

MINIMASTER Analogue Input Module for CANopen IL 5508

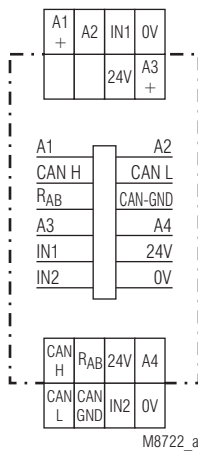


- According to IEC/EN 61 131-2
- CANopen interface according to DS301 version 3.0, DS401
- 2 analogue inputs with each 2 x 0 ... 10 V, 2 x 0 ... 20 mA or 2 x Pt 100 (- 50 ... 300°C)
- Galvanic separation between inputs, bus and auxiliary supply
- LED indicators for supply voltage and Bus status
- 35 mm width

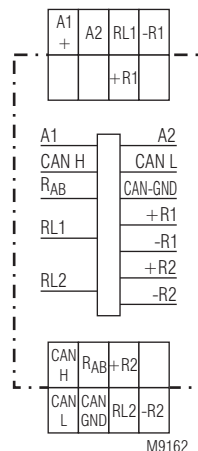
Approvals and Markings



Circuit Diagrams



IL 5508.90/100
IL 5508.90/110



IL 5508.90/122

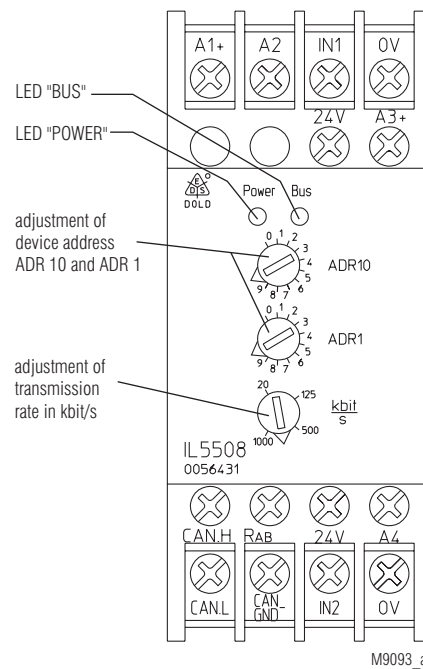
Application

The analog input module IL 5508 collects signals of a control circuit from limit switches, push buttons, sensors etc. The module is used in industrial control circuits and building automation.

Indicators

yellow LED "Power": on, when supply connected
yellow LED "BUS": on, when bus is active, pulsing when bus is inactive

Setting and Adjustment



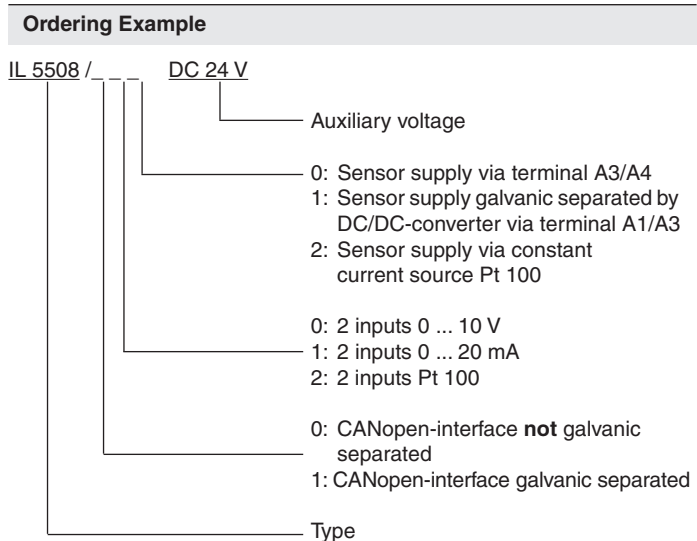
The configuration is made with the programming software PN 5501 in conjunction with minimaster IL 5504 / IN 5504 or e.g. with ProCANopen. The corresponding configuration file on CD can be ordered under order no. PN 5501, article no. 0052860

