

Z-PC Line

DATA ACQUISITION SYSTEMS, DISTRIBUTED AUTOMATION AND REMOTE CONTROL

Z-PC Line is a modular automation system for management of the single signal to thousands of I/Os. The Z-PC Line includes the widest variety of I/O modules: digital inputs, high-speed counters, digital relay outputs and mosfets, analog channels (mA, V, Ohm, mV), strain gauges, resistance thermometers, thermocouples, electrical signals, galvanically isolated and with ModBUS, CANopen, Ethernet, M-BUS communication protocols. The I/O modules support RS485 serial communication with RTU ModBUS protocol, up to 64 nodes without repeater and speeds up to 115 kbps. The wiring of the power supply and of the serial connection is facilitated by means of a bus that can be housed in the IEC EN 60715 rail. Maximum data concentration is also guaranteed.

For example, with only 1 module, up to 24 digital and 8 analog signals can be acquired. Modular DIN rail bus support is available in 1, 2, 4, 8 slot formats. The modules are of a Hot-Swap type that is "hot" replaceable, without interrupting the power supply and communication. Completing the system is a wide range of interfaces and network interconnections to expand the configuration. Thanks to its flexibility and modularity, the Z-PC Line is a distributed system for multi-sector applications: data acquisition, building automation, remote control, energy consumption monitoring, production control, naval automation, laboratory tests and tests, environmental analyses, water treatment etc.

MULTIFUNCTION CONTROL UNIT



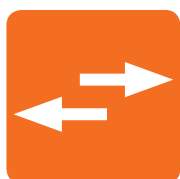
I/O MODULES



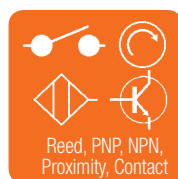
SoftPLC
IEC 61131



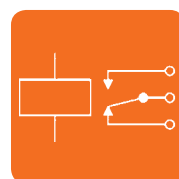
OPENING
SCADA / OPC / WEB
CLIENT



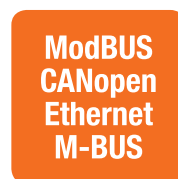
I/O MANAGEMENT
On-board integrated
External up to 1,000 I/O



DIGITAL
INPUTS



INTEGRATED CONTROL
FUNCTIONS



PROTOCOLS
SUPPORTED



IEC 61850
IEC 60870-5-101/104
ENERGY PROTOCOLS



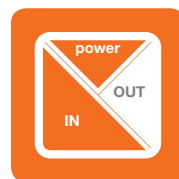
ARCHIVING
DISPLAY



ADVANCED ALARMS



DIGITAL
OUTPUTS



ISOLATION
MULTI-WAY 1.5 kVac



COUNTERS
32 bit @10kHz



INTEGRATION WITH
THIRD PARTY DEVICES



SPECIAL APPLICATIONS
AND LIBRARIES



DATA INTERCHANGE
WITH OPC UA
STANDARD



HIGH OPERATING
TEMPERATURE RANGE



REMOVABLE TERMINALS
2.5 mm²



FRONT COMMUNICATION
PORT

GENERAL CHARACTERISTICS

EXTENDED
RANGE



UNIVERSAL
APPLICATIONS



FLEXIBLE CONFIGURATION
(EASY SETUP, Z-NET4, DIP switch)



TOOLS AND SERVICES FOR
SYSTEM INTEGRATOR



DATA ACQUISITION TOOL
(Data Recorder, OPC UA, Driver NI
LabVIEW, Librerie ModBUS Visual Studio)



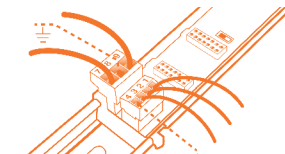
VAC/DC power supply
SWITCHING ON THE SAME
HARDWARE



TRANSDUCERS
POWER SUPPLY



BUS SYSTEM
(power supply, communication)
with DIN rail



COMMUNICATION INTERFACES



HOT SWAPPING
Hot insertion / extraction of
modules



DAQ SOFTWARE
DATA RECORDER



ANALOG
INPUTS



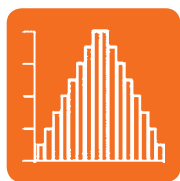
GATEWAY / ROUTER 3G+
/ 4G / GPS / GLONASS



