GKM7[2] | |
| | 250 - 2000mm | | | | | UA30CLD20FGM7[2] | |
| | 350 - 3500mm | | | | | UA30CLD35FGM7[2] | |
| | 200 - 2000mm | | | | | UA30CLD20AGM1TI[1] | |
| **Separate Amplifier** | 800 - 8000mm | | | | | | UC80CND80FSM1 UCEU80-1 |

Ultrasonic sensors in popular M18 & M30 housings. Diffuse sensing mode for detecting presence or measuring levels. Thru-scan mode for detecting presence of object anywhere in a broad range. 4-20 mA and 0-10 VDC analog outputs, along with NPN/PNP discrete outputs. Push button programmable, and software programmable versions for easier setup and greater control of sensor functions. An extended range unit with external amplifier is available.

Notes:  1 - Push button programmable
        2 - Windows software programmable

# Optical Level Sensors

| Optical | | | **³/₈"** | **Amplifiers** |
|---|---|---|---|---|
| | DC | Media contact Plastic housing | VP0xEx VP0xEPx | SV190* |
| | DC | Media contact Metal housing | VPAxMxA VPBxMxA | SV190* |
| | AC | Media contact Plastic housing | VP0xxTB | |

*for NPN-types only
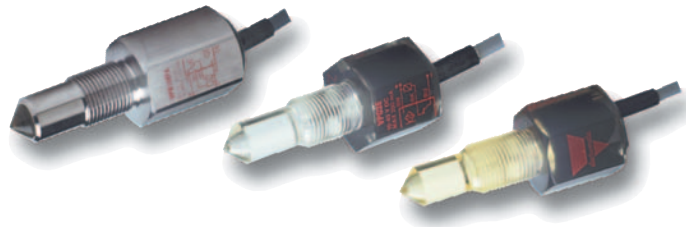
Optical level sensors in polysulfone, stainless steel, and nickel-plated brass housings, with polysulfone, glass, or polyamide tips. Cable or quick disconnect plug versions available. Used for point level detection of non-coating liquids.

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# Conductive Level Sensors

| Sensing Distance | Housing Diameter, Dimension or Type | | | | | | |
|---|---|---|---|---|---|---|---|
| (Supply and output through amplifier) | ½" | Ø 18 mm | Ø 22 mm | 1" | Ø 32 mm | 1 ½" | Amplifier |
| 2 Electrodes, hanging probe | | | A94-10 | | | | S194156 H494166 |
| 1 Electrode, hanging probe | | VH1 | | | VH2 | | |
| 2 Electrodes 0.4 m | | | | VS2 | | | SV11x SV12x  SV21x SV22x  S195xxx S196xxx  S1961xx H496166  S197256 ELACR  ELCCxx ELDCxx |
| 1 Electrode 0.5 m | VPC105 VPP105 | | | VPC110 VPP110 | | | |
| 2 Electrodes 0.5 m | VPC205 VPP205 | | | VPC210 VPP210 | | | |
| 3 Electrodes 0.5 m | | | | VPC310 VPP310 | | | |
| 1 Electrode 1 m | | | | | | VNxx1 VTx1 | |
| 2 Electrodes 1 m | | | | | | VNxx2 VTx2 | |
| 3 Electrodes 1 m | | | | | | VNxx3 VTx3 | |
| 4 Electrodes 1 m | | | | | | VNxx4 VTx4 | |

Conductive level sensing systems consist of a controller/relay and a probe with multiple electrodes. Used for maximum/minimum control, in filling or emptying applications. Can be used with virtually any type of conductive liquid. Various housing materials are available, including nylon, PVC, Teflon, and stainless steel, to cover many applications.
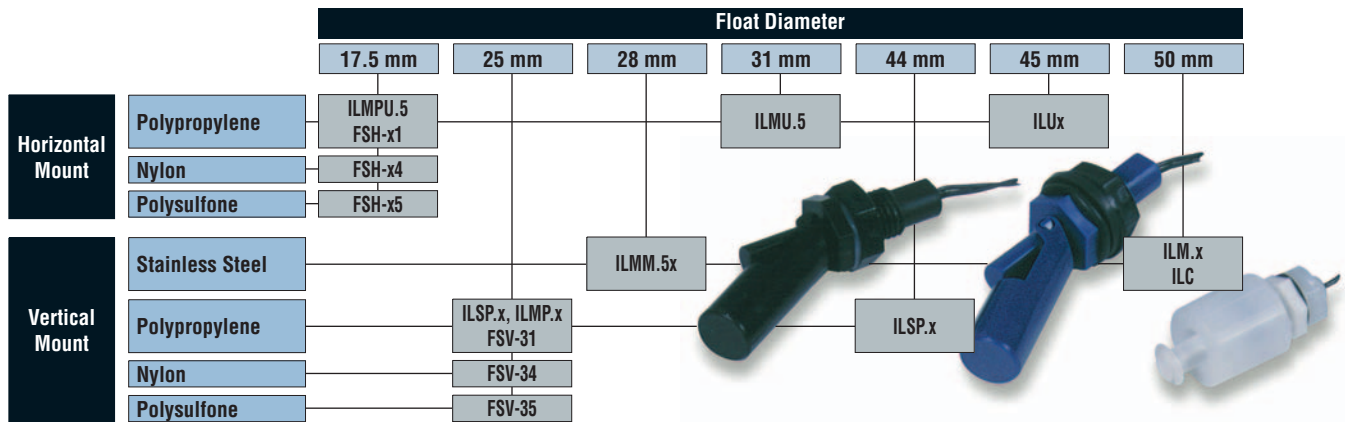
# Float Level Sensors

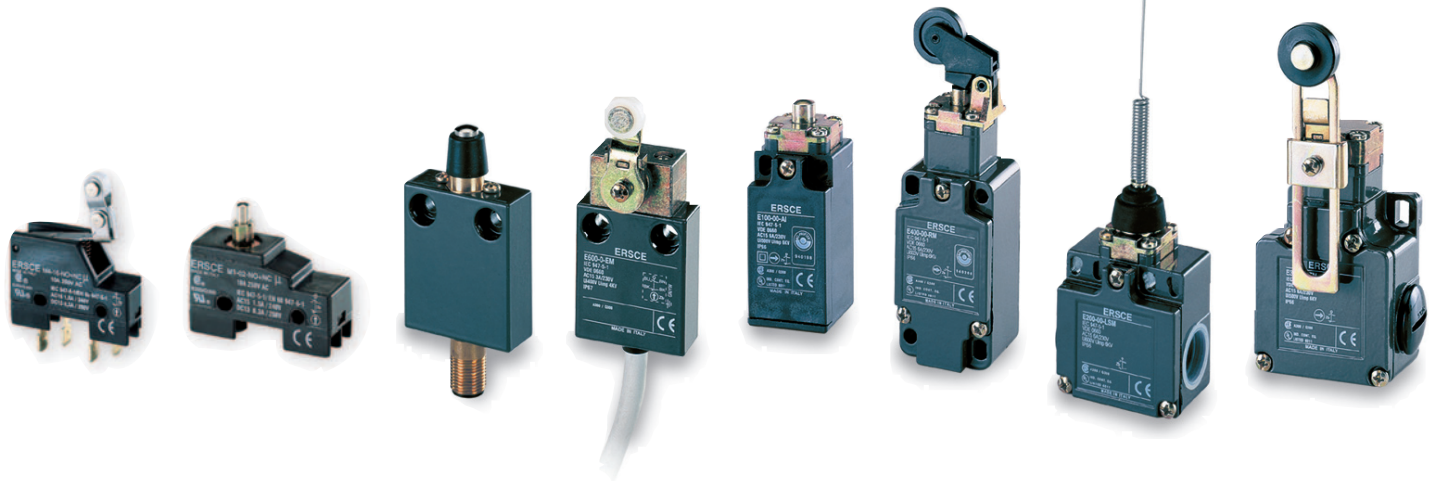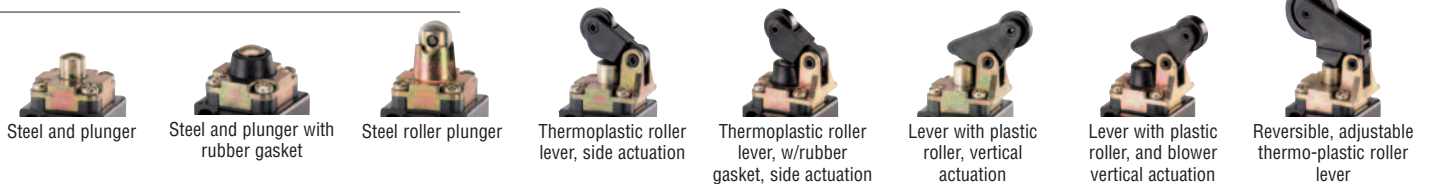| | | Float Diameter | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 17.5 mm | 25 mm | 28 mm | 31 mm | 44 mm | 45 mm | 50 mm |
| Horizontal Mount | Polypropylene | ILMPU.5 FSH-x1 | | | ILMU.5 | | ILUx | |
| | Nylon | FSH-x4 | | | | | | |
| | Polysulfone | FSH-x5 | | | | | | |
| Vertical Mount | Stainless Steel | | | ILMM.5x | | | | ILM.x ILC |
| | Polypropylene | | ILSP.x, ILMP.x FSV-31 | | | ILSP.x | | |
| | Nylon | | FSV-34 | | | | | |
| | Polysulfone | | FSV-35 | | | | | |

Mechanical float switches consisting of reed switch and enclosed magnet. Choice of housing materials include polypropylene, nylon, polysulfone and stainless steel, to work with almost any liquid type. Vertical or horizontal mount types, to allow access to any application. All of the float switches are pre-wired, to allow for quick and easy installation.
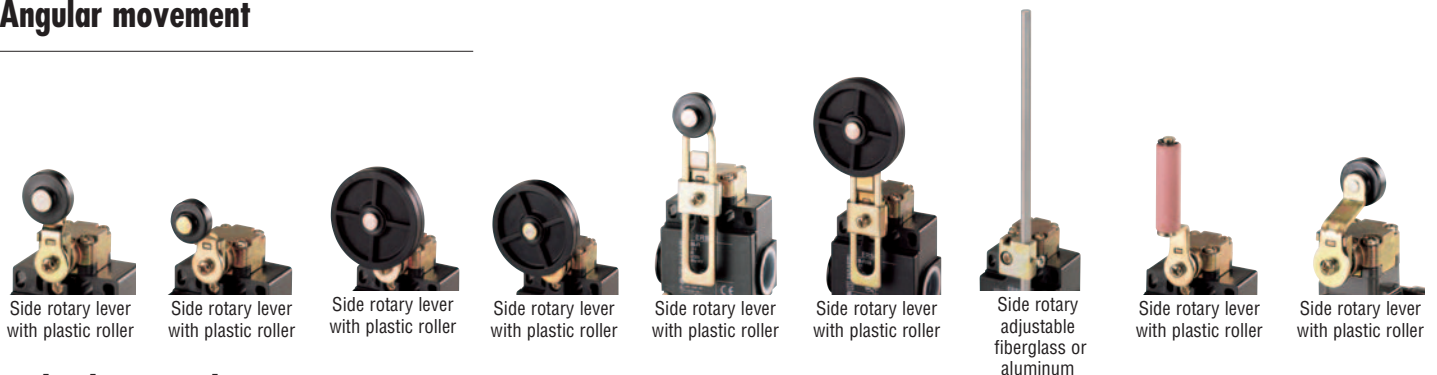
12

# Limit Switches

| Housing Type | | Housing Size H X W X D (mm) | | | | | |
|---|---|---|---|---|---|---|---|
| | | 48.5 x 30 x 16 mm | 47.5 x 40 x 16 mm | 58 x 30.5 x 33 mm | 50 x 50 x 33 mm | 62 x 52 x 35.5 mm | 74 x 40 x 36 mm |
| Standard Switches | Metal | | | E102…M | E202…M | E302…M | E402…M |
| | Plastic | | | E102…I | E202…I | | E402…I |
| Pre-Wired Switches | Metal | E700…M | E600…M | | | | |
| | Plastic | E700…I | | | | | |

## Direct movement

Steel and plunger

Steel and plunger with rubber gasket

Steel roller plunger

Thermoplastic roller lever, side actuation

Thermoplastic roller lever, w/rubber gasket, side actuation

Lever with plastic roller, vertical actuation

Lever with plastic roller, and blower vertical actuation

Reversible, adjustable thermo-plastic roller lever

## Angular movement

Side rotary lever with plastic roller

Side rotary lever with plastic roller

Side rotary lever with plastic roller

Side rotary lever with plastic roller

Side rotary lever with plastic roller

Side rotary lever with plastic roller

Side rotary adjustable fiberglass or aluminum

Side rotary lever with plastic roller

Side rotary lever with plastic roller

## Multi-directional movement

Flexible rod

Flexible rod with plastic terminal

Flexible rod with metal terminal
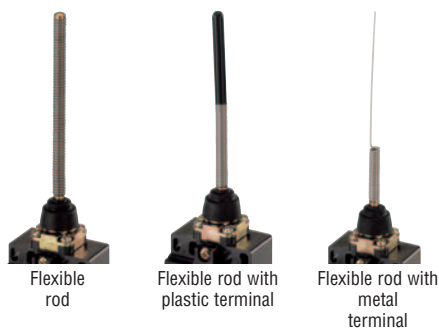
High quality limit switches are provided in the most popular industrial sizes, shapes, contact configurations, as well as an innovative series of encapsulated limit switches, available with a connection cable or M12 plug. Their rugged metal housings and economical plastic housings offer one to three 1/2" NPT conduit entryways. Output contacts are offered in snap action, slow action, or overlapping configurations. Various types of push button/roller actuators, roller levers, and multi-directional levers are available. These switches are ideal for manufacturers of material handling, packaging, conveying, and machine tool equipment.