Set-up Procedure

1. Connect device to CANopen-bus
2. The CANopen bus cable has to be terminated with a 120 Ω resistor on both ends (on DOLD devices this can be done by linking the terminals CAN-H and R_{AB})
3. Adjust transmission speed (e. g. 20 k bit / s)
4. Adjust device addresses
5. Configure bus, e.g. with ProCANopen

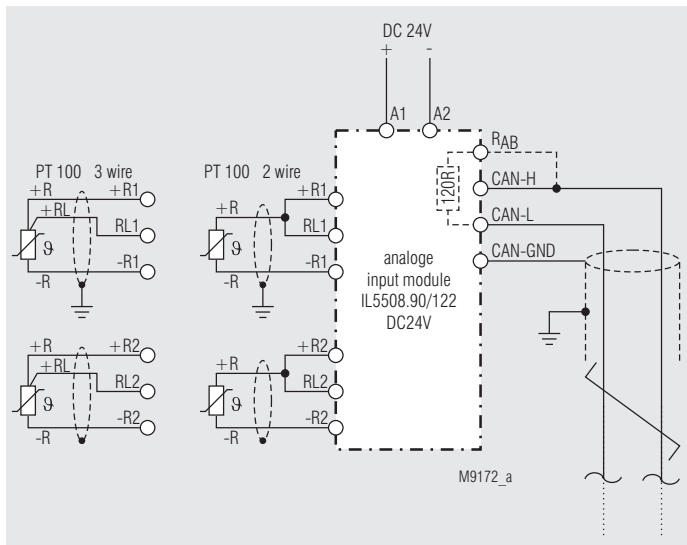
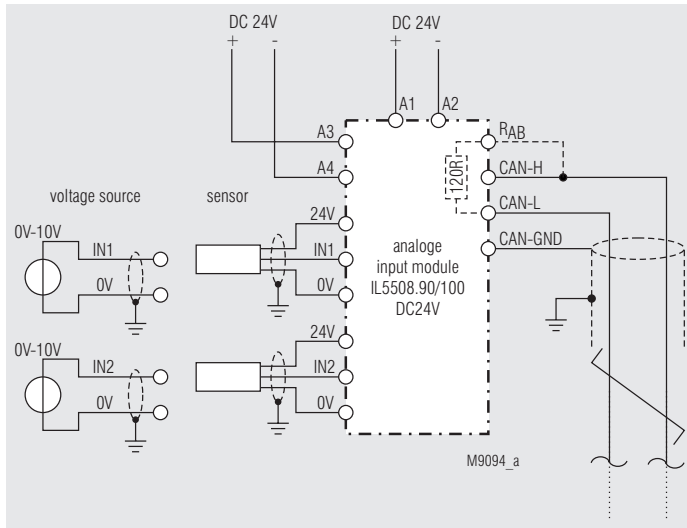
Technical Data	
Auxiliary voltage	
Auxiliary voltage U_H A1/A2:	DC 24 V
Voltage range:	0.85 ... 1.2 U _N
Nominal consumption:	< 2 W at DC 24 V
Sensor supply	
Variant / _ _ 0:	Sensor supply via terminal A3 (+) and A4, DC 24 V
Variant / _ _ 1:	Sensor supply internally from A1 (+) and A2 via galvanic separated DC/DC-converter, max. 24 V / 35 mA-channel
Input	
Inputs	2, single endet galvanic separated to bus and auxiliary supply
Galvanic separation:	AC 350 V _{eff}
Input voltage:	0 ... 10 V
Input current:	0 ... 20 mA
Thermal resistance	
Pt 100:	- 50 ... 300°C
Input impedance:	> 100 kΩ for 0 ... 10 V 82 Ω for 0 ... 20 mA
Measuring current	
Pt 100:	1.13 mA
Connection:	2-wire screened for 0 ... 10 V / 0 ... 20 mA 3-wire screened for Pt 100
Common mode voltage:	50 V max.
Resolution:	12 bit
Converting:	successive approximation
Measuring error:	< ± 0.25 % of end of scale value for 0 ... 10 V; 0 ... 20 mA