SERIAL / USB
CONVERTERS



INDUSTRIAL
MODEMS



RESOLUTION
UP TO 16 bit



UL AND CE
CERTIFICATIONS



LOAD CELL
INPUTS



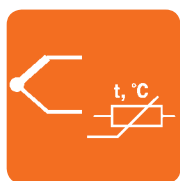
CONVERTERS FOR FIBRE
OPTICS



RADIOMODEM
169 / 869 MHz



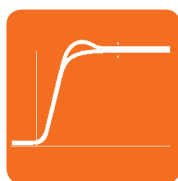
IT PROTOCOLS



INPUTS FROM
TEMPERATURE SENSORS



ELECTRIC
MEASUREMENTS



PID
REGULATION



REMOTE CONTROL/
REMOTE ASSISTANCE
SOLUTIONS



VPN
SUPPORT



IOT/ CLOUD
Solutions

MODBUS DIGITAL I/O MODULES

	Z-D-IN	Z-D-OUT	Z-10-D-IN	Z-10-D-OUT
			 	 
	5-CH digital inputs / RTU ModBUS RS485	5-CH digital outputs / RTU ModBUS RS485	10-CH digital inputs / RTU ModBUS RS485	10-CH digital outputs / RTU ModBUS RS485
GENERAL DATA				
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac / 50-60 Hz
Max power consumption	2.5 W	2.5 W	3.5 W	2.5 W
Isolation	30-way Vac 1,500	30-way Vac 1,500	30-way Vac 1,500	30-way Vac 1,500
Transducers power supply	Yes, 17Vdc/20mA, max 5 sensors	-	Yes, 17Vdc/40mA, max 10 sensors	-
Status indicators	Power supply Error Data Transmission Data Receipt Input Status	Power supply Error Data Transmission Data Receipt Output Status	Power supply Error Data Transmission Data Receipt Input Status	Power supply Error Data Transmission Data Receipt Input Status Diagnostics
Protection degree	IP20	IP20	IP20	IP20
Operating temperature	-10..+65°C	-20..+65°C	-20..+65°C	-10..+65°C
Dimension	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	140 g approx.	140 g approx.	140 g approx.	140 g approx.
Case	Nylon 6 30% glass fibre self-extinguishing class V0	Nylon 6 30% glass fibre self-extinguishing class V0	Nylon 6 30% glass fibre self-extinguishing class V0	Nylon 6 30% glass fibre self-extinguishing class V0
Connections	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar, USB Micro	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar, USB Micro	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar, USB Micro	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar, USB Micro
Installation	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277
Programming	Z-NET4 (system software) EASY SETUP 2 (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP 2 (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP 2 (plug&play software) DIP switch	Z-NET4 (system software) EASY SETUP 2 (plug&play software) DIP switch
Data Memory	EEPROM for configuration parameters, retention time 10 years, FeRAM for counter saving	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years, FeRAM for counter saving	EEPROM for configuration parameters, retention time 10 years
COMMUNICATION				
Interfaces	RS485 2 wires	RS485 2 wires	RS485 2 wires	RS485 2 wires
Speed	Up to 115.20 bps	Up to 115.20 bps	Up to 115.20 bps	Up to 115.20 bps
Protocols	slave RTU ModBUS	slave RTU ModBUS	slave RTU ModBUS	slave RTU ModBUS
Communication time	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)	< 10 ms (@ 38400 bps)
Max distance	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
INPUT / OUTPUT DATA				
Number of Channels	5 inputs	5 outputs	10 inputs	10 outputs
Type	No. 5 Reed opto-isolated inputs, Proximity, PNP, NPN, clean contact etc. Nr.5 counters @16 bit, max frequency 100 Hz; settable; No. 1 counter @32 bit, max frequency 10 kHz Debounce filter 5..250 ms Overflow indication of each totaliser	No. 5 SPST relay outputs (NO with common) Max relay capacity 5A 250 Vac with resistive load; 2A with inductive load Total current mx 12 A on the common terminal Set relay safety status at start-up in case of communication failure Safety time adjustable from 0.5 to 25 ms	No. 10 digital inputs with 16 V self-supplied common negative protected by 600 W/ms TVS transients suppressors No. 10 inputs with 32 bit totaliser with maximum frequency 2.5 kHz Frequency measurement, period, Ton and Toff for all inputs Ability to set the totalisers for counting forward or backwards Indication of the overflow of each totaliser	Nr.10 MOSFET outputs protected against short circuit with common negative, supplied from 6 to 40 Vdc, flow rate 0.5 A, resistive or inductive load Settable safety time 33 ms..2184 s Load power supply voltage measurement Diagnostic signalling on the front for each channel: ON/OFF /Overload/Open circuit Programmable fail-safe function (status of the outputs in case of serial communication fail)
STANDARD				
Certifications	EC	EC	UL-UR CSA, EC	UL-UR CSA, EC

The technical data and the diagrams in this document are indicative and not binding.