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# Solid State Relays

Current Rating chart

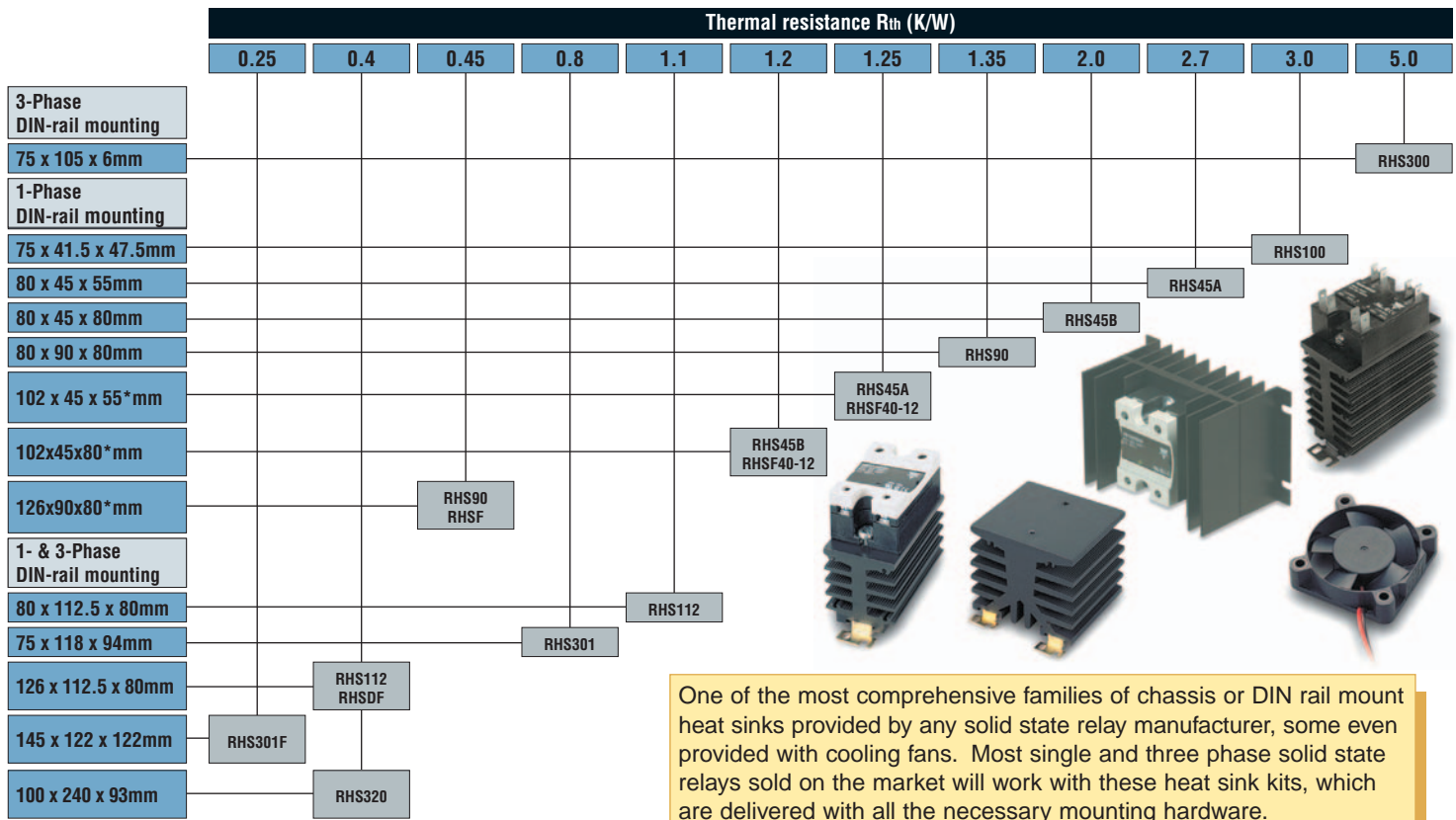| | 3 A | 5 A | 10 A | 25 A | 30 A | 40 A | 50 A | 63 A | 75 A | 90 A | 110 A | 125 A |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Zero Switching** | | | | | | | | | | | | |
| 1-phase PCB | RAP | | | | | | | | | | | |
| 1-phase PCB | | RP1A | | | | | | | | | | |
| 1-phase Industrial Housing | | | RS1A | | | | | | | | | |
| 1-phase Industrial Housing | | | | RM1A | | | | | | | | |
| 1-phase Industrial Housing VDE | | | | | RAM | | | | | | | |
| 1-phase Industrial Housing | | | | | RA | | | | | | | |
| 2-phase Industrial Housing | | | RA2A | | | | | | | | | |
| 3-phase Industrial Housing | | | | | RZ3A | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | | RJ1A | *(70A without forced convection air flow)* | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | | RN1A | | | | | | | | |
| 2-phase / 2-pole DIN-rail | | | | RN2A | | | | | | | | |
| 3-phase / 2-pole DIN-rail | | | RN3A-RJ2A | | | | | | | | | |
| 3-phase / 3-pole DIN-rail | RJ3A | *(25A without forced convection air flow)* | | | | | | | | | | |
| **Instant-On Switching** | | | | | | | | | | | | |
| 1-phase PCB | | RP1B | | | | | | | | | | |
| 1-phase Industrial Housing | | | | | RM1B | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | RJ1B | *(70A without forced convection air flow)* | | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | | | RN1B | | | | | | | |
| **System Monitoring** | | | | | | | | | | | | |
| 1-phase Industrial Housing | | | | | RA..S | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | RN1S | | | | | | | | | |
| **Analog Switching** | | | | | | | | | | | | |
| 1-phase Industrial Housing | | | | | RMIE | | | | | | | |
| 1-phase / 1-pole DIN rail | | | RN1F | | | | | | | | | |
| 2-phase / 2-pole DIN-rail | | | RN2F | | | | | | | | | |
| **Peak Switching** | | | | | | | | | | | | |
| 1-phase Industrial Housing | | | | | RMIC | | | | | | | |
| **Low-Noise** | | | | | | | | | | | | |
| 1-phase Industrial Housing | | | RA..L | | | | | | | | | |
| 1-phase / 1-pole DIN-rail | | | RN1L | | | | | | | | | |
| **DC Switching** | | | | | | | | | | | | |
| 1-phase PCB | RP530 | | | | | | | | | | | |
| 1-phase Industrial Housing | RD | | | | | | | | | | | |

Solid State Relays AC and DC for PCB mounting. Single and three phase Solid State Relays for panel mounting. 5 switching types, up to 110 A. SOLITRON ready-to-mount Solid State Relays with integrated heatsink, one and two pole output. SOLITRON Mini – compact 22.5 mm Solid State Relays for DIN-rail mounting with integrated heatsink for applications up to 30 A.
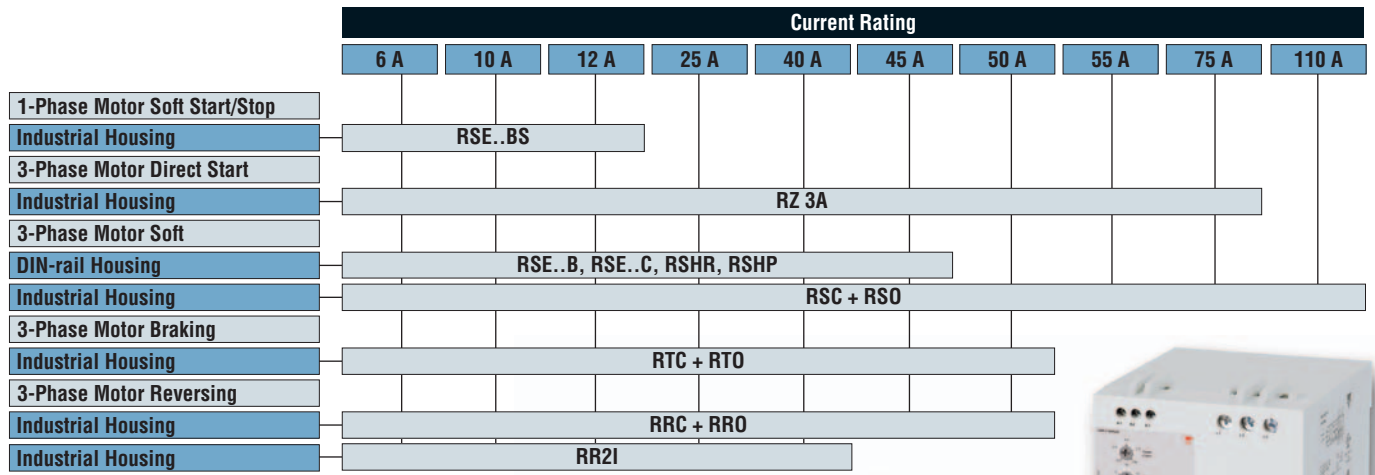
Up to 30 Amps    Up to 50 Amps    Up to 90 Amps

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# Heatsinks for Solid State Relays

