

## Signal Converters, Conditioners & Isolators



K series

## Remote Control, Supervision & Data Aquisition



GSM GPRS PSTN VPN

## Displays Multi-line & Loop Powered



S401L

S315

## Distributed I/O system



Z series

Modbus

CANopen

Signal Converters, Conditioners & Interfaces

| CONVERSION TYPE |                     |                                                                           |              | SIGNALS / INTERFACES |          | OTHER FEATURES      |                            |                       |                |
|-----------------|---------------------|---------------------------------------------------------------------------|--------------|----------------------|----------|---------------------|----------------------------|-----------------------|----------------|
| PRODUCT CODE    | MEASUREMENT         | INPUT                                                                     | OUTPUT       | # of In              | # of Out | AUXILIARY SUPPLY    | MAXIMUM GALVANIC ISOLATION | DIMENSIONS (mm)       | ACCURACY CLASS |
| K107A           | Serial              | RS485                                                                     | RS485        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    |                |
| K107B           | Serial              | RS232                                                                     | RS485        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    |                |
| K107USB         | Serial              | USB                                                                       | RS485        | 1                    | 1        | external / by loop  | 1.5 kVac                   | 6.2 x 93.1 x 102.5    |                |
| K109LV          | Analog              | ± 25 - 2000 mV                                                            | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109PT          | Temperature         | Pt100 -150 to 600°C                                                       | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109PT-HPC      | Temperature         | Pt100 -200 to 160°C                                                       | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109PT1000      | Temperature         | Pt1000 -200 to 210°C                                                      | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109S           | Analog              | mA, V                                                                     | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109TC          | Temperature         | TC (J,K,R,S,T,B,E,N)                                                      | mA, V        | 1                    | 2        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K109UI          | Analog              | mA, V                                                                     | mA, V        | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| K111            | Digital / Pulse     | Namur, PNP, NPN, Reed, Photocell                                          | PNP          | 1                    | 2        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    |                |
| K112            | Digital / Pulse     | Namur, PNP, NPN, Reed, Photocell                                          | NPN & PNP    | 1                    | 2        | external / by loop  | 1.5 kVac                   | 6.2 x 93.1 x 102.5    |                |
| K120RTD         | Temperature         | Pt100 -200 to 650, Ni100 -60 to 250°C                                     | mA           | 1                    | 1        | external / by loop  |                            | 6.2 x 93.1 x 102.5    | 0.1%           |
| K121            | Universal           | +/-mA, +/-mV +/-V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000 | mA           | 1                    | 1        | 19.2-30 Vdc         | 1.5 kVac                   | 6.2 x 93.1 x 102.5    | 0.1%           |
| S203T           | Network Analyser 3Ø | max. 600VAC, 100mAAC                                                      | mA, V, RS485 | 1                    | 1        | 10-40 Vdc/19-28 Vac | 3.75 kVac                  | 105 x 89 x 60         | 0.2%           |
| S203TA          | Network Analyser 3Ø | max. 600VAC, 5AAC                                                         | mA, V, RS485 | 1                    | 1        | 10-40 Vdc/19-28 Vac | 3.75 kVac                  | 105 x 89 x 60         | 0.2%           |
| T120            | Temperature         | Pt100, Ni100                                                              | mA           | 1                    | 1        | external / by loop  |                            | 20.0 mm x Ø 44.0      | 0.1%           |
| T121            | Temperature         | Pt100, Ni100, Pt500, Pt1000, TC (J,K,R,S,T,B,E,N)                         | mA           | 1                    | 1        | external / by loop  | 1.5 kVac                   | 20.0 mm x Ø 44.0      | 0.1%           |
| T201            | AC current          | 0 - 40 AAC selectable                                                     | mA           | 1                    | 1        | external / by loop  | 300 Vac                    | 38 x 40 x 20 (Ø 12.5) | 0.1%           |
| T201DC          | DC current          | 0 - 40 AAC selectable                                                     | mA           | 1                    | 1        | external / by loop  | 1 kVdc                     | 38 x 40 x 20 (Ø 12.5) | 0.1%           |
| T201DC-H        | AC/DC current       | ± 50 A AC/DC selectable                                                   | V            | 1                    | 1        | 11.5 - 28 Vdc       | 300 Vac                    | 38 x 40 x 20 (Ø 12.5) | 0.5%           |
| T201DC-100      | DC current          | 0 - 100 ADC selectable                                                    | mA           | 1                    | 1        | external / by loop  | 1 kVdc                     | 38 x 40 x 20 (Ø 12.5) | 0.2%           |
| T201DC-H-100    | AC/DC current       | ± 100 A AC/DC selectable                                                  | V            | 1                    | 1        | 11.5 - 28 Vdc       | 300 Vac                    | 68 x 95 x 25 (Ø 21)   | 0.5%           |
| T201DC-H-300    | AC/DC current       | ± 300 A AC/DC selectable                                                  | V            | 1                    | 1        | 11.5 - 28 Vdc       | 300 Vac                    | 68 x 95 x 25 (Ø 21)   | 0.5%           |
| Z-SG            | Analog              | mV, load cell                                                             | mA, V, RS485 | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112      | 0.1%           |
| Z102            | Analog              | Ohm                                                                       | mA, V        | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112      | 0.2%           |