MODBUS ANALOG I/O MODULES

	Z-DAQ-PID	Z-4AI	Z-8AI	Z-3AO
Modbus				
	Universal I/O module with PID regulation / RTU ModBUS RS485	4-CH voltage inputs - current / RTU ModBUS RS485	8-CH voltage inputs - current / RTU ModBUS RS485	3 -CH / current outputs / current / RTU ModBUS RS485
GENERAL DATA				
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Max power consumption	2 W	3.5 W	3.5 W	3.2 W
Isolation	1.5 kVac (3-way)	1.5 kVac (3-way)	1.5 kVac (3-way)	1.5 kVac (3-way)
Transducers power supply	Yes, 17Vdc/25mA, max 1 channel	Yes, 20Vdc/40mA, max 4 channels	Yes, 13Vdc/90+90mA, max 8 channels	-
Status indicators	Power supply Error Data Transmission Data Receipt	Power supply Error Data Transmission Data Receipt	Power supply Error Data Transmission Data Receipt	Power supply Error Data Transmission Data Receipt
Protection degree	IP20	IP20	IP20	IP20
Operating temperature	-10..+65 °C	-10..+65 °C	-20..+65°C	-20..+65°C
Dimension	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm
Weight	140 g approx.	140 g approx.	140 g approx.	140 g approx.
Case	Preloaded nylon 30% glass fibre self-extinguishing class V0	Preloaded nylon 30% glass fibre self-extinguishing class V0	Preloaded nylon 30% glass fibre self-extinguishing class V0	Preloaded nylon 30% glass fibre self-extinguishing class V0
Connections	Screw removable terminals for 2.5 mm ² conductors	Screw removable terminals for 2.5 mm ² conductors Front USB Micro Port (RS232/COM)	Screw removable terminals for 2.5 mm ² conductors Front USB Micro Port (RS232/COM)	Screw removable terminals for 2.5 mm ² conductors Front USB Micro Port (RS232/COM)
Installation	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277
Programming	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch
Data Memory	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years
COMMUNICATION				
Interfaces	RS485 2 wires RS232 (stereo jack 3.5 mm)	RS485 2 wires RS232 (stereo jack 3.5 mm)	RS485 2 wires RS232 (stereo jack 3.5 mm)	RS485 2 wires RS232 (stereo jack 3.5 mm)
Speed	Up to 115,200 bps	Up to 115,200 bps	Up to 115,200 bps	Up to 115,200 bps
Protocols	MosBUS RTU slave	MosBUS RTU slave	MosBUS RTU slave	MosBUS RTU slave
Communication time	< 10 ms (@38,400 bps)	< 10 ms (@38,400 bps)	< 10 ms (@38,400 bps)	< 10 ms (@38,400 bps)
Max distance	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
INPUT / OUTPUT DATA				
Number of Channels	1 input, 1 output	4 inputs	8 inputs	3 outputs (active)
Type	INPUT Millivolt: configurable from -10 to + 80 mV Voltage: configurable from 0 to 10 V Current configurable from 0 to 20 mA Potentiometer: 1 k Ω .. 100 k Ω Thermocouple J,K,E,T,N,B,R,S RTD: Pt100, Pt500, Pt1000, Ni100 OUTPUT Configurable voltage from 0-10 V Active / passive configurable current from 0-20 mA	VOLTAGE Bipolar with F.S.programmable at ± 2 Vdc and ± 10 Vdc; impedance input > 100 k Ω m CURRENT Bipolar with F.S.programmable at ± 20 mA with internal shunt 50 Ohm selectable via DIPswitch; available power supply: 90+90mA @13 Vdc.	Bipolar inputs programmable in voltage (± 2.5 Vdc, ± 10 Vdc, impedance> 100 k Ω) or in current (± 20 mA)	Voltage (± 10 V, 0/2..10 V, controllable impedance > 600 Ω W) or in current (0/4..20 mA, controllable impedance < 600 Ω) internal shunt 50 Ω
Resolution	14 bit + sign	16 bit	16 bit	13 bit
Accuracy class	0.1%	0.1%	0.1%	0.1%
Stability	0.01%/°C	0.01%/°C	0.01%/°C	0.01%/°C
STANDARD				
Certifications	EC	EC	UL-UR CSA, EC	UL-UR CSA, EC