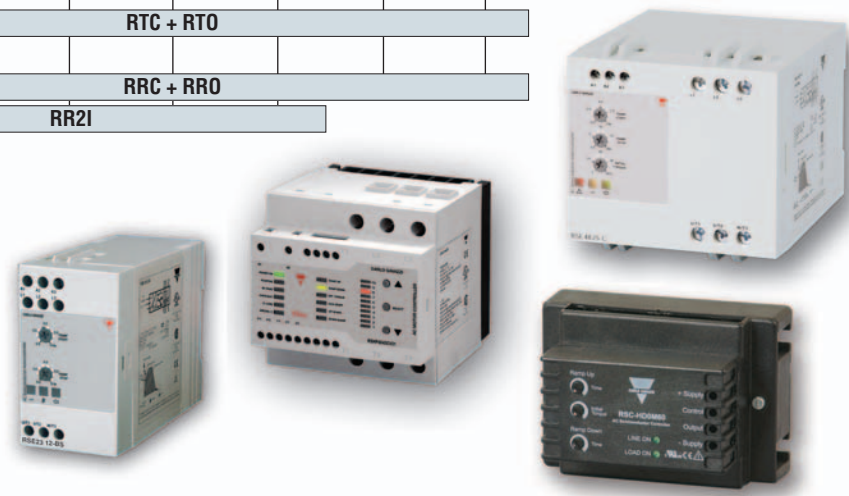| | Thermal resistance Rth (K/W) | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0.25 | 0.4 | 0.45 | 0.8 | 1.1 | 1.2 | 1.25 | 1.35 | 2.0 | 2.7 | 3.0 | 5.0 |
| **3-Phase DIN-rail mounting** | | | | | | | | | | | | |
| 75 x 105 x 6mm | | | | | | | | | | | | RHS300 |
| **1-Phase DIN-rail mounting** | | | | | | | | | | | | |
| 75 x 41.5 x 47.5mm | | | | | | | | | | | RHS100 | |
| 80 x 45 x 55mm | | | | | | | | | | RHS45A | | |
| 80 x 45 x 80mm | | | | | | | | | RHS45B | | | |
| 80 x 90 x 80mm | | | | | | | | RHS90 | | | | |
| 102 x 45 x 55*mm | | | | | | | RHS45A RHSF40-12 | | | | | |
| 102x45x80*mm | | | | | | RHS45B RHSF40-12 | | | | | | |
| 126x90x80*mm | | | RHS90 RHSF | | | | | | | | | |
| **1- & 3-Phase DIN-rail mounting** | | | | | | | | | | | | |
| 80 x 112.5 x 80mm | | | | | RHS112 | | | | | | | |
| 75 x 118 x 94mm | | | | RHS301 | | | | | | | | |
| 126 x 112.5 x 80mm | | RHS112 RHSDF | | | | | | | | | | |
| 145 x 122 x 122mm | RHS301F | | | | | | | | | | | |
| 100 x 240 x 93mm | | RHS320 | | | | | | | | | | |

One of the most comprehensive families of chassis or DIN rail mount heat sinks provided by any solid state relay manufacturer, some even provided with cooling fans. Most single and three phase solid state relays sold on the market will work with these heat sink kits, which are delivered with all the necessary mounting hardware.
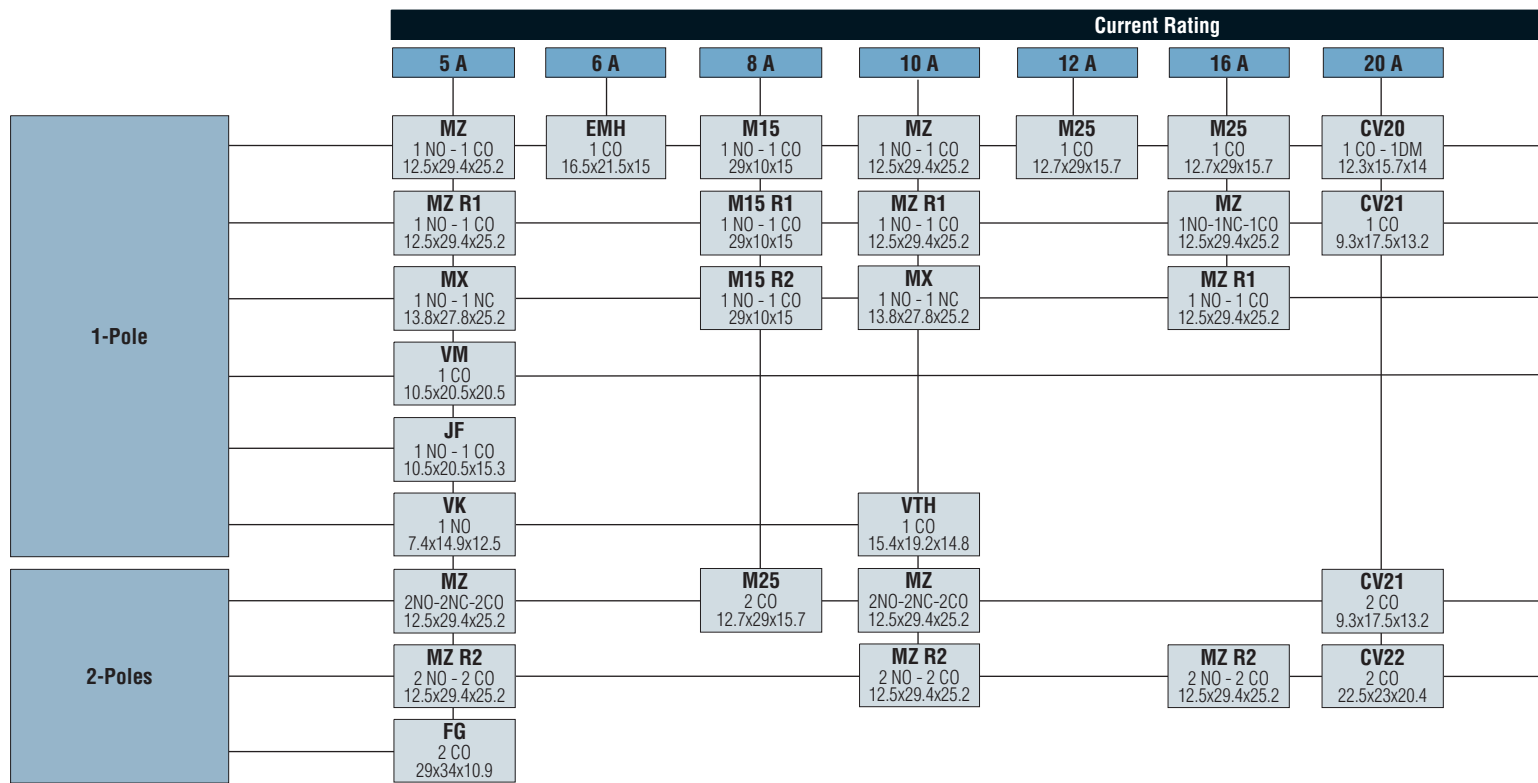
# Motor Controllers

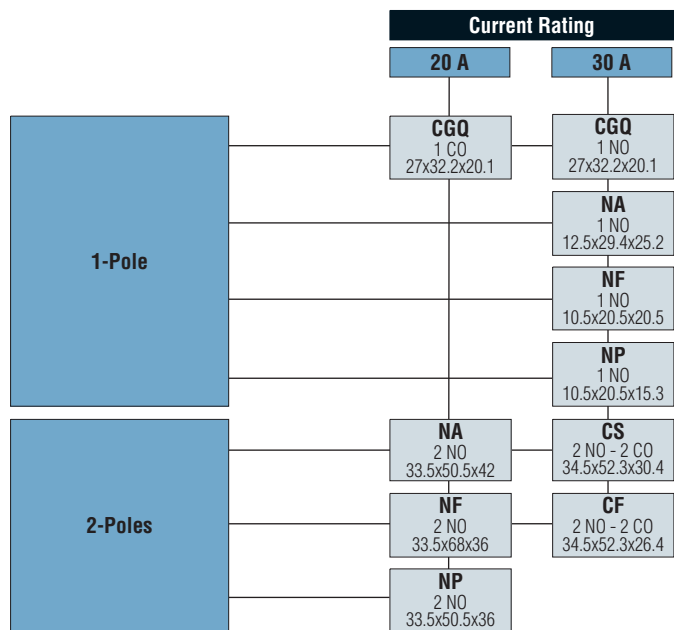| | Current Rating | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 6 A | 10 A | 12 A | 25 A | 40 A | 45 A | 50 A | 55 A | 75 A | 110 A |
| **1-Phase Motor Soft Start/Stop** | | | | | | | | | | |
| **Industrial Housing** | RSE..BS | | | | | | | | | |
| **3-Phase Motor Direct Start** | | | | | | | | | | |
| **Industrial Housing** | | RZ 3A | | | | | | | | |
| **3-Phase Motor Soft** | | | | | | | | | | |
| **DIN-rail Housing** | | RSE..B, RSE..C, RSHR, RSHP | | | | | | | | |
| **Industrial Housing** | | RSC + RSO | | | | | | | | |
| **3-Phase Motor Braking** | | | | | | | | | | |
| **Industrial Housing** | | RTC + RTO | | | | | | | | |
| **3-Phase Motor Reversing** | | | | | | | | | | |
| **Industrial Housing** | | RRC + RRO | | | | | | | | |
| **Industrial Housing** | RR2I | | | | | | | | | |

Motor controller for soft starting/stopping (up to 40Hp), adjustable starting torque and ramping times via knobs on the front face. Newer programmable soft starter that allows for customization of the ramp curve to benefit the loads of pumps, fans, conveyors with kick-start and high torque adjustments. Diagnostics onboard for phase loss, wrong sequence, overheating detection and PTC input for motor protection. Forward/reversing relays with built in interlock (up to 3Hp). Dynamic braking units (injects up to 60ADC)
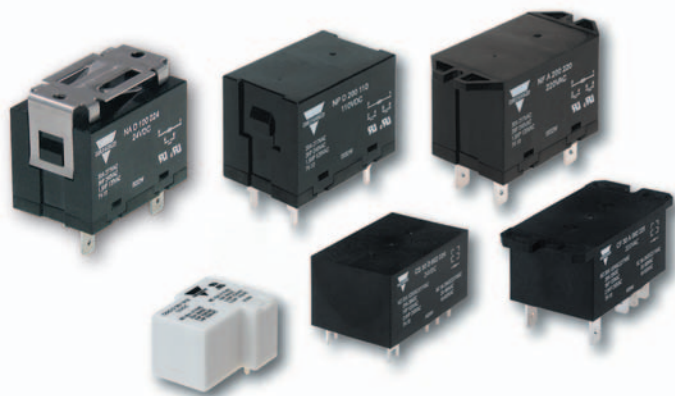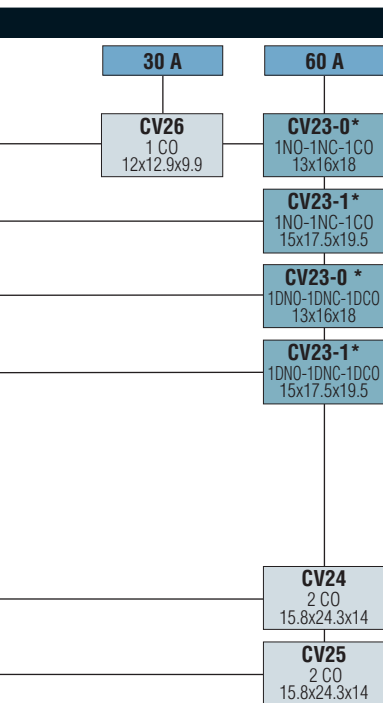
15

# Electromechanical PCB Relays

| | Current Rating | | | | | | |
|---|---|---|---|---|---|---|---|
| | 5 A | 6 A | 8 A | 10 A | 12 A | 16 A | 20 A |
| **1-Pole** | MZ<br>1 NO - 1 CO<br>12.5x29.4x25.2 | EMH<br>1 CO<br>16.5x21.5x15 | M15<br>1 NO - 1 CO<br>29x10x15 | MZ<br>1 NO - 1 CO<br>12.5x29.4x25.2 | M25<br>1 CO<br>12.7x29x15.7 | M25<br>1 CO<br>12.7x29x15.7 | CV20<br>1 CO - 1DM<br>12.3x15.7x14 |
| | MZ R1<br>1 NO - 1 CO<br>12.5x29.4x25.2 | | M15 R1<br>1 NO - 1 CO<br>29x10x15 | MZ R1<br>1 NO - 1 CO<br>12.5x29.4x25.2 | | MZ<br>1NO-1NC-1CO<br>12.5x29.4x25.2 | CV21<br>1 CO<br>9.3x17.5x13.2 |
| | MX<br>1 NO - 1 NC<br>13.8x27.8x25.2 | | M15 R2<br>1 NO - 1 CO<br>29x10x15 | MX<br>1 NO - 1 NC<br>13.8x27.8x25.2 | | MZ R1<br>1 NO - 1 CO<br>12.5x29.4x25.2 | |
| | VM<br>1 CO<br>10.5x20.5x20.5 | | | | | | |
| | JF<br>1 NO - 1 CO<br>10.5x20.5x15.3 | | | | | | |
| | VK<br>1 NO<br>7.4x14.9x12.5 | | | VTH<br>1 CO<br>15.4x19.2x14.8 | | | |
| **2-Poles** | MZ<br>2NO-2NC-2CO<br>12.5x29.4x25.2 | | M25<br>2 CO<br>12.7x29x15.7 | MZ<br>2NO-2NC-2CO<br>12.5x29.4x25.2 | | | CV21<br>2 CO<br>9.3x17.5x13.2 |
| | MZ R2<br>2 NO - 2 CO<br>12.5x29.4x25.2 | | | MZ R2<br>2 NO - 2 CO<br>12.5x29.4x25.2 | | MZ R2<br>2 NO - 2 CO<br>12.5x29.4x25.2 | CV22<br>2 CO<br>22.5x23x20.4 |
| | FG<br>2 CO<br>29x34x10.9 | | | | | | |