| CONVERSION TYPE |                     |                                                                                                   |                          | SIGNALS / INTERFACES |          | OTHER FEATURES      |                            |                  |                |
|-----------------|---------------------|---------------------------------------------------------------------------------------------------|--------------------------|----------------------|----------|---------------------|----------------------------|------------------|----------------|
| PRODUCT CODE    | MEASUREMENT         | INPUT                                                                                             | OUTPUT                   | # of In              | # of Out | AUXILIARY SUPPLY    | MAXIMUM GALVANIC ISOLATION | DIMENSIONS (mm)  | ACCURACY CLASS |
| Z104            | Analog              | mA, V                                                                                             | NPN, Reed Relay to 10kHz | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.2%           |
| Z107FO          | Serial              | RS232/RS485                                                                                       | Fiber Optic              | 1                    | 1        | 10-40 Vdc/19-28 Vac | 500Vac                     | 17.5 x 100 x 112 |                |
| Z109PT2         | Temperature         | Pt100, Pt500, Pt1000 Ni100, KTY81, KTY84, NTC                                                     | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z109REG         | Universal           | mA, mV, V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100                                                       | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.2%           |
| Z109REG2        | Universal           | +/-mA, +/-mV +/-V, Ohm, TC (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)               | mA, V / SPST Relay       | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z109REG2-H      | Universal           | As above                                                                                          | mA, V / SPST Relay       | 1                    | 1        | 85-265 Vac/dc       | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z109S           | Analog              | 0/4 - 20 mAdc active/passive                                                                      | mA                       | 1                    | 1        | 19-40 Vdc/ 9-30 Vdc | 1.5 kVac                   | 17.5 x 100 x 112 | 0.2%           |
| Z109TC          | Temperature         | TC (J,K,R,S,T,B,E,N)                                                                              | mA, V                    | 1                    | 1        |                     | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z109UI2         | Analog              | +/-mA, +/-mV +/-V                                                                                 | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z110D           | Analog              | mA                                                                                                | mA                       | 2                    | 2        | by loop             | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z110S           | Analog              | mA                                                                                                | mA                       | 1                    | 1        | by loop             | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z111            | Digital / Pulse     | Contact, Reed, NPN, PNP, Namur, Photoelectric, Hall, Var. Reluctance,Pulsed 24 V, TTL, max. 10kHz | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.2%           |
| Z112A           | Digital / Pulse     | As above max. 400Hz                                                                               | SPDT Relay               | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 |                |
| Z112D           | Digital / Pulse     | As above                                                                                          | SPST Relay               | 2                    | 2        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 |                |
| Z113D           | Analog              | mA, V                                                                                             | SPST Relay               | 1                    | 2        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 |                |
| Z113S           | Analog              | mA, V                                                                                             | SPDT Relay               | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 |                |
| Z113T           | Analog              | mA, V                                                                                             | SPST Relay               | 1                    | 3        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 |                |
| Z170REG         | Analog              | mA, mV, V, Ohm, TC, (J,K,R,S,T,B,E,N), Pt100, Ni100, Pt500, Pt1000, (Strobe)                      | mA, V                    | 1                    | 2        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.1%           |
| Z190            | Analog              | mA, V                                                                                             | mA, V add / subtract     | 2                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.2%           |
| Z201            | AAC                 | 0-5/0-10AAC                                                                                       | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 1.5 kVac                   | 17.5 x 100 x 112 | 0.3%           |
| Z201-H          | AAC                 | 0-5/0-10AAC                                                                                       | mA, V                    | 1                    | 1        | 85-265 Vac/dc       | 4 kVac                     | 17.5 x 100 x 112 | 0.3%           |
| Z202            | VAC                 | 0-500VAC                                                                                          | mA, V                    | 1                    | 1        | 10-40 Vdc/19-28 Vac | 3.75 kVac                  | 17.5 x 100 x 112 | 0.3%           |
| Z202-H          | VAC                 | 0-500VAC                                                                                          | mA, V                    | 1                    | 1        | 85-265 Vac/dc       | 4 kVac                     | 17.5 x 100 x 112 | 0.3%           |
| Z202-LP         | VAC/DC              | 0 - 500VAC / 0 - 540VDC                                                                           | mA, V                    | 1                    | 1        | by loop             | 4 kVac                     | 17.5 x 100 x 112 | 0.3%           |
| Z203-1          | Network Analyser 1Ø | 0-5AAC & 0-500VAC                                                                                 | mA, V, RS485             | 2                    | 1        | 10-40 Vdc/19-28 Vac | 3.75 kVac                  | 17.5 x 100 x 112 | 0.5%           |
| Z204            | VAC                 | 0 - 1000VAC/DC                                                                                    | mA, V, RS485             | 1                    | 2        | 10-40 Vdc/19-28 Vac | 4 kVac                     | 17.5 x 100 x 112 | 0.5%           |