MODBUS TEMPERATURE I/O MODULES

	Z-4RTD2	Z-4TC	Z-8TC-1	Z-8TC-LAB	Z-8NTC
					
	4-CH thermoresistance inputs / RTU ModBUS RS485	4-CH thermocouple inputs / RTU ModBUS RS485	8-CH thermocouple inputs and mV / RTU ModBUS RS485	8-CH inputs from thermocouples and mV / RS485 RTU ModBUS with terminals interchangeable	8-CH thermoresistance inputs NTC / RTU ModBUS RS485
GENERAL DATA					
Power supply	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc, 19..28 Vac 50..60 Hz	10..40 Vdc, 19..28 Vac 50..60 Hz, bus powered	10..40 Vdc, 19..28 Vac 50..60 Hz, bus powered	10..40 Vdc, 19..28 Vac 50..60 Hz
Max power consumption	0.7 W	1 W	0.6 W	0.6 W	TBD
Isolation	3-way Vac 1,500	3-way Vac 1,500	6-way Vac 1,500	6-way Vac 1,500	30-way Vac 1,500
Transducers power supply	-	-	-	-	-
Status indicators	Power supply Error Data transmission Data receipt	Power supply Error Data transmission Data receipt	Power supply Error Communication RS485	Power supply Error Communication RS485	Power supply Error Data transmission Data receipt
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperature	-20...+70 °C	-25...+65°C	-25...+65°C	-25...+65°C	-20...+70 °C
Dimension	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm	17.5x100x112 mm
Weight	140 g approx.	140 g approx.	140 g approx.	140 g approx.	140 g approx.
Case	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing
Connections	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar Front USB Micro Port (RS232 / COM)	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar Front USB Micro Port (RS232 / COM)	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar Front USB Micro Port (RS232 / COM)	2-way removable screw terminals, 3.5 mm pitch, for cable max. 1.5 mm ² interchangeable IDC10 rear connector for DIN bar Front USB Micro Port (RS232 / COM)	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar Front USB Micro Port (RS232 / COM)
Installation	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277
Programming	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch	System software (Z-NET4) EASY SETUP 2 (plug&play software) DIP switch
Data Memory	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years
COMMUNICATION					
Interfaces	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires	Nr.1 RS485 2 wires; Nr.1 Micro USB
Speed	Up to 115,200 bps	Up to 115,200 bps	Up to 115,200 bps	Up to 115,200 bps	Up to 115,200 bps
Protocols	slave RTU ModBUS	slave RTU ModBUS	slave RTU ModBUS	slave RTU ModBUS	slave RTU ModBUS
Communication time	45..179 ms	< 20 ms (@38,400 bps)	45..179 ms	45..179 ms	< 10 ms (@38,400 ms)
Max distance	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m	Up to 1,200 m
Connectivity	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes	Max 32 nodes
INPUT / OUTPUT DATA					
Number of Channels	4 inputs	4 inputs	8 inputs	8 inputs	8 inputs
Type	RTD with 4 terminals (ohmmeter with 2,3,4 wires) Pt100: -200...+650°C (f.s. 330 Ω) Pt500: -200...+750°C (f.s. 1,800 Ω) Pt1000: -200...+210°C (f.s. 1,800 Ω) Ni100: -60...+250°C (f.s. 330 Ω)	Bipolar voltage ±160 mVdc, impedance 10 MΩ Thermocouple J, K, R, S, T, B, E, N	Thermocouple J, K, R, S, T, B, E, N (EN60584-1, ITS-90) Range between -210 and + 1820°C Span mV: -10.1..81.4 mV	Thermocouple J, K, R, S, T, B, E, N (EN60584-1, ITS-90) Range between -210 and + 1820°C Span mV: -10.1..81.4 mV	Generic NTC, user definable curve. Nominal values 1kΩ, 10kΩ, 50kΩ @ 25°C; Resistance from 100 Ohm to 10 kOhm; from 1 kOhm to 100 KOhm; from 5 kOhm to 500 kOhm.
Resolution	(11/13 bit on input range)	16 bit	Settable at 14/15 bit	16 bit	16 bit
Accuracy class	0.1%	0.1%	0.1%	0.1%	0.5%
Thermal drift	25 ppm/K	0.01%/°C c.d.m.	< 100 ppm/K	< 100 ppm/K	< 100 ppm/K
STANDARD					
Certifications	EC, UL-UR	EC	EC	EC	EC

The technical data and the diagrams in this document are indicative and not binding.