# Electromechanical Power Relays

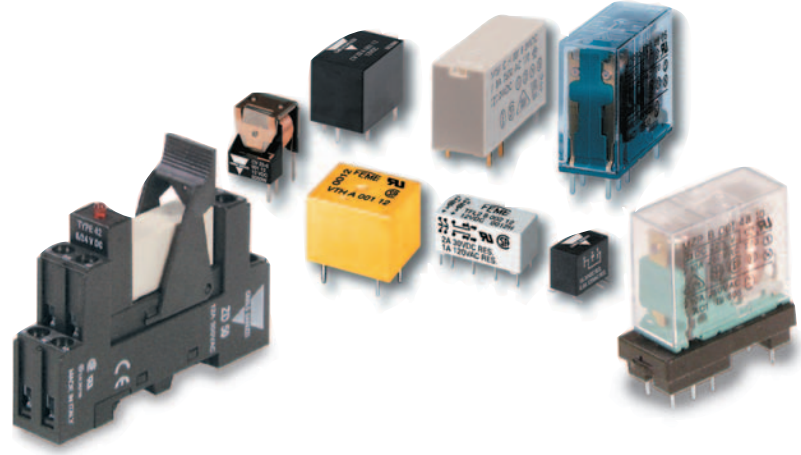| | Current Rating | |
|---|---|---|
| | 20 A | 30 A |
| **1-Pole** | CGQ<br>1 CO<br>27x32.2x20.1 | CGQ<br>1 NO<br>27x32.2x20.1 |
| | | NA<br>1 NO<br>12.5x29.4x25.2 |
| | | NF<br>1 NO<br>10.5x20.5x20.5 |
| | | NP<br>1 NO<br>10.5x20.5x15.3 |
| **2-Poles** | NA<br>2 NO<br>33.5x50.5x42 | CS<br>2 NO - 2 CO<br>34.5x52.3x30.4 |
| | NF<br>2 NO<br>33.5x68x36 | CF<br>2 NO - 2 CO<br>34.5x52.3x26.4 |
| | NP<br>2 NO<br>33.5x50.5x36 | |

Relays with 1 or 2 poles, from 20 A up to 30 A, AC and DC coils, standard and high insulation between coil/contacts, PCB and fast-on terminals.
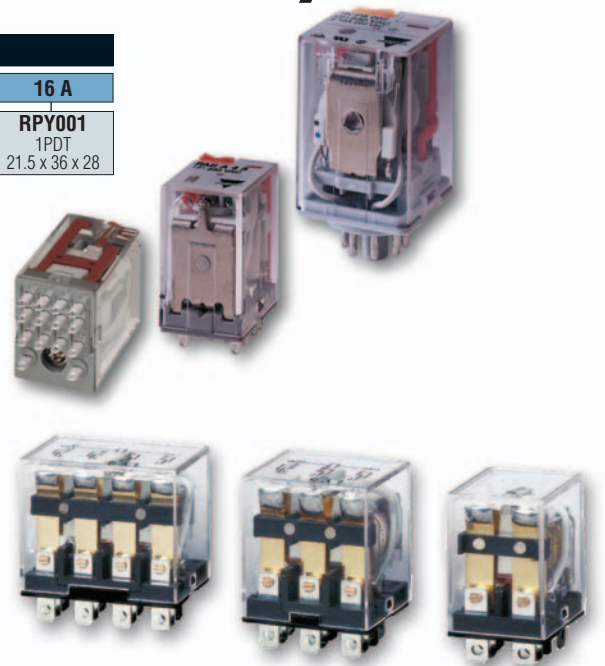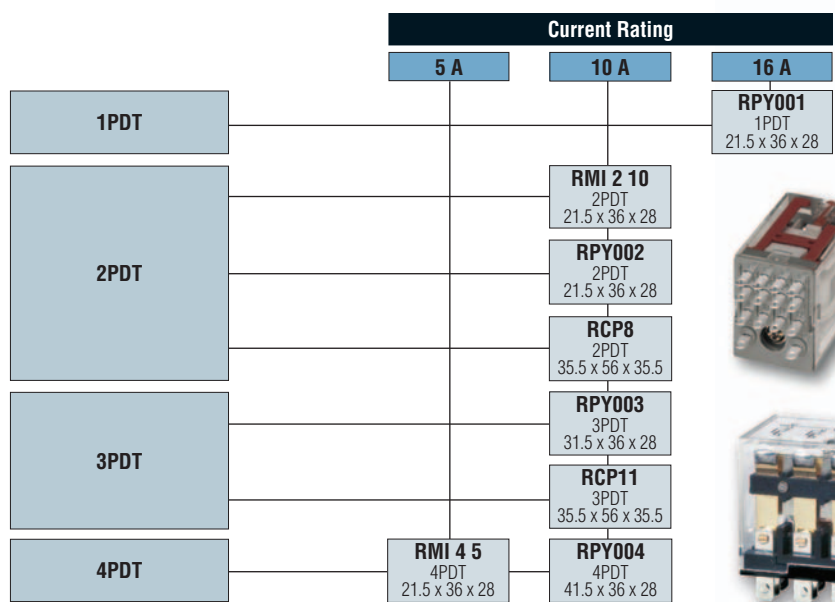
16

| 30 A | 60 A |
|---|---|
| **CV26**<br>1 CO<br>12x12.9x9.9 | **CV23-0***<br>1NO-1NC-1CO<br>13x16x18 |
| | **CV23-1***<br>1NO-1NC-1CO<br>15x17.5x19.5 |
| | **CV23-0** *<br>1DNO-1DNC-1DCO<br>13x16x18 |
| | **CV23-1***<br>1DNO-1DNC-1DCO<br>15x17.5x19.5 |
| | **CV24**<br>2 CO<br>15.8x24.3x14 |
| | **CV25**<br>2 CO<br>15.8x24.3x14 |

This relay family consists of three main relay groups:
- **Signal Relays** – from 1 contact up to 4 contacts, from 1 A up to 6 A, DC coils only.
- **General Purpose** – from 1 contact up to 2 contacts, from 5 A up to 16 A, AC/DC coils and bistable, 4 KV/8 mm between coils/contacts.
- **Automotive Relays** – from 1 contact up to 2 contacts, single contact from 10 A up to 60 A, double make contact from 2 x 5 A up to 2 x 40 A, DC coils only.

*The current range is from 10 A to 60 A. According to the contact type.

# Industrial Electromechanical Relays

| | Current Rating | | |
|---|---|---|---|
| | **5 A** | **10 A** | **16 A** |
| **1PDT** | | | **RPY001**<br>1PDT<br>21.5 x 36 x 28 |
| **2PDT** | | **RMI 2 10**<br>2PDT<br>21.5 x 36 x 28 | |
| | | **RPY002**<br>2PDT<br>21.5 x 36 x 28 | |
| | | **RCP8**<br>2PDT<br>35.5 x 56 x 35.5 | |
| **3PDT** | | **RPY003**<br>3PDT<br>31.5 x 36 x 28 | |
| | | **RCP11**<br>3PDT<br>35.5 x 56 x 35.5 | |
| **4PDT** | **RMI 4 5**<br>4PDT<br>21.5 x 36 x 28 | **RPY004**<br>4PDT<br>41.5 x 36 x 28 | |

The industrial relays are available with four 5 amp changeover contacts, two, three or four 10 amp changeover contacts and one 16 amp changeover contact. They are manufactured with various external connections: soldering and PCB terminals, multi pin socketed type. Available with LEDs and push to test buttons and the most common AC or DC coil voltages.

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# Contactors and Overloads

| Width Size | Thermal Overload | Nema Size | Contactors (HP @ 480V: 5, 7.5, 10, 20, 25, 30, 40, 50, 60, 75 HP) |
|---|---|---|---|
| 44mm | CGT-22 | 00 – 0 | CGC-9, CGC-12, CGC-18, CGC-22 |
| 68mm | CGT-40 | 1 | CGC-32, CGC-40 |
| 92mm | CGT-85 | 2 – 3 | CGC-50, CGC-65, CGC-75, CGC-85 |
| 100mm | CGT-125 | – | CGC-100, CGC-125 |
| 120mm | CGT-150 | 4 | CGC-150 |
| 138mm | CGT-220 | – | CGC-180, CGC-220 |
| 163mm | CGT-400 | 5 | CGC-300, CGC-400 |
| 285mm | CGT-800 | 6 | CGC-600, CGC-800 |



# Mini Contactors

| Width Size | Thermal Overload | Terminal Type | Auxiliary Contacts 1NO or 1NC (HP @ 480V: 5 HP, 7.5 HP, 10 HP) |
|---|---|---|---|
| 45mm | CGT-12M | SCREW | CGMS-6, CGMS-9, CGMS-12, CGMS-16 |
| | | FAST-ON | CGMF-6, CGMF-9, CGMF-12, CGMF-16 |
| | | CAGE CLAMP | CGMC-6, CGMC-96, CGMC-12, CGMC-16 |
| | | SOLDER PIN | CGMP-6, CGMP-9, CGMP-12, CGMP-16 |
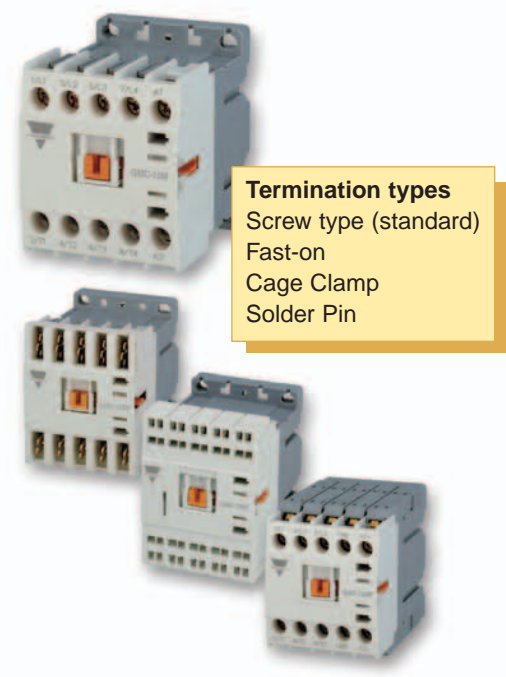


**Termination types**
Screw type (standard)
Fast-on
Cage Clamp
Solder Pin

18

| 2NO & 2NC | | | | | | |
|---|---|---|---|---|---|---|

| 100 HP | 125 HP | 150 HP | 200 HP | 300 HP | 400 HP | 600 HP |
|---|---|---|---|---|---|---|

## 19 RATING CLASSES IN ONLY 8 DIFFERENT SIZES

Simple slide out cassette for easy

coil replacement for 100A - 800A versions

Full line of mini contactors (up to 16A) with optional terminal styles including screw, fast-on, cage clamp and solder pin. Standard contactors (up to 800A) in only 8 different frame sizes. Easy slide out cassette for coil changes (100A and higher). Thermal overloads and interlock kits available to build starters and reversing units. Enclosed starters also available with and without buttons. Unique electronic and digital motor protection relays for detecting overload conditions as well as phase loss, reversal protection, current imbalance, stalled motor and locked motor detection with alarm and trip output contacts and optional ground fault protection (100mA through 2.5A).