Pt 100:	< ± 1 % of end of scale value
Quantisation:	2.5 mV 5 µA 0.1°C
Measuring principle:	integrating (mean value)
CANopen interface	
IL 5508.90/1 _ _:	galvanic separation according to ISO 11 898-1
Wire:	screened twisted pair
Transmission speed:	adjustable 20 k bit/s, 125 k bit/s, 500 k bit/s, 1 M bit/s,
max. Bus length:	20 k bit/s = 2.500 m 125 k bit/s = 500 m 500 k bit/s = 90 m 1 M bit /s = 15 m
General Data	
Operating mode:	Continuous operation
Temperature range:	- 20 ... + 60°C
EMC	
Electrostatic discharge:	8 kV (air) IEC/EN 61 131-2
HF-irradiation:	10 V IEC/EN 61 000-4-6
Fast transients	
wires for power supply:	2 kV IEC/EN 61 131-2
Fast transients	
analogue input:	0.25 kV IEC/EN 61 131-2
Interference suppression:	Limit value class B EN 55 011
Degree of protection	
Housing:	IP 40 IEC/EN 60 529
Terminals:	IP 20 IEC/EN 60 529
Housing:	Thermoplastic with V0-behaviour according to UL subject 94
Mech. operating conditions:	EN 61 131-2
Climate resistance:	EN 61 131-2
Terminal designation:	EN 50 005
Wire connection:	2 x 2.5 mm ² solid or 2 x 1.5 mm ² stranded wire with sleeve DIN 46 228-1/-2/-3/-4
Wire fixing:	Flat terminals with self-lifting clamping peace IEC/EN 60 999-1
Mounting:	DIN rail IEC/EN 60 715
Weight:	110 g
Dimensions	
Width x height x depth:	30 x 90 x 61 mm