MODBUS MIXED I/O MODULES

	Z-SG	Z-SG2	Z-D-IO	Z-5DI-2DO	Z-4DI-2AI-2DO
					
	Converter module for load cell / RS485 RTU ModBUS	Converter module for load cell / RS485 RTU ModBUS with advanced functions	Mixed 6-CH inputs, 2 digital outputs, RS485 ModBUS RTU	Mixed 5-CH digital inputs, 2 digital outputs, RTU ModBUS RS485	Mixed 4-CH digital inputs, 2 analog inputs, 2 digital outputs / RTU ModBUS RS485
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Max power consumption	2 W	2 W	2.5 W	3.5 W	4 W
Isolation	30-way Vac 1,500	30-way Vac 1,500	1,500 Vac vs inputs 3,750 Vac vs outputs	1,500 Vac vs inputs 3,000 Vac vs outputs	1,500 Vac
Transducers power supply	Yes, 5Vdc/60mA, max 1 sensor	Yes, 5Vdc/60mA, max 1 sensor	-	-	Yes, 12V/(20)40mA, max 8 sensors
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperature	-10...+65 °C	-10...+65 °C	-10...+60 °C	-20...+60 °C	-25...+70 °C
Dimension	17.5x100x112 mm	17.5x100x112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	140 g approx.	140 g approx.	200 g approx.	140 g approx.	170 g approx.
Case	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 preloaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 30% glass fibre self-extinguishing class V0	Nylon 6 30% glass fibre self-extinguishing class V0	Glass loaded PA6 black plastic
Connections	Screw removable terminals for conductors up to 2.5 mm ² Rear connector IDC10 for DIN bar Front USB Micro Port (RS232 / COM)	Screw removable terminals for conductors up to 2.5 mm ² Rear connector IDC10 for DIN bar Front USB Micro Port (RS232 / COM)	Screw removable terminals for 2.5 mm ² conductors	Screw removable terminals for 2.5 mm ² conductors Front USB Micro Port (RS232 / COM) USB Micro (programming)	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar
Installation	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277	Guide 35 mm DIN 46277
Programming	System software (Z-NET4) Plug&play configurator (EASY SETUP 2) DIP switch	Plug&play configurator (EASY SETUP 2) DIP switch (baud rate and address only)	System software (Z-NET4) Plug&play configurator (EASY SETUP 2) DIP switch Logic IEC 1131-2 type 1 for motors control, valves, alarm	Plug&play configurator (EASY SETUP 2) DIP switch	System software (Z-NET4) Plug&play configurator (EASY SETUP 2) DIP switch
Basic functions	Cell calibration with software and sample weight; stable weighing via DO/Modbus register; tare remote writing; strain gauge powered by the instrument; ratiometric measurement	Cell calibration with software and sample weight; stable weighing via DO/Modbus register; tare remote writing; strain gauge powered by the instrument; ratiometric measurement	-	-	-
Advanced functions	-	Settable resolution, sampling frequency, alarm threshold; measurement stabilisable by noise filter; piece counter; min/max net weight values; tare reset	-	-	-
Data memory	EEPROM for configuration parameters, retention time 40 years	EEPROM for configuration parameters, retention time 40 years	EEPROM for configuration parameters, retention time 10 years	EEPROM for configuration parameters, retention time 10 years, N° 5 32-bit registers, N° 5 bit overflow, FeRAM for saving of counters	Flash 512 kB, FeRAM 64 kB (counters)
COMMUNICATION					
RS485	Nr. 1 RS485 2 wires, up to 115,200 bps, slave RTU ModBUS, communication time <10 ms (@ 38,400 ms), max distance 1,200 m, max RS485	-	Nr.1 RS485 2 wires, up to 115,200 bps, slave RTU ModBUS, communication time < 10 ms (@38,400 bps), max distance 1,200, max 32 nodes	Nr.1 RS485 2 wires, up to 115,200 bps, slave RTU ModBUS, communication time < 10 ms (@38,400 bps), max distance 1,200, max 64 nodes without repeater	Nr.1 RS485 2 wires, up to 115,200 bps, slave RTU ModBUS, communication time from 1 to 300 ms, max distance 1,200, max 32 nodes
USB				Nr.1 USB Micro	Nr. 1 USB 2.0 mini
INPUT / OUTPUT DATA					
Number of channels	1 AI 1DI/DO, 1 AO	1 AI 1DI/DO, 1 AO	6 DI, 2 DO	5 DI, 2 DO	4 DI, 2 AI, 2 DO
Type	Nr. 1 AI for reading (and powering) up to 4 (350 Ω) or 8 (1.000 Ω) load cells (4/6 wires) 1 DI/DO tare calibration or weight threshold (sensitivity from 1 to 64 mV/V) Nr. 1 AO (mA, V) for retransmission of the net weight	Nr. 1 AI for reading (and powering) up to 4 (350 Ω) or 8 (1.000 Ω) load cells (4/6 wires) 1 DI/DO tare calibration or weight threshold (sensitivity from 1 to 64 mV/V) Nr. 1 AO (mA, V) for retransmission of the net weight	Nr. 6 DI with common type Reedm Proximity, PNP, NPN, contact etc.; internal/external input power supply; min pulse width 20 ms Nr. 2 DO SPST relay with common, capacity 5A 250Vac, NO/NC contact	Nr. 5 DI Reed, Proximity, PNP, NPN, contact etc. Nr. 5 counters @32 bit, max freq. 5 kHz Nr. 2 DO SPST relay with common, fail-safe, range 2A 250Vac, NO/NC contact Freq. period measurement Ton/Toff on all inputs	Nr. 4 DI Reed, Proximity, PNP, NPN, contact etc. Nr. 4 counters @32 bit, max freq. 5 kHz Nr. 2 DO SPST relay with common, capacity 2A 250Vac, NO/NC contact Nr. 2 configurable AI (mA/V), accuracy 0.1%, resolution 16bit
STANDARD					
Certifications	EC	EC	EC	EC	EC

The technical data and the diagrams in this document are indicative and not binding.

MODBUS RTU / MODBUS TCP-IP I/O MODULES

	ZE-4DI-2AI-2DO	ZE-2AI
Modbus ETHERNET	 Mixed 4-CH digital inputs, 2 analog inputs, 2 digital outputs, RTU / TCP-IP ModBUS ModBUS	 2-CH voltage inputs - current / RS485 / Ethernet (TCP-IP ModBUS)
GENERAL DATA		
Power supply	11.40 Vdc; 19..28 Vac	10..40 Vdc / 19..28 Vac
Isolation	1,500 Vac	1.5 kVac
Protection degree	IP20	IP20
Operating temperature	-25..+70 °C	-25..+70 °C
Dimension	35x100x112 mm	17.5x100x112 mm
Weight	170 g approx.	140 g approx.
Connections	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar USB mini	Screw removable terminals for 2.5 mm ² conductors IDC10 rear connector for DIN bar USB mini
Installation	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277
Programming	EASY SETUP 2 (plug&play software) DIP switch (speed, address) Web Server	EASY SETUP 2 (plug&play software) DIP switch (speed, address) Web Server
Special functions	LAN TCP ModBUS Server	LAN TCP ModBUS Server
Data Memory	Flash 512 kB, FeRAM 64 kB (counters)	Flash 512 kB, FeRAM 64 kB (counters)
COMMUNICATION		
Interfaces	Nr. 1 Ethernet 10/100 Mbps Nr.2 RS485 Nr. 1 USB 2.0 mini	Nr.1 Ethernet 10/100 Mbps Nr. 2 RS485 Nr.1 USB 2.0 mini
Speed	Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP)	Up to 115.200 bps (RS485) / 100 Mbps (TCP-IP)
Protocols	MosBUS RTU, TCP-IP ModBUS, http	MosBUS RTU, TCP-IP ModBUS, http
INPUT DATA		
Number of Channels	6	2 inputs
Type	N°2 Analog Inputs 0-20 mA / 0-30 V (1-300 ms) No. 4 PNP / NPN Digital Inputs (also configurable as totalisers or counters @32 bit max 5 kHz); 16-bit resolution, 0.1% f.s.	N°2 Analog Inputs 0-20 mA / 0-30 V; resolution 16 bit (1-300 ms) sampling 0.1% f.s.
OUTPUT DATA		
Number of Channels	2	-
Type	Relay NA / NC max 5A	-
STANDARD		
Certifications	EC	EC