## Digital I/O Modules with MODBUS & CANopen communication

| Product Code | Input Channels                          | Type                                             | Output Channels         | Type                        | Communication              |
|--------------|-----------------------------------------|--------------------------------------------------|-------------------------|-----------------------------|----------------------------|
| Z-D-IN       | 5 digital opto isolated                 | 4 x 100Hz, 1 x 10kHz, 16bit                      |                         |                             | RS485 Modbus RTU           |
| Z-D-OUT      |                                         |                                                  | 5 SPST NO               | 5A @ 250vac                 | RS485 Modbus RTU           |
| Z-10-D-IN    | 10 digital self powered shared negative | 2 x 32 bit counters @ 10kHz & 8 x 16 bit @ 100hZ |                         |                             | RS485 Modbus RTU           |
| Z-10-D-OUT   |                                         |                                                  | 10 mosfet opto isolated | 0.5A (2 cycles/ sec.)       | RS485 Modbus RTU           |
| Z-D-IO       | 6 digital opto isolated                 |                                                  | 2 SPST NO/NC selectable | 5A @ 250vac                 | RS485 Modbus RTU           |
| Z-DAQ-PID    | 1 analog                                | 0-10vdc, 0/4-20mAAdc, 1-10kohm, TC, RTD          | 1 analog                | 0-5/10vdc, 0/4mAAdc         | RS485 Modbus RTU           |
| Z-4AI        | 4 analog                                | +/- 2/10vdc / +/- 20mAAdc                        |                         |                             | RS485 Modbus RTU           |
| Z-8AI        | 8 analog                                | +/- 2/10vdc / +/- 20mAAdc                        |                         |                             | RS485 Modbus RTU           |
| Z-3AO        |                                         |                                                  | 3 analog                | +/- 2/10vdc / 0/4 - 20mAAdc | RS485 Modbus RTU           |
| Z-4RTD-2     | 4 temperature                           | RTD 2, 3 or 4 wires                              |                         |                             | RS485 Modbus RTU           |
| Z-4TC        | 4 temperature                           | Thermocouple (+/- 160mV)                         |                         |                             | RS485 Modbus RTU           |
| Z-8TC        | 8 temperature                           | Thermocouple -10mV to +/- 81mV                   |                         |                             | RS485 Modbus RTU           |
| Z-SG         | 1 - 4 (350 ohms) / 1 - 8 (1000 ohms)    | Strain gauge / Load Cell                         | 1 analog                | 0 - 5/10vdc / 0/4 - 20mAAdc | RS485 Modbus RTU           |
| Z-203        | Single Phase Network Analyzer           | 0 - 500 vac 50/60Hz & 0 - 5aac                   | 1 analog                | 0 - 5/10vdc / 0/4 - 20mAAdc | RS485 Modbus RTU           |