Interlocks Kits for Reversing Contactors

Auxiliary Contacts in 1, 2 & 4 Poles

Enclosed Starters

Digital Motor Protection Relays

Electronic Motor Protection Relays

Carlo Gavazzi GMS Series of Manual Motor Starters provide complete ranges up to 100A

**NEW**

19

**Gross Automation (877) 268-3700 · www.carlogavazzisales.com · sales@grossautomation.com**

# Pushbuttons, Switches and Pilot Devices

| | 22mm Plastic Ring Rear Mount | | 22mm Metal Ring Rear Mount | | 30mm Metal Ring Front Mount | |
|---|---|---|---|---|---|---|
| **Through-hole Diameter** | Non-Illuminated | Illuminated | Non-Illuminated | Illuminated | Non-Illuminated | Illuminated |
| **Flush Push Button** | IPR | IPRL | PR | PRL | 30/PR | 30/PRL* |
| **Extended Push Button** | IPS | IPSL | PS | PSL | 30/PS | 30/PSL |
| **Push-Pull Mushroom** *with 35mm PB Head* | IPF | IPFL | PF | PFL | 30/PF | PFL |
| **Momentary Mushroom** *with 35mm PB Head* | | | | | | |
| **Momentary Mushroom** *with 60mm PB Head* | | | | | | |
| **Turn to Release Mushroom** *with 40mm PB Head* | | | | | | |
| **Turn to Release Mushroom** *with 35mm PB Head* | | | | | | |
| **Mushroom with Key Release** *with 35mm PB Head* | | | | | | |
| **Mushroom Turn to Release** *with Safety Snap Lock 35mm PB Head* | | | | | | |
| **Signal** | | IS2 to IS6 | | S2 to S6 | | 30/S2 to 30/S6 |
| **Short Handle Selector** | ISN | ISL | SN | SL | 30/SN1 | 30SL |
| **Long Handle Selector** | ISNL | | SNL | | 30/SNL1 | |
| **Key Selector** | ISNC | | SC | | 30/SC1 | |

## ALSO AVAILABLE

- 22 and 30mm two and four position joysticks (TM and M Series)
- 22mm double or triple headed operators (IP Series)
- Single button and multi-button complete control stations (SC Series)
- Empty boxes with holes (SD, SM, SV Series)
- Pedal switches (PS and PC Series)
- 22mm metal version with rear screw mounting *available on request* (P/V Series)
- 22mm square bezel plastic with rear ring mounting *available on request* (QP Series)

*Also available with guard

New Ersce brand Pushbuttons, Switches and Pilot Devices are available in 22 and 30mm diameter mounting sizes. A modular design comprised of operators (pushbuttons, E-stops, selectors, key locks), indicators, contact blocks & lamp sockets are all interchangeable, with the 22 and 30mm operators using the same contact blocks and lamp sockets. Up to four (or 6 on special request) independent contacts on one operator are possible with a combination of single and double, NO and NC contact blocks. Full range of extended and flush pushbuttons, 35-60mm E-stops and selectors, which are available in six colors and in illuminated versions. Other operators, enclosures and control stations are also offered.

# Cam Switches and Rotary Disconnects

| | | Current Rating | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | **12A** | **16A** | **20A** | **25A** | **32A** | **40A** | **50A** | **63A** | **80A** | **100A** |
| **Cam Switches** | Rear Mount | CN…R.. | | | | | | | | | |
| | Base Mount | CN…B.. | | | | | | | | | |
| | 22mm Mount | CN…G.. | | | | | | | | | |
| **Disconnect Switches** | 2 Pole Rear Mount | KNZ…R2 | | | | | | | | | |
| | 2 Pole Base Mount | KNZ…B2 | | | | | | | | | |
| | 2 Pole 22mm Mount | KNZ…G2 | | | | | | | | | |
| | 3 Pole Rear Mount | KNZ…G3 | | | | | | | | | |
| | 3 Pole Base Mount | KNZ…B3 | | | | | | | | | |
| | 3 Pole 22mm Mount | KNZ…G3 | | | | | | | | | |
| | 4 Pole Rear Mount | KNZ…R4 | | | | | | | | | |
| | 4 Pole Base Mount | KNZ…B4 | | | | | | | | | |
| | 4 Pole 22mm Mount | KNZ…G4 | | | | | | | | | |
| **Disconnect Switches with Auxiliary Contacts and Poles** | 2 Pole Rear Mount | XNA…2R | | | | | | | | | |
| | 2 Pole Base Mount | XNA…2B | | | | | | | | | |
| | 2 Pole 22mm Mount | XNA…2G | | | | | | | | | |
| | 3 Pole Rear Mount | XNA…3R | | | | | | | | | |
| | 3 Pole Base Mount | XNA…3B | | | | | | | | | |
| | 3 Pole 22mm Mount | XNA…3G | | | | | | | | | |
| | 4 Pole Rear Mount | XNA…4R | | | | | | | | | |
| | 4 Pole Base Mount | XNA…4B | | | | | | | | | |
| | 4 Pole 22mm Mount | XNA…4G | | | | | | | | | |
| **Disconnect Switches with Auxiliary Contacts, Poles and Fuses** | 2 Pole Rear Mount | XNF…2R | | | | | | | | | |
| | 2 Pole Base Mount | XNF…2B | | | | | | | | | |
| | 2 Pole 22mm Mount | XNF…2G | | | | | | | | | |
| | 3 Pole Rear Mount | XNF…3R | | | | | | | | | |
| | 3 Pole Base Mount | XNF…3B | | | | | | | | | |
| | 3 Pole 22mm Mount | XNF…3G | | | | | | | | | |
| | 4 Pole Rear Mount | XNF…4R | | | | | | | | | |
| | 4 Pole Base Mount | XNF…4B | | | | | | | | | |
| | 4 Pole 22mm Mount | XNF…4G | | | | | | | | | |



Cam switches for up to 32A, positive opening double break contacts. Change over, motor control, ammeter, voltage, reversing starter, or just about any kind of switch imaginable is available (or can be made).

Rotary disconnects for up to 100A with horsepower ratings. Auxiliary contacts and additional "snap-on" poles are available. They are also available with built-in fuses.

Both the cam switches and rotary disconnects are available for base mounting, rear door mounting and 22mm hole mounting. Full series of knobs and plates available in locking and non-locking styles in black-gray and red-yellow color combinations and 48x48 and 67x67 mm sizes.
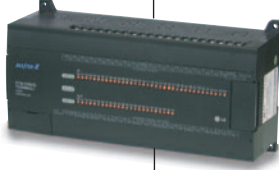
21

# Counters, Hour Meters and Tachometers

| Model | Counter | Hour Meter | Tachometer | Input | Output(s) | Supply | Size (in mm) | Display |
|---|---|---|---|---|---|---|---|---|
| | | | | | | **Specifications** | | |
| A103 | Yes | Yes | Yes | Contact, Transistor, Encoder, AC Voltage | 1 SSR | Internal Battery or 120/220 VAC | 36 x 72 | 8 Digit LCD |
| C342 | Yes | Yes | Yes | NPN, PNP, Contact | 1 Transistor | Internal Battery or 12-24 VDC | 24 x 48 | 6 Digit LED or 8 Digit LCD |
| C346 | Yes | No | No | NPN, PNP, Contact | 1 Relay and 1 Transistor | 120 VAC, 220 VAC, or 12-24 VDC | 48 x 48 | 6 Digit LED or 6 Digit LCD |
| C628 | Yes | No | Yes | NPN, PNP, or Contact | 1 Relay and 1 Transistor | 90-264 AC, 20-50 V AC/DC | 48 x 96 | 5 Digit LED |
| EHM | No | Yes | No | Contact | None | 9-85 VDC | 53 mm or 24 x 36 | 6 Digit LCD |
| V4545 | Yes | No | No | NPN, PNP, Contact | 1 Relay and 1 Transistor | 90-264 VAC | 48 x 48 | Dual 4 Digit LED |
| 7990 | Yes | Yes | Yes | NPN, TTL, AC Voltage, Contact | None | Internal Battery | 36 x 72 | 8 Digit LCD |

Full line of digital counters with LED or LCD displays. Inputs include dry contact, AC voltage, and NPN or PNP transistor. Outputs include relay and transistor. Versions with AC or DC external power supply or internal lithium battery. Hour meters and tachometers are also available.

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# PLCs

| PLC Description | | |
|---|---|---|
| **PLC (RS232 + RS485 ports)** | **PLC (2 x RS232 + RS485)** | **Expansion Module** |

| | PLC (RS232 + RS485 ports) | PLC (2 x RS232 + RS485) | Expansion Module |
|---|---|---|---|
| **10 I/O (6 Inputs / 4 Outputs)** | K7M-DR10UE | | DR10A |
| **14 I/O (8 Inputs / 6 Outputs)** | K10S1-K14P1-DRS | | |
| **20 I/O (12 Inputs / 8 Outputs)** | | K7M-DR20U / KTM-DRT20U | DR20A |
| **30 I/O (18 Inputs / 12 Outputs)** | | K7M-DR30U / K7M-DRT30U | |
| **40 I/O (24 Inputs / 16 Outputs)** | | K7M-DR40U / K7M-DRT40U | |
| **60 I/O (36 Inputs / 24 Outputs)** | | K7M-DR60U / K7M-DRT60U | |
| **3 Analogue (2 Inputs/1 Outputs)** | | | G7F-ADHB |
| **4 Analogue Inputs** | | | G7F-AD2B |
| **4 Analogue Outputs (current)** | | | G7F-DA2IA |
| **4 Analogue Outputs (voltage)** | | | G7F-DA2V |
| **4 RTD Inputs** | | | G7F-RD2A |
| **DeviceNet Interface** | | | G7L-DBEA |
| **Profibus Interface** | | | G7L-PBEA |
| **LG Fieldbus Interface** | | | G7L-FUEA |

> Base I/O from 10-60 which can be expanded to 120 I/O. Analogue, RTD, fieldbus and RTC expansion modules. PLC has an extensive instruction set and large programme storage capability combined with fast scan times. 2 built-in high-speed counters and powerful communications capabilities.

> Add the Universal Windows K-SOFTWARE, *FREE* with purchase of CPU, and you'll have one of the most powerful and inexpensive families of PLCs on the market!

# Operator Interfaces

> KGL-WIN programming software can be downloaded FREE of charge from www.GavazziOnline.com.

| | 5.7" Monochrome Touch Screen 320 x 240 Resolution | 5.5" Colour Touch Screen 320 x 240 Resolution | 7.5" Colour Touch Screen 640 x 480 Resolution | 10.2" Colour Touch Screen 640 x 480 Resolution | 12.1" Colour Touch Screen 800 x 600 Resolution |
|---|---|---|---|---|---|
| **24 VDC Supply** | PMU-300BT | PMU-330TT | PMU-530TTS | PMU-730TTS/DC | PMU-830TT/DC |
| **85-264 VAC Supply** | | | | PMU-730TTS | PMU-830TT |

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# Timers

| Housing | Delay on Operate | Interval | Delay on Release | Recycler (Symmetrical) | Recycler (Asymmetrical) |
|---|---|---|---|---|---|
| **D-Series** DIN-rail | DAA01, DMB01 | DMB01 | DMB01, DBB01, DBB02 | DMB01 | DCB01 |
| **Mini-D-Series** DIN-rail | DAA51, DMB51 | DMB51 | DMB51, DBB51, DBA52 | DMB51 | DCB51 |
| **P-Series** Plug-in | PAA01, PMB01 | PMB01 | PMB01, PBB01, PBB02 | PMB01 | PCB01 |
| **S-Series** Plug-in | S111, S1221 | SC210, SC215, S112, S1221 | S1221 | S1321, S1331, S1341, S1342 | |
| **Scan Timer** Plug-in | A101, A108, A201, A208, A109 | B101, B108, B201, B208, A109 | B121, B128 | C101, C208, C111, C218 | |
| **48 x 48** Plug-in | B866, B856, B506 | B866, B856, B506 | B866, B856, B506 | B866, B856, B506 | |
| **E-Series** DIN-rail | | EBD | | | |
| **Mini-E-Series** DIN-rail | EAS | EBS | | | |