I/O ETHERNET

The Z-PC Line mixed I/O modules for high performance analog and digital signals support the TCP-IP ModBUS and RTU ModBUS communication protocols on the bus/terminal and an extended range for voltage input up to 30 V. These modules can use a 16-bit ADC converter with configurable acquisition speed from 5 to 300 ms. They also offer complete web server configurability compatible with browsers that support Html5. The R Line I/O modules are designed for flexible wiring requirements, reduced installation space, high I/O density applications and integrated Ethernet networking. In fact, they can be connected in daisy chain Ethernet mode with fault-bypass to ensure the Ethernet connection even in the event of a module failure in the chain and ensure the "ModBUS Passthrough" function, thanks to which the module can divert requests from Modbus TCP-IP acting, in fact, like a gateway.

MODBUS / CANOPEN DIGITAL I/O MODULES

	ZC-24DI	ZC-24DO	ZC-16DI-8DO
 	 24-CH digital inputs ModBUS/CANopen	 24-CH digital outputs ModBUS/CANopen	 16-CH digital inputs, 8 digital outputs ModBUS/ CANopen
GENERAL DATA			
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac
Max power consumption	2.5 W	2.5 W	2.5 W
Isolation	1.5 kVac (3-way)	1.5 kVac (3-way)	1.5 kVac (3-way)
Transducers power supply	Yes, 16V/70mA, max 24 sensors	-	Yes, 16V/70mA, max 16+8 sensors
Status indicators	Power supply Input Status Industrial	Power supply Output Status Industrial	Power supply Inputs / Outputs Status Industrial
Protection degree	IP20	IP20	IP20
Operating temperature	-20..+65 °C	-20..+65 °C	-10..+65 °C
Dimension	35 x 100 x 112 mm	35 x 100 x 112 mm	35 x 100 x 112 mm
Weight	170 g	170 g	170 g
Case	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing
Connections	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar USB Micro	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar USB Micro	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar USB Micro
Installation	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277
Programming	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)
Certifications	EC	EC	EC
COMMUNICATION			
Interfaces	RS485, RS232	RS485, RS232	RS485, RS232
Speed	1 Mbps (CANopen); 115.200 bps (ModBUS)	1 Mbps (CANopen); 115.200 bps (ModBUS)	1 Mbps (CANopen); 115.200 bps (ModBUS)
Protocols	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)
Communication time	2.5 ms	1.2 ms	1.2..2.5 ms
Special Functions	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching	CANopen/ModBUS protocol switching
INPUT / OUTPUT DATA			
Number of Channels	24 inputs (with 16 Vdc self-powered common negative)	24 outputs	16 inputs, 8 outputs
Type	No. 24 digital inputs with EN 61131-2 polarity type 2, synq (pnp); No. 8 counters @ 32 bit, max freq. 10 kHz; Configuration increment, reset, preset; Overflow indication; Vmax=30V; min pulse duration 250µs; on/off delay <3ms; TPDO < 1ms	Nr.24 Mosfet outputs (open source with common negative); supply voltage 5..30 Vc; I _{max} = 0.5A (from terminals) / 25 mA (from connectors); on/of delay <1ms; RPDO < 1.25 ms	Nr.16 digital inputs with EN 61131-2 polarity type 2, synq (pnp); Nr.8 counters @ 32 bit, max freq. 10 kHz; Configuration increment, reset, preset; Overflow indication; Vmax=30V; min pulse duration 250µs; on/off delay < 3ms; TPDO < 1ms Nr.8 Mosfet outputs (open source with common negative); supply voltage 5..30 Vc; I _{max} =0.5A (from terminals) / 25 mA (from connectors); on/of delay < 1ms; RPDO <1.25 ms

I/O
CANopen

CANopen Z-PC Line is a distributed I/O system actually based on IEC 61131 programming that does not require the use of couplers, controllers or repeaters for each communication line. All modules have a CAN communication interface with speeds of up to 1 Mbps and are therefore ideal for acquiring and controlling system signals on systems and machines where the distance between the signals plays a fundamental role.

The CANopen Z-PC Line modules can be integrated with third-party master/network configurators and controllers, even on existing machines and installations. The advantage of not needing an end-of-line coupler significantly reduces the cost factor for small to medium installations. The Z-PC CANopen line is a truly distributed I/O system based on IEC 61131 programming that does not require the use of couplers, controllers or repeaters for each communication line.