Standard Types	
IL 5508.90/100 DC 24 V	
Article number:	0056431
• 2 analoge inputs	0 ... 10 V
• Nominal voltage U _N :	DC 24 V
• Sensor supply:	on terminal A3 / A4
IL 5508.90/110 DC 24 V	
Article number:	0056807
• 2 analoge inputs	0 ... 20 mA
• Nominal voltage U _N :	DC 24 V
• Sensor supply:	on terminal A3 / A4
IL 5508.90/122 DC 24 V	
Article number:	0056957
• 2 analoge inputs	Pt 100 - 50 ... 300°C
• Nominal voltage U _N :	DC 24 V
• Sensor supply:	constant current source 1.13 mA



Accessories
• CANopen PLC IL 5504 • Input / Output Module IN 5509 • Input Module, Digital IP 5502 • Output Module, Digital IP 5503 • Input Module, Analogue IL 5508 • Output Module, Analogue IL 5507

Application Examples



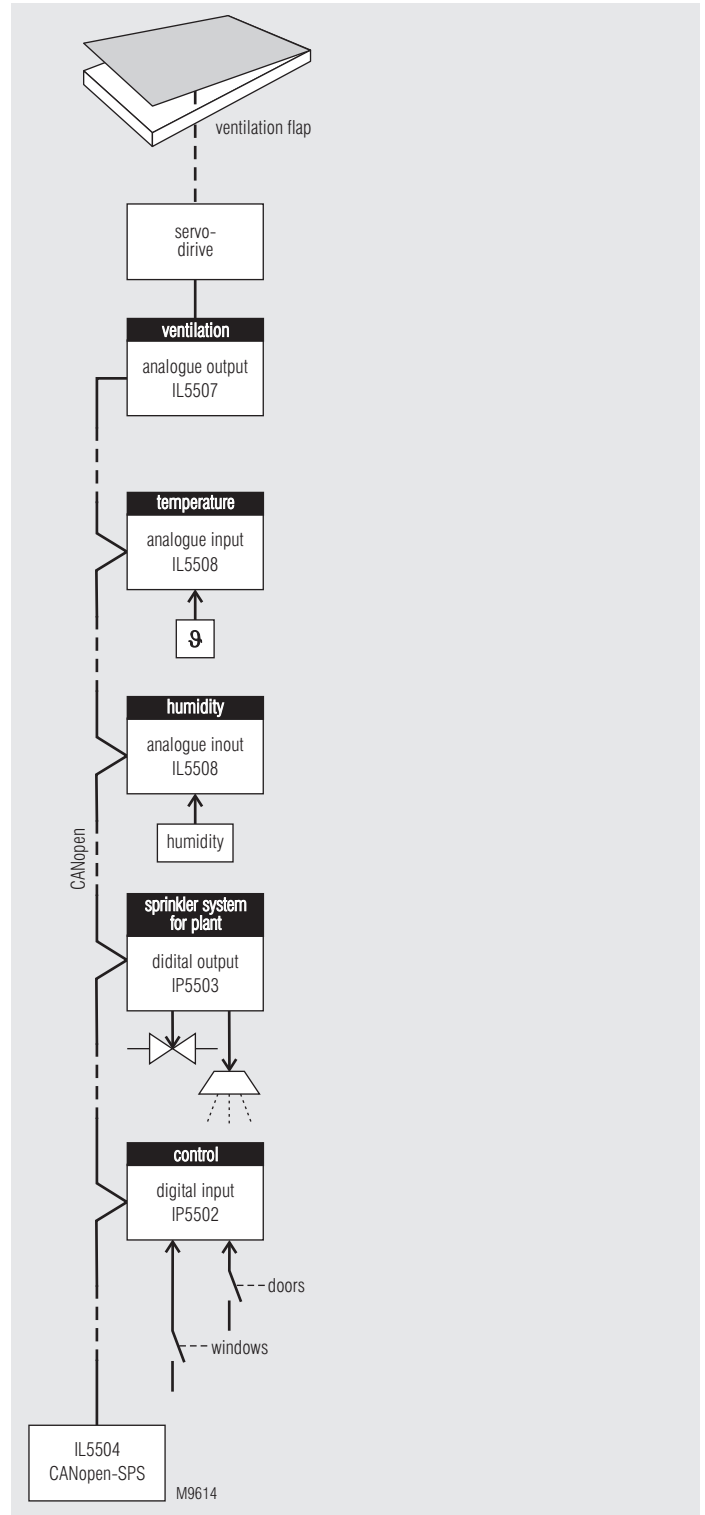
CAN-signals

CAN-H:	CAN_H bus line (dominant high)
CAN-L:	CAN_L bus line (dominant high)
R_{AB} :	Termination resistor 120 Ω
CAN-GND:	reference potential of CAN-transceiver

Notes for wiring

- Mixed networks, or networks that are not galvanically separated
 - CAN-GND is connected between all devices (CIA DRP 303-1).
 - if no 3rd wire is available in the bus cable, the screen of the cable can be used. In this case the screen has to be connected to PE at one point.
- Galvanic separated networks
 - if the networks are completely separated CAN-GND must not be wired (CIA DRP 303-1). The screen is connected to PE.
- An equalisation of potentials between units in far distance has to be provided.
- The CAN-bus must be terminated at the first and last device on the bus with a 120 Ω resistor, e.g. insert a link on terminals R_{AB} and CAN-H.
- Analogue signal wires must be screened. the screen has to be connected to ground near to the input module.
- To achieve proper function, the DIN rail must have a good connection to ground.

Application Example



CANopen-application for greenhouses: dependend on temperature- and humidity ventilation flap applications and sprinkler systems for plants in a greenhouse.