8 and 11 pin plug-in time delay relays, as well as DIN rail mount types. Each multi-voltage timer offers various timing functions and ranges, which minimizes inventory and maximizes functionality.
The PC programmable type offers great flexibility for creating special functions. Digital timers with LCD or LED Display.
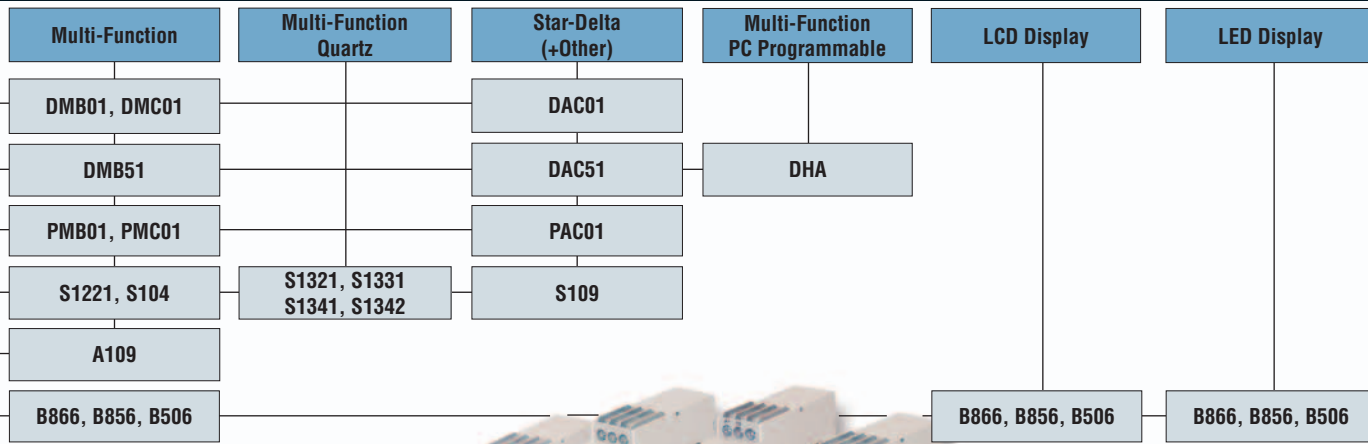
# Monitoring Controls

| Housing | Current DC and 1-phase AC | Current 3-phase AC | Voltage DC and 1-phase AC | Voltage 3-phase AC | Phase Sequence/Loss |
|---|---|---|---|---|---|
| **D-Series** DIN-rail | DIA01, DIB01, DIB02, DIC01, DUA01 | DIB02, DIC01, DUA01 | DIC01, DUA01, DUB01, DUB02, DUC01 | DPA01, DPA02, DPB01, DPC01 | |
| **Mini-D-Series** DIN-rail | DIA53, DIB71 | DIA53, DIB71 | DUA52, DPB71 | DPA53, DPB71 | DPA51, DPB71 |
| **Mini-E-Series** Current Transformers | EIS, E82 | | | | |
| **P-Series** Plug-in | PIA01, PIB01, PIB02, PIC01, PUA01 | PIB02, PIC01, PUA01 | PIC01, PUA01, PUB01, PUB02, PUC01 | PPB01, PPC01 | PPA01, PPA02 |
| **S-Series** Plug-in | | | | | |
| **Accessories** | | | | | |
| **Current Transformers** | A82, MI, TADK2 TAD2/3/4/6/8/12, TACO 110, TACO 200 | A74, MP | | | |
| **Split Core Transformers** | SCT | | | | |
| **Shunts** | DER | | | | |

Single phase monitoring relays for AC/DC current, AC/DC voltage, AC frequency and temperature. Three phase controls for monitoring phase loss, phase sequence, phase angle and phase asymmetry.  Available in both 11 pin plug-in and DIN rail mount housings. Most monitors feature adjustable set point(s), time delay(s), hysteresis and latch functions, as well as separate output for under or over set point conditions.

Current Transformers are available with analog output  (up to 500AAC), adjustable set point with transistor output (up to 100AAC), as well as 5AAC secondary output (up to thousands of amps). DC shunts and transducers are also offered.

SCT Series split-core CTs from 100 to 6,000 A

| Multi-Function | Multi-Function Quartz | Star-Delta (+Other) | Multi-Function PC Programmable | LCD Display | LED Display |
|---|---|---|---|---|---|
| DMB01, DMC01 | | DAC01 | | | |
| DMB51 | | DAC51 | DHA | | |
| PMB01, PMC01 | | PAC01 | | | |
| S1221, S104 | S1321, S1331 S1341, S1342 | S109 | | | |
| A109 | | | | | |
| B866, B856, B506 | | | | B866, B856, B506 | B866, B856, B506 |

**DMB51 Series Universal Timer**
• Up to 100 hours
• 7 Functions
• Multi-voltage

| Phase Asymmetry | Frequency | Load Guard | Power | Tachometer | Temperature |
|---|---|---|---|---|---|
| DPB02, DPC, DPB 71 | DFB, DFC, DPC 02 | DWA01, DWB01 | DWB | | DTA 01/02 |
| PPB02, PPC01 | PFB01 | PWA01, PWB01 | PWB | | PTA 01/02 |
| | | | | SM155 | |
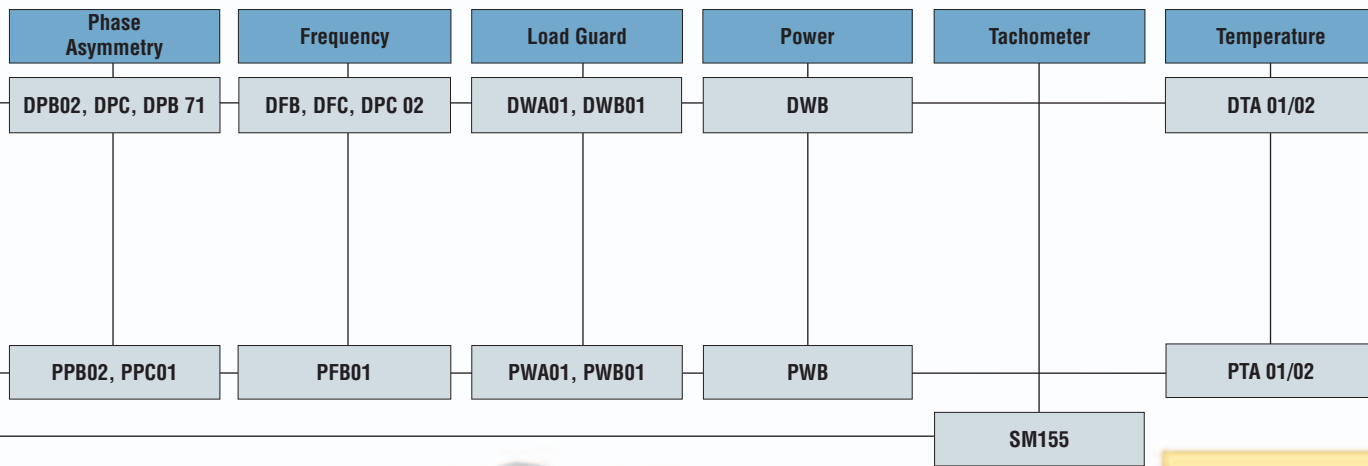
DIA53 Series self-powered transistor output current monitor, up to 100A.

DPA53 Series 3-Phase monitor for phase loss, sequence too under-voltage

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# Digital Panel Meters

Base Unit = **BU-**
Input card = **IC-**

| | VDC 600 VDC | VAC 600 VAC | ADC 5A Max. | AAC 5A Max. | AC/DC 10A Max. | Hz 200 - 2K Max. |
|---|---|---|---|---|---|---|
| **EDM35 Modular Panel Meter** 0/1/2 digital outputs Analog/Excitation Output 0/1/2 digital outputs | EDM 35 Series BU – 5100711 IC – 5100530 | EDM 35 Series BU – 5100711 IC – 5100531 | EDM 35 Series BU – 5100711 IC – 5100532 | EDM 35 Series BU – 5100711 IC – 5100533 | EDM 35 Series BU – 5100711 IC – 5100534 | EDM 35 Series BU – 5100711 IC – 5100541 |
| | Low Measurements up to 20mA and 20V AC/DC | High Measurements up to 5A and 500V AC/DC | Temperature TC: J, K, S, T, E and PT100, 200, 500, 1000 RTDs | Resistance up to 20K Ohms | | |
| **UDM35 Modular Panel Meter** 48 x 96 mm, 3.5-DGT Analog/RS232/485 output 0/1/2/4 digital outputs | UDM 35 Series BU – BD35 IC – BQLSX | UDM 35 Series BU – BD35 IC – BQLSX | UDM 35 Series BU – BD35 IC – BQLSX | UDM 35 Series BU – BD35 IC – BQLSX | | |
| **UDM40 Modular Panel Meter** 48 x 96 mm, 4-DGT Analog/RS232/485 output 0/1/2/4 digital outputs | UDM 40 Series BU – BD40 IC – BQLSX | UDM 40 Series BU – BD40 IC – BQLSX | UDM 40 Series BU – BD40 IC – BQLSX | UDM 40 Series BU – BD40 IC – BQLSX | | |
| **USC Signal Conditioner** DIN mounted, no display Analog/RS232/485 output 0/1/2/4 digital outputs | USC Series BU – BDXX IC – BQLSX | USC Series BU – BDXX IC – BQLSX | USC Series BU – BDXX IC – BQLSX | USC Series BU – BDXX IC – BQLSX | | |

*Modular Housing / Display*

The EDM35, UDM35 and UDM40 Digital Panel Meters and USC Universal Signal Conditioner feature a modular design in which a power supply module and an input module is "plugged " into the back of an indicator (base unit). Then optional output modules can be added: 1 or 2 relay outputs, 2 relay outputs and 2 transistor outputs, one analog output and/or excitation output.

**Measurements**

| | 1 A DC 60mV/100 V DC 500 V DC | 5 A AC 500 V AC 1 A AC 100 V AC | Up to 1000 Hz Autoranging Capability | 200 mV DC 20/200 V DC 2/20 mA DC | 200 V DC/AC 500 V DC/AC 2/5 A DC/AC | Pt-100, Pt-1000 Ni100 TC:J, L, K, S, T, E 200 Ohm |
|---|---|---|---|---|---|---|
| **DI3 Indicator** DIN mounted, 3-DGT | DI3-DIN.AV6 | DI3-DIN.AV5 DI3-DIN.AV1 | DI3-DIN.F1K | | | |
| **DI3 Indicator** 72 x 72 mm, 3-DGT | DI3-72.AV6 | DI3-72.AV1 DI3-72.AV5 | DI3-72.F1K | | | |
| **LDI3 Indicator** 48 x 96 mm, 3-DGT | LDI3.AV6 | LDI3.AV5 LDI3.AV1 | LDI3.F1K | | | |
| **LDI35, LDM35 Panel Meter** 48 x 96 mm, 3.5-DGT 0/1/2 relay outputs | | | | LDI35.AV0 LDM35 | LDI35.AV2 LDM35 | LDI35.CF LDM35 |
| **MDI40, MDM0 Panel Meter** 48 x 96 mm, 3.75-DGT Analog/RS485 outputs 2 relay outputs | | | | | | MDI40.CF |

*Housing / Display*

# PID Controllers

| | Standard Controller | Ramp / Soak Controller | Limit Controller |
|---|---|---|---|
| **1/32 DIN** Single Display | 3200 | | |
| **1/16 DIN** Dual Display | P1160 | 1166 | 1161, 1162, 1163 |
| **1/8 DIN** Dual Display | 1800 | | 1801 |
| **1/4 DIN** Dual Display | 1400 | 1460,1462, 6000 | 1401 |

*Features*

*Housing / Display*

PID controllers with programmable inputs and outputs. Available with heater break alarm, loop break alarm, ramp to setpoint, auto-tuning, self tuning, and RS485 communications. Ramp/soak controllers and high/low limit controllers.