| Z-204        | 1 voltage                               | 0 - 1000vac/dc                                   | 1 analog                | 0/4 - 20mAAdc               | RS485 Modbus RTU           |
| ZC-24DI      | 24 digital self powered shared negative | 8 x 32 bit counters @ 10kHz                      |                         |                             | RS485 Modbus RTU / Canopen |
| ZC-24DO      |                                         |                                                  | 24 mosfet shared common | 0.5A                        | RS485 Modbus RTU / Canopen |
| ZC-16DI-8DO  | 16 digital                              | 8 x 32 bit counters @ 10kHz                      | 8 mosfet shared common  | 0.5A                        | RS232 Modbus RTU / Canopen |
| ZC-8AI       | 8 analog (4 isolated zones)             | +/- 10vdc / 0/4 - 20mAAdc                        |                         |                             | RS232 Modbus RTU / Canopen |
| ZC-3AO       |                                         |                                                  | 3 analog                | +/- 10.5vdc / 0 - 20mAAdc   | RS232 Modbus RTU / Canopen |
| ZC-4RTD      | 4 temperature                           | RTD 2, 3 or 4 wires                              |                         |                             | RS232 Modbus RTU / Canopen |
| ZC-8TC       | 8 temperature                           | Thermocouple -10mV to +/- 81mV                   |                         |                             | RS232 Modbus RTU / Canopen |
| ZC-SG        | 1 - 4 (350 ohms)                        | Strain gauge / Load Cell                         |                         |                             | RS232 Modbus RTU / Canopen |

## Displays 48 x 96 mm

| Product Code | Input Channels  | Type                                       | Output Channels                   | Type                         | Communication              |
|--------------|-----------------|--------------------------------------------|-----------------------------------|------------------------------|----------------------------|
| ESM4900      | 1 universal     | analog, relay, SSR, transistor             | 4 LED                             | 24vac/dc / 100-240vac        | RS232 (std) RS485 (option) |
| S311A6       | 1 analog        | 0 - 10vdc/ 0/4 - 20mAAdc + relays (option) | 6 LED                             | 10-40vdc / 19 - 28vac        | RS485 Modbus RTU(option)   |
| S311A8       | 1 analog        | 0 - 10vdc/ 0/4 - 20mAAdc + relays (option) | 8 LED                             | 10-40vdc / 19 - 28vac        | RS485 Modbus RTU(option)   |
| S311A11      | 1 analog        | 0 - 10vdc/ 0/4 - 20mAAdc + relays (option) | 11 LED                            | 10-40vdc / 19 - 28vac        | RS485 Modbus RTU(option)   |
| S315         | 1 x 4 - 20mAAdc |                                            | 4 LED                             | None (10 - 30vdc loop power) |                            |
| S401L        | 20 via RS485    |                                            | 20 lines OLED<br>3 lines per page | 10-40vdc / 19 - 28vac        | RS485 Modbus RTU           |

## Remote Terminal Units for remote control & monitoring of processes



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