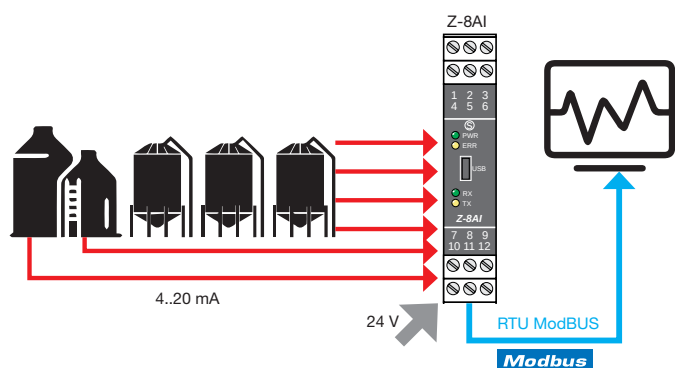
CANOPEN ANALOG I/O MODULES

	ZC-8AI	ZC-3AO	ZC-4RTD	ZC-8TC	ZC-SG
					
	8-CH analog input CANopen (mA, V)	3-CH analog outputs (mA, V) CANopen	4-CH inputs from CANopen thermo resistance	8-CH inputs from CANopen thermocouple	1-CH input for CANopen load cell
GENERAL DATA					
Power supply	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac	10..40 Vdc / 19..28 Vac (strain gauge powered from the instrument)
Max power consumption	5 W	2.5 W	1 W	1 W	2 W
Isolation	1.5 kVac (6 ways)	1.5 kVac (5 ways)	1.5 kVac (6 ways)	1.5 kVac (6 ways)	1.5 kVac (3 ways)
Inputs Protection	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV	Against ESD up to 4 kV
Transducers power supply	Yes, 16V/22mA, max 8 sensors	-	-	-	Yes, 5Vdc, max 8 sensors
Status indicators	Power supply Industrial Inputs Error	Power supply Industrial Outputs Error	Power supply Industrial Inputs Error	Power supply Industrial Inputs Error	Power supply Industrial Inputs Error
Protection degree	IP20	IP20	IP20	IP20	IP20
Operating temperature	-10..+65 °C	-10..+65 °C	-10..+65 °C	-10..+65 °C	-10..+65 °C
Dimension	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm	17.5 x 100 x 112 mm
Weight	170 g	170 g	170 g	170 g	170 g
Case	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing	Nylon 6 loaded 30% glass fibre, class V0 self-extinguishing
Connections	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar 3.5 mm stereo headphone jack for RS232 (COM)	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar 3.5 mm stereo headphone jack for RS232 (COM)	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar 3.5 mm stereo headphone jack for RS232 (COM)	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar 3.5 mm stereo headphone jack for RS232 (COM)	Detachable 4-way screw terminals, 3.5 mm pitch IDC10 rear connector for DIN bar 3.5 mm stereo headphone jack for RS232 (COM)
Installation	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277	For rail 35 mm DIN 46277
Programming	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)	DIP switch, Z-NET4, EASY SETUP 2, EDS, Codesys (IEC 61131)
Certifications	EC	EC	EC	EC	EC
COMMUNICATION					
Interfaces	RS485, RS232	RS485, RS232	RS485, RS232	RS485, RS232	RS485, RS232
Speed	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)	1Mbps (CANopen)
Protocols	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)	CAN bus standard (2.0A, 2.0B); CANopen (profile CiA 401 v.2.01); RTU ModBUS (via RS485)
Communication time	< 28 ms	< 7 ms	< 28 ms	< 28 ms	< 7 ms
INPUT / OUTPUT DATA					
Number of Channels	8 outputs (torque isolators)	3 outputs	4 isolated RTD inputs, 2, 3, 4 wire measurement	8 inputs (thermocouple or mV measurement)	1 analog input, 1 digital input/1 digital output
Type	Voltage (0-10 V); current (0-20 mA)	Voltage ($\pm$ 10 V); Current (0-20, 4-20 mA)	PT100 (EN 60751/A2-ITS90), -200..+650 °C PT500 (EN 60751/A2-ITS90), -200..+750 °C PT1000 (EN 60751/A2-ITS90), -200..+210 °C Ni100 (EN 60751/A2-ITS90), -60..+250 °C	Thermocouple: J,K,E,N,S,R,B,T; EN - 60584-1 (ITS-90) Span mV: -10.1 mV..+81.4 mV Input impedance: 10 M Ω	ANALOGICAL INPUT Differential measurement with 4 / 6 wires ($\pm$ 5 mV.. $\pm$ 320 mV) Load cells (strain gauge) Power voltage 5 Vdc; impedance min 87 equivalent; sensitivity from $\pm$ 1mV/V to $\pm$ 64 mV/V DIGITAL INPUT Calibration tare and span (max 30 V) 1 opto-isolated digital output for stable or threshold weighing (max current 50 mA, max voltage 30 V)
Resolution	15 bit	14 bit	14 bit	15 bit	24 bit
Accuracy class	0.05%	0.01%	0.05%	0.1%	0.01%
Thermal drift	<100 ppm/°C	<100 ppm/°C	<50 ppm/°C	<100 ppm/°C	<25 ppm/°C

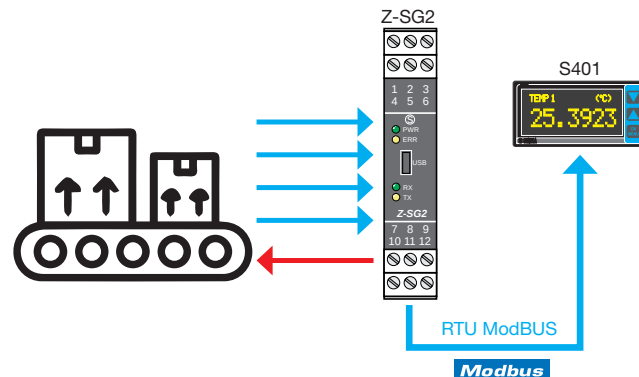
The technical data and the diagrams in this document are indicative and not binding.