**Housing sizes:**

1/32 DIN : 24 x 48 mm

1/16 DIN : 48 x 48 mm

1/8 DIN : 48 x 96 mm

1/4 DIN : 96 x 96 mm

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| RPM | Resistance | Temperature |
|---|---|---|
| up to 200K | 200K Ohms Max. | TC: J, K or PT100 RTD |
| EDM 35 Series | EDM 35 Series | EDM 35 Series |
| BU – 5100711 | BU – 5100711 | BU – 5100711 |
| IC – 5100540 | IC – 5100535 | IC – 5100537(J), 5100538 (K) or 5100536 (PT100) |

| 200 mV DC/AC 2/20 V DC/AC 200/500 V DC/AC | 2/20 mA DC/AC 200 mA DC/AC 2/5 A DC/AC | 0.001 Hz-50 kHz 1-10000 RPM's |
|---|---|---|
| MDI40.V | MDI40.A | MDI40.TF MDM40 |

Digital indicators and controllers offered in 3, 3 1/2, 3 3/4 and 4 digits. Measurement of all relevant electrical, physical and pulse signals. RS485 communications are available on some models.

Multi-Zone Controller MLC9000

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# Energy Management

| Features | EM1 DIN | EM2 DIN | EM2 96 | EM3 DIN | EM4 DIN | WM1 DIN | WM12 DIN/96 |
|---|---|---|---|---|---|---|---|
| Modular | | | X | X | X | | |
| Energy Meter | X | X | X | X | X | | |
| Power Analyzer | | | | | | X | |
| Multi-Function Meter | | | | | | | X |
| Power Quality Analyzer | | | | | | | |
| Universal Utility Meter | | | | | | | |
| Transducer | | | | | | | |
| Power Quality Transducer | | | | | | | |
| Graphic Display | | | | | | | |
| Digital Inputs | | | | | | X | |
| Pulse | X | | | X | X | X | |
| Analog Outputs | | | | | | | |
| Alarm Outputs | | X | X | | X | X | |
| Serial Communication | | X | X | | X | X | X |
| Internet Ethernet Comm | | | | | | | |
| GSM/SMS Management | | | | | | | |
| Energy Meter | X | X | X | X | X | X | |
| Gas $H_2O$ Meter | | | | | X | | |
| Instantaneous Variable | | | | | | X | X |
| DIN Rail Mounting | X | X | | X | X | X | X |
| Panel Mounting (96x96) | | | X | | | | X |

## A New Concept of Modularity

Technical advantages and cost benefits:
- PLUG and PLAY modules common to all models
- Maximum in-field flexibility
- Possibility to expand the number and the kind of outputs without replacement of the instruments in-field
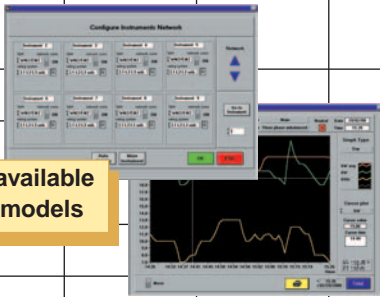- Reduced inventory

EM2-96 Energy Meter — 16-bit µP Tech — 296238 TOT kWh

CARLO GAVAZZI — 296238 TOT kWh — EM2-DIN ENERGY METER

kWh — EM3-DIN Energy Meter

WM22-DIN Power Analyzer — 385 412 / 378 1175

| WM14 DIN/96 | WM2 DIN | WM2 96 | WM22 DIN | WM23 96 | WM24 96 | WM3 96 | WM4 96 | CPT DIN | PQT90 | CVT DIN |
|---|---|---|---|---|---|---|---|---|---|---|
|  |  | X | X | X | X | X | X | X | X |  |
| X |  |  |  |  |  |  |  |  |  |  |
|  | X | X | X |  |  |  |  |  |  |  |
|  |  |  |  | X |  | X |  |  |  |  |
|  |  |  |  |  | X |  | X |  |  |  |
|  |  |  |  |  |  |  |  | X |  | X |
|  |  |  |  |  |  |  |  |  | X |  |
|  |  |  |  |  |  | X | X |  |  |  |
|  |  |  | X | X | X | X | X | X |  |  |
|  | X | X | X | X | X | X | X |  |  |  |
|  |  |  | X | X |  | X |  |  |  | X |
|  |  |  | X |  | X | X | X | X |  |  |
| X |  |  | X | X | X | X | X | X |  | X |
|  |  |  |  |  |  | X | X |  |  |  |
|  |  |  |  |  |  | X | X |  |  |  |
| X | X | X | X | X | X | X | X | X | X |  |
|  |  |  |  |  | X |  | X |  |  |  |
| X | X | X | X | X | X | X | X | X | X | X |
| X | X |  | X |  |  |  |  | X | X | X |
| X |  | X |  | X | X | X | X |  |  |  |

**Software available for most models**



WM24-96 Universal Utility Meter

CVT-DIN TRANSDUCER

WM23-96 Power Quality Analyzer

WM3-96 Smart Power Quality Analyzer

CARLO GAVAZZI — WM2-DIN POWER ANALYZER

WM14-DIN Power Analyzer

WM12-96 Multi Function Meter

CPT-DIN Compact Power Transducer

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# Enclosures and Junction Boxes

| Enclosure Size | Panel Depth | | | | |
|---|---|---|---|---|---|
| Panel Width and Height | 6" | 8" | 10" | 12" | 16" |
| 8" x 12" | SI, ST and STX2-315 | | | | |
| 12" x 12" | SI, ST3-315 | SI 3-320 | | | |
| 12" x 16" | SI, ST and STX3-415 | SI, ST and STX3-420 | | | |
| 12" x 20" | ST3-515 | SI, ST3-520 | | | |
| 16" x 12" | SI, ST and STX4-315 | SI, ST and STP4-320 | | | |
| 16" x 16" | | SI, ST, STP and STX4-420 | | | |
| 16" x 20" | SI, ST4-515 | SI, ST and STX4-520 | SI, ST and STP4-525 | | |
| 16" x 24" | | SI, ST, STP and STX4-620 | SI, ST, STP and STX4-625 | | ST4-640 |
| 20" x 20" | | ST and STX5-520 | | | |
| 20" x 28" | | SI, ST and STP5-720 | SI, ST and STP5-725 | | |
| 24" x 16" | | SI, ST, STP and STX6-420 | | ST and STP6-430 | |
| 24" x 24" | | SI, ST and STP6-620 | | SI, ST and STP6-630 | ST6-640 |
| 24" x 32" | | ST and STX6-820 | SI, ST, STP and STX6-825 | SI, ST and STP6-830 | ST6-840 |
| 24" x 40" | | | ST and STP6-1025 | ST and STP6-1030 | ST6-1040 |
| 24" x 47" | | | | ST and STP6-1230 | |
| 32" x 24" | | | | ST8-630 | |
| 32" x 32" | | | | ST and STX8-830 | ST8-840 |
| 32" x 40" | | | | ST, STP and STX8-1030 | ST8-1040 |
| 32" X 47" | | | | ST, STP and STX8-1230 | |
| 40" X 32" | | ST10-820 | | ST10-830 | |
| 40" X 40" | | | | ST10-1030 | |
| 40" X 47" | | | | ST10-1230 | |

**Single Door Enclosure**  **Double Door Enclosure**



*Also available in stainless steel

Wall mount enclosures are manufactured from a single sheet of metal, and powder coated with a RAL7032 powder coated finish. They are offered with a gasketed locking door (**SI & ST**), with a locking door with a window (**STP**) or in stainless steel (**STX**). The boxes have an external edge with gutter profile preventing ingress of dust, and they carry a NEMA 1,12, 4  / IP55, IP65 environmental rating.

The **SDV** (screw down cover), **SDP** (with door), **SDF** (with gland plate) and **SDVX Series** (with window door) are some of the junction boxes offered. They are offered in a wide range of sizes from 6 x 6 x 3" to 32 x 16 x 5" (H x W x D).

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# ARETA Modular Cabinets and Consoles



The revolutionary **ARETA** Series is a modular 'ready to assemble' cabinet enclosure. You simply order an **ATTF** cabinet 'roof and floor', then the **ATFI** 'side panels', then the **ATPO** 'door' and then the **ATRE** 'rear panel'. It's as simple as that! Then they're assembled in a matter of minutes. The **ARETA** cabinets are available with the various dimensions:

16, 20, 24 or 32" deep

16, 24, 32, 40, 48, 56 or 64" wide

56, 64, 72, 80 or 88" tall

They can also be 'ganged together' to get additional width using an ATKU 'joining kit'.

The ARETA cabinets carry a NEMA12 / IP55 rating and are available with many other options, such as multiple doors, front window doors and inner panels. Although the cabinets are available standard with a rugged RAL7032 textured finish, they are also offered in stainless steel, as PC cabinets with 19" standard rack, with a folding keyboard support, and also as AL Series freestanding consoles in widths of 24, 32, 48 or 64". Also offered are the **BASIC** and **ATB8 Monobloc Series**, which are fully welded and assembled cabinets.

## ZBA Series Freestanding Consoles

24, 32, 40 or 48" wide x 33" high x 16" deep with one or two front door(s).

## PCCO and PCIN Series PC Stands:

For mounting a PC, complete with CPU.

## SBA Series Freestanding Consoles

24, 32, 40 or 48" wide x 33" high x 16" deep with one or two front and rear door(s).
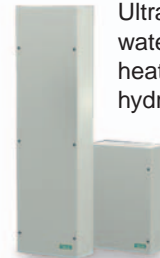
## Thermal Management

A wide range of products, such as:

Ultra-thin conditioners, air-water heat exchangers, heaters, thermostats and hydrostats.



## CR Double Hinged 19" Rack Enclosures

Double-hinged enclosure eases installation.

All enclosures are 24" wide x 9, 14, 20, 25, 30, 35 or 40" high x 18 or 20" deep.

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# Safety Light Curtains

| Detection Resolution | | |
|---|---|---|
| **Finger** | **Hand** | **Body** |

<table>
<tr><td rowspan="2">Safety Category</td></tr>
</table>

| | Finger | Hand | Body |
|---|---|---|---|
| **Type 2** | | SB2-35/x-D15 | SB2-x/x-D50 |
| **Type 4** | SB4-14/x-D6 | SB4-35/x-D15 | SB4-x/x-D25<br>SB4-x/x-D50 |

Carlo Gavazzi offers a full range of safety light curtains, designed to guard a perimeter area around a machine. Utilizing the through-beam principle of photoelectric sensors, safety light curtains use multiple infrared beams to protect operators from dangerous conditions. When any of the beams are broken, a stop signal is sent to the machine via the safety controller. Type 2 and type 4 rated models available, in finger, hand, and body resolutions. Additional features include muting, override, and automatic or manual reset.
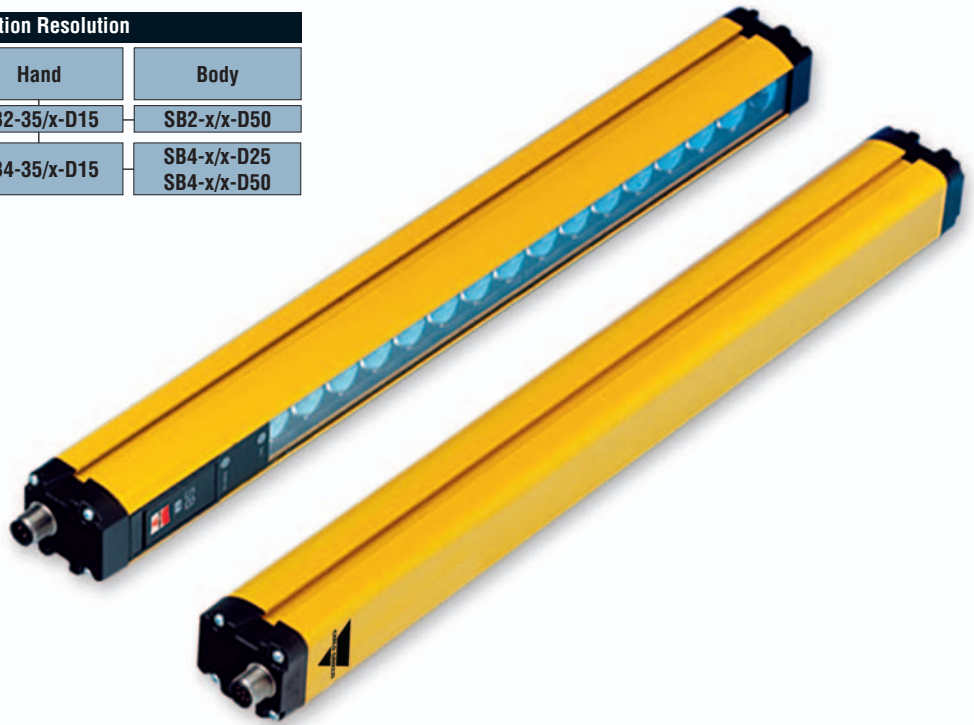
# Safety Modules

| Function | | | | | |
|---|---|---|---|---|---|
| **E-Stop & Safety Gate** | **2 Hand Safety** | **Light Curtain** | **Standstill Monitor** | **Lift Door Unlock & Cabin Level** | **Extension Modules** |

| Housing | E-Stop & Safety Gate | 2 Hand Safety | Light Curtain | Standstill Monitor | Lift Door Unlock & Cabin Level | Extension Modules |
|---|---|---|---|---|---|---|
| **22.5 x 99 x 114.5** | NA1/x | ND1/2-D | NL1/3-D | | NA1/2-D Lift | NE1/4-D |
| **26 x 82 x 101** | M22A2/1-A | | | | | |
| **45 x 75 x 105** | MA1-x, MA2-B-T<br>MS1-D | MD1-D | | | MA1-D Lift | |
| **45 x 84 x 100** | | | | MF1-C | | |

Safety modules for reliable control of various safety devices. Provides interface between safety device and machinery. Modules are tailored for the following applications: E-stop and safety gates, two hand safety devices, standstill monitors, safety light curtains, safety mats, and elevator cabin/lift level control. Extension modules are also available to expand the number of safety contacts available, without compromising the safety rating.

