

MINIMASTER CANopen PLC IL 5504

CANopen

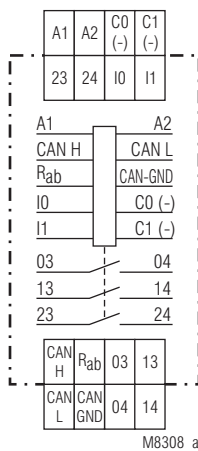


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Circuit Diagram



IL 5504

Your Advantages

- Compact CAN-operation
- Graphical programming
- Qquick and easy installation
- Various input- / output module digital / analogue available

Features

- According to IEC/EN 61 131-2, EN 50 178
- Operation as master
 - Operation as slave
 - Transfer rate up to 1 Mb/s
 - Interface according to DS301 version 3.0
- 2 digital inputs for DC 24 V
- 2 relay outputs
- LED indicators
- Standard programming software CODESYS® under Windows according to IEC/EN 61131-3:
 - Instruction set
 - Ladder diagram
 - Function block diagram
 - Sequential function chart
 - Structured text (similar to Pascal)
- 128 KB Flash memory for user program
- 128 KB RAM for user data
- 16 KB battery buffered RAM for no-voltage safe data
- Battery buffered real time clock
- Monitoring contact for RUN status of the PLC
- Width: 35 mm

Additional Information

- Data sheet Input Module IP 5502
- Data sheet Output Module IP 5503
- Data sheet Emergency Stop Monitor BH 5922
- Data sheet Analogue Output Module IL 5507
- Data sheet Analogue Input Module IL 5508
- Data sheet Input- / Output Module IN 5509

Approvals and Markings



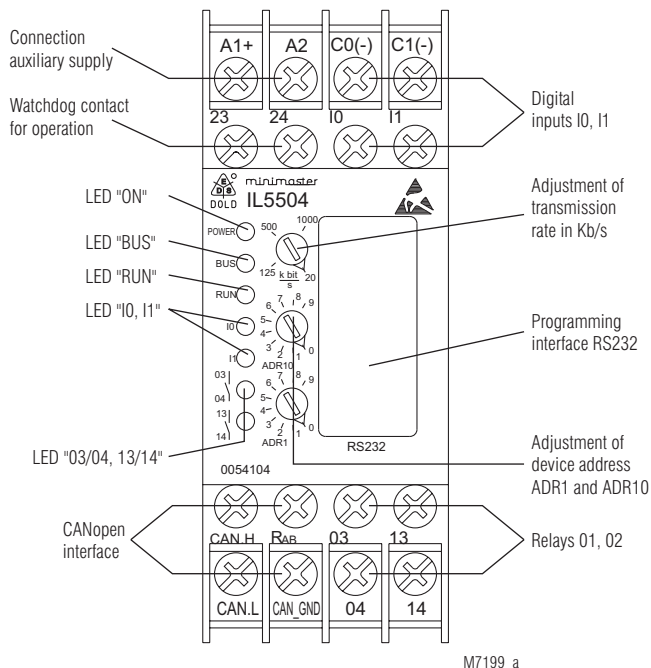
Application

The PLC runs a user program edited with the programming software PN 5501. The program can process local I/Os on the PLC as well as remote I/Os via the CANopen bus.

Indicators

green LED „ON“:	on, when supply connected
yellow LED „BUS“:	on, when bus is active
yellow LED „RUN“:	on, when PLC in RUN state flashing, when failure
green LED „I0, I1“:	on, when corresponding input is active (I0/C0-, I1/C1-)
red LED „O1, O2“:	on, when corresponding output relay is active (O3/O4, 13/14)

Setting and Adjustment



IL 5504

Adjustment of address:

To allow communication on the CANopen-Bus the device address has to be set with the 2 rotational switches between 1 ... 99.

Set-up Procedure:

- 1.) Connect device to CANopen-bus
- 2.) Terminate bus on both ends with bridge between CAN-H and R_{ab}
- 3.) Adjust transmission speed
- 4.) Set knot address
- 5.) Transmit program from PC to PLC IL 5504 with programming software and store it.

Technical Data

Auxiliary voltage

Auxiliary voltage U_H A1/A2: DC 24 V
Voltage range: 0.8 ... 1.1 U_N
Nominal consumption: 1.4 W

Input

Inputs: 2 digital inputs according to IEC/EN 61131-2 galvanic separated by optocouplers
Input voltage: DC 24 V
Signalverzögerung: approx. 2 ms

Output

Contacts: 2 relay outputs
 1 monitoring contact 23-24
 2 A

Thermal current I_{th}: Switching capacity

to AC 15: 3 A / AC 230 V IEC/EN 60 947-5-1
Switching capacity: at DC 24 V: 48 W
 at AC 230 V: 460 VA

Short circuit strength

max. fuse rating: 4 A gG / gL IEC/EN 60 947-5-1

Mechanical life: > 10⁶ switching cycles

Programming interface RS232

Wire: Null Modem wire link

Transmission parameter: 57.6 KBAud, 8N1

The auxiliary voltage U_H is not galvanically separated from the programming interface.