I/O MODULES - APPLICATION DIAGRAMS

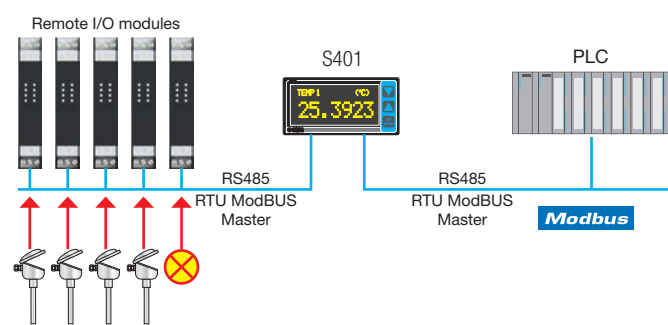
ACQUISITION OF PROCESS MEASUREMENTS AND RETRANSMISSION VIA RTU MODBUS



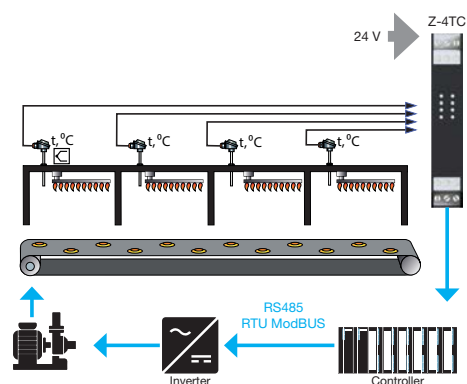
MODBUS ACQUISITION AND DISPLAY FOR WEIGHING SYSTEMS



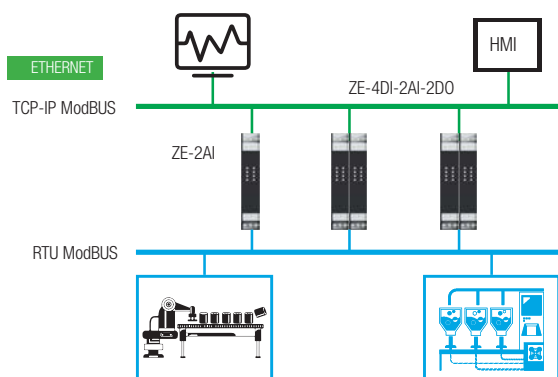
LOCAL CONTROL VIA PLC AND REMOTE I/O



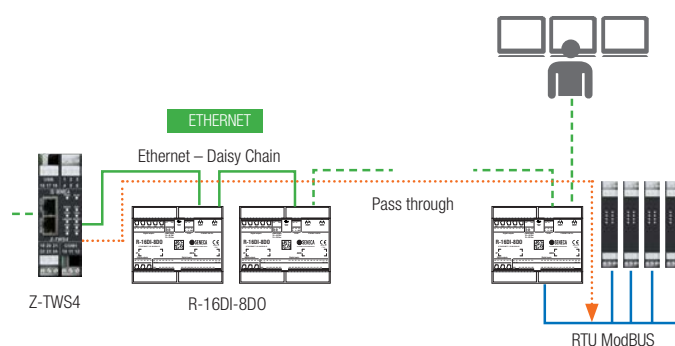
ACQUISITION AND TRANSMISSION OF TEMPERATURES TO A CLOSED CHAIN CONTROL SYSTEM



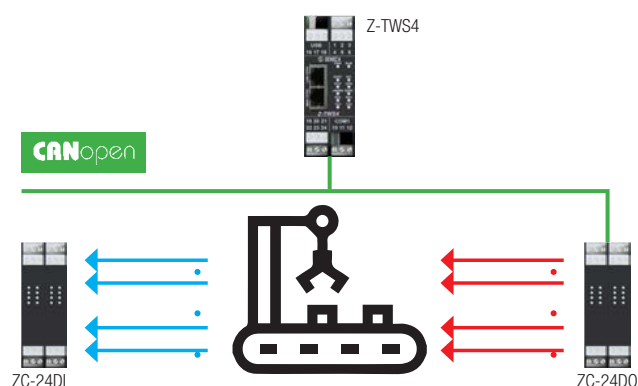
DATA ACQUISITION ON ETHERNET



ETHERNET DAISY CHAIN AND MODBUS PASS-THROUGH CONNECTION



PROGRAMMABLE MANIPULATION SYSTEM



AUTOMATIC BOTTLING SYSTEM