# Safety Mats

Safety mat system is used to provide operator protection in dangerous areas, without restricting operator movement. The pressure sensitive mats are custom fit to each application, to guarantee the best possible coverage. When used with the appropriate Carlo Gavazzi safety module, comprises a safety category 3 system.
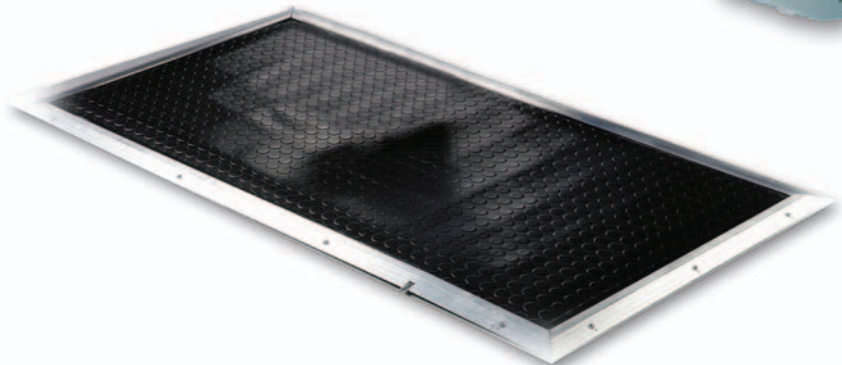
# Safety Switches

| Housing Type | | Housing Size H X W X D (mm) | | | | |
|---|---|---|---|---|---|---|
| | | 58 x 30.5 x 33 mm | 50 x 50 x 33 mm | 62 x 52 x 35.5 mm | 74 x 40 x 36 mm | 110 x 56 x 40 mm |
| Key Actuated | Metal | | E202…S5M | E302…S5M | E402…S5M | E802…S5M |
| | Plastic | E102…S5I | E202…S5I | | E402…S5I | E802…S5I |
| Cable Pull | Metal | E102…TM | E202…TM | E302…TM | E402…TM | E802…TM |
| | Plastic | E102…TI | E202…TI | | E402…TI | |
| Manual Reset | Metal | E102…BM | E202…BM | | | |
| | Plastic | E102…BI | E202…BI | | | |
| Hinge Actuated | Metal | | | | | |
| | Plastic | E102…SCI / SLI | | | | |

Safety switches are designed to protect both people and machinery from numerous dangerous conditions that exist not only in the industrial environment, but also in the commercial world. Some of the switches available include: manual reset switches used for elevators, cable pull switches used for mining applications, conveyors or assembly lines, key interlock switches used for safety doors and barriers, hinge-mount switches used for monitoring the position of doors or gates. The most popular sizes and shapes are offered. Their rugged metal housings and economical plastic housings provide one to three 1/2" NPT conduit entryways.
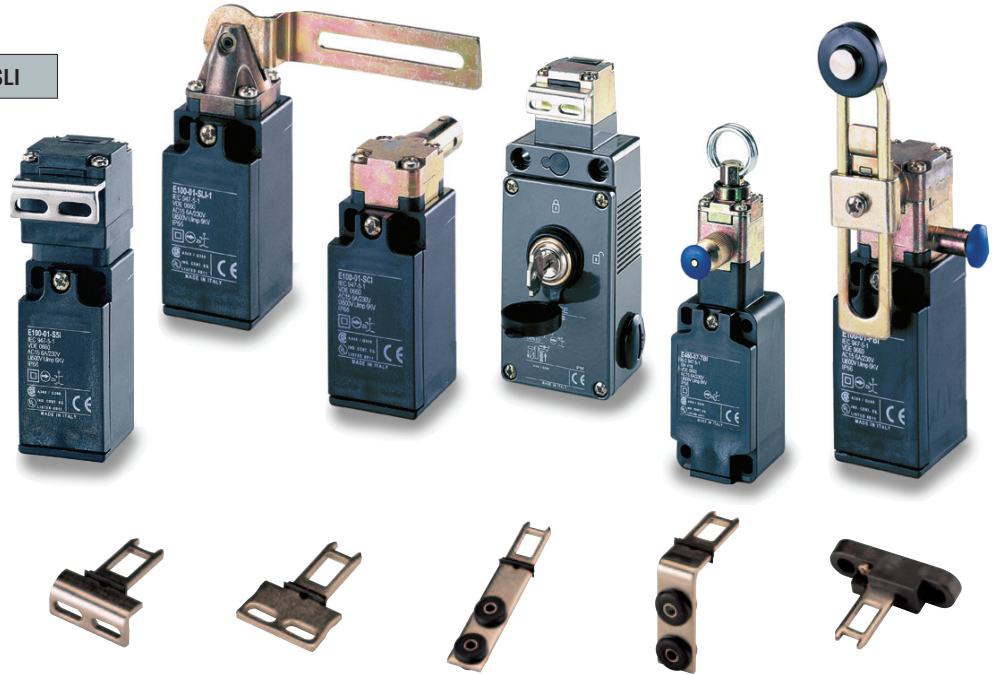
Angle key with fixing perpendicular to operations direction mounting, always supplied

Straight key for linear actuating

Long straight key for linear actuating

Long angle key with fixing perpendicular to the operating direction mounting

Hinged key with screw for key angle regulation

# Safety Magnetic Sensors

| Housing Type | Outputs | | | |
|---|---|---|---|---|
| | 1 NO | 2 NO | 1 NO + 1 NC | 2 NO + 1 NC |
| Cylindrical | SMS-A2P-10 | SMS-A2P-30 | SMS-A2P-02 | |
| Rectangular | | SMS-03 | SMS-01 SMS-02 | SMS-03/NC |

SMS safety magnetic sensors are used to monitor the position status of hinged, sliding, or removable guards. Can be used in extremely harsh industrial environments where dirty and damp conditions are common, as well as applications where washdown occurs. The sensors are available in rectangular and cylindrical housings, with a variety of output options. Specially coded magnets are also available, to guarantee the safety of the system, by making the sensor impossible to trip with standard magnets. Conforms to safety category 3 or 4, depending upon type.

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# Dupline® Field & Installationbus

| | Central unit | | | Input | | | | Output | |
|---|---|---|---|---|---|---|---|---|---|
| | **DIN** | **Socket** | **PCB** | **DIN** | **Socket** | **PCB** | **Other** | **DIN** | **Socket** |
| **128 I/O Signals** | G34900000 D34900000 | GPD1901 FPD1901 | | | | | | | |
| **128 I/O Signals & Logic** | G38900014 G38900034 G38910020/21 G38910050 E3800 | | | | | | | | |
| **Contact Signal** | | | | G50101106 G34205501 | GFD1441 GFD1551 | G21104401 G21205501 | G88104401 G89102116 | G38305543 G34301149 G34302249 G34304249 | GAD1111 GAD1213 |
| **NPN Signal** | | | | G34205501 | GFD1440 GFD1550 | G21205501 | | G34305511 | GAD1500 D12305111 |
| **PNP Signal** | | | | | | | | G34305521 | GAD1501 GAD1504 |
| **6-32 VDC** | | | | | GFD1441 GFD1551 | | | | |
| **6-265 VAC/DC** | | | | G34205502 | | | G34305545 | G34305545 | |
| **Analog 0-20 mA Signal** | | | | G34296470 | FFD1531 | | | G34396470 | FAD1531 |
| **Analog 4-20 mA Signal** | | | | G32101161 G34296470 | FFD1532 | | | G34396470 | FAD1532 |
| **Analog 0-10 VDC Signal** | | | | G34296470 | FFD1533 | | | G34396470 | FAD1533 |
| **Analog Temperature Signal** | | | | G32101111 G32101112 G32101113 D34296192 | | | | | |
| **Inductive Proximity Switch** | | | | | | | | | |
| **Magnetic Proximity Switch** | | | | | | | | | |
| **Passive Infrared Detector** | | | | | | | G40855560 G41855530 | | |
| **Text/Touch Display** | | | | | | | | | |
| **I/O Indicator** | | | | | | | | | |
| **4-Digit, 7-Segment** | | | | | | | | | |
| **PLCs and Serial Interfaces** | G38900014 G38900034 G349600 | | G219600 | | | | | | |
| **Profibus-DP Gateway** | G38910020/21 | | | | | | | | |
| **DeviceNet Gateway** | G38910050 | | | | | | | | |
| **LonWorks Gateway** | G38910051 | | | | | | | | |
| **Interbus-S Gateway** | G38910052 | | | | | | | | |
| **Modbus Gateway** | G38910053 | | | | | | | | |
| **Centronic Interface** | G38900014 G38900034 | | | | | | | | |
| **Modem Interface** | G3800 | | | | | | | | |
| **Fibre Optic Interface** | | | | | | | | | |
| **Accessories** | FMK xxx RS232-9M/9F D9091SW | FMK xxx HF | RS485-CAB G34850000 | D32124000 | HF | | | D32124000 | HF |

**Dupline-Online** allows monitoring and control of any remote facility via the Internet.

Bi-directional transmission of analog and /or digital signals over a single twisted pair of wire. Extremely immune to electrical noise, up to a six mile distance in any number of topology system designs. Longer distances possible with the implementation of signal repeaters or modems. Communication interfaces include: DeviceNet, Profibus-Dp, LonWorks, Interbus-s, Modbus gateways, and directly mapped PLC gateways (for Mitsubishi, GE Fanuc, Siemens, Omron, LG, AB, Schneider, Koyo, Matsushita, Siemens, Toshiba, IDEC) modem interfaces (dial-up, leased line, cellular, RF and microwave). Over 100,000 installations worldwide, quickly approaching one million I/O nodes.

**System Accessories**

GAP1605 programmer, ADAPT1605 adaptor, GTU8 tester, DT01 terminator and D3892000 repeater.

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GH64404412
G81104406
G82104406
G85101101
G85102201
G85103301
G34485234

G88301143
GH34404412

G34404443

FFD1680
SPEC0918
G44207401

G21305511

GXD1500

G21405510

G21305521

G21404421
G21405520

G42484133



**Dupline®**
*Fieldbus* | *Installationbus*

G86111010
G89111010

G61101145

G89101101
G89101101G

G89101127

GTS565
GTD50
ETS377S

G5460

D63696475
G21391139

D90910210
G34910090
G219600..
G38900014
G38900034

G38910020/21

G38910050

G38910051

G38910052

G38910053

D90910210

G34910000
G34910090

| 8047-Bracket | HF | 8047-Bracket | 1G89101101<br>1G89101101G | HF<br>SPEC0919 | D9091SW<br>D7191SW |
|---|---|---|---|---|---|

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