CANopen interface

Wire: screened twisted pair
Transmission speed: adjustable 20 Kb/s, 125 Kb/s, 500 Kb/s, 1 Mb/s,

Attention:



Both ends of the 2-wire bus have to be terminated with a bridge between CAN_H and R_{ab}. The auxiliary voltage U_H is not galvanically separated from the CANopen interface.

General Data

Buffer for RAM and Realtime

clock: 3 years
Cycle time: approx. 10 ms + (0.4 ms per translated 1 Kb user program)

Immunity against phase

failure: 20 ms
Operating mode: Continuous operation
Temperature range: - 20 ... + 60°C

Clearance and creepage distances

overvoltage category /
 pollution degree

auxiliary voltage,
 CANopen interface to
 digital inputs: 1.5 kV / 2 IEC 60 664-1

digital inputs to
 digital inputs: 1.5 kV / 2 IEC 60 664-1

auxiliary voltage,
 CANopen interface to
 relay outputs: 4 kV / 2 IEC 60 664-1

relay outputs to relay
 outputs: 4 kV / 2 IEC 60 664-1

EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61 000-4-2

HF-irradiation: 10 V/m IEC/EN 61 000-4-3

Fast transients: 2 kV IEC/EN 61 000-4-4

Surge voltages

between

wires for power supply: 1 kV IEC/EN 61 000-4-5

Interference suppression: Limit value class B EN 55 011

Degree of protection

Housing: IP 30 IEC/EN 60 529

Terminals: IP 20 IEC/EN 60 529

Technical Data	
Housing:	Thermoplastic with V0-behaviour according to UL subject 94
Vibration resistance:	amplitude 0.35 mm frequency 10 ... 55 Hz, IEC/EN 60 068-2-6
Climate resistance:	20 / 060 / 04 IEC/EN 60 068-1
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 piece IEC/EN 60 999-1
Mounting:	DIN rail IEC/EN 60 715
Weight:	150 g

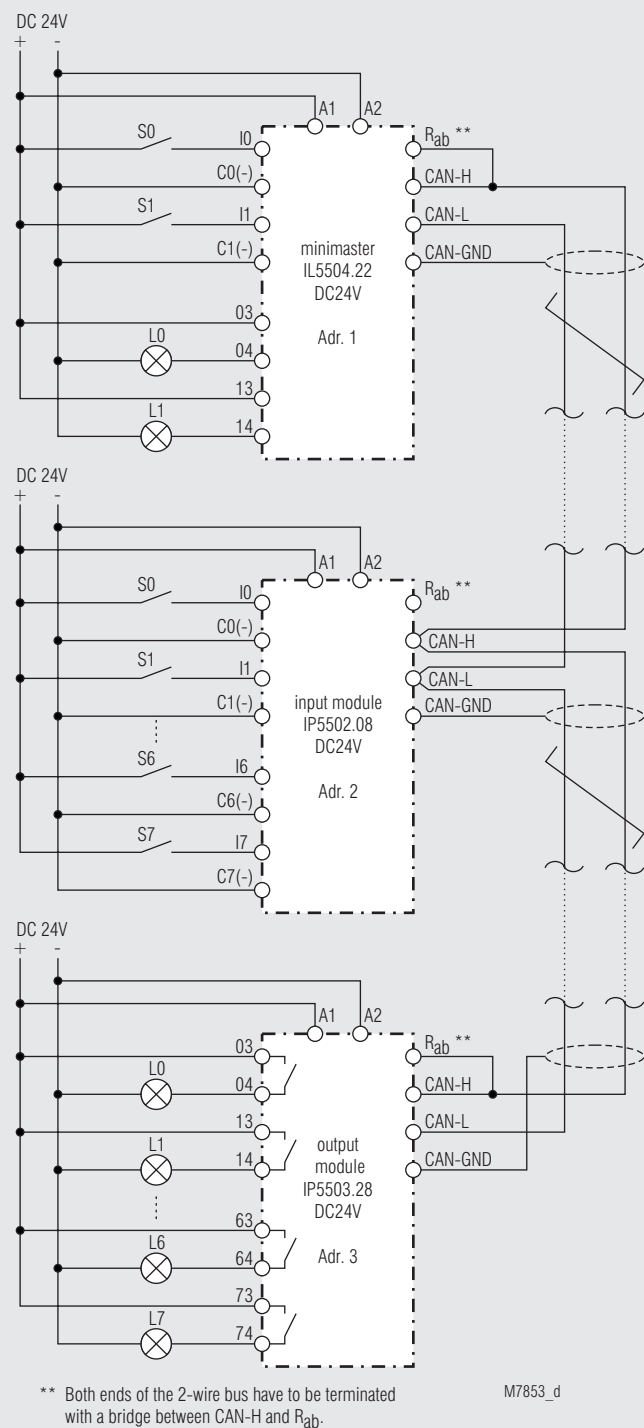
Dimensions

Width x height x depth: 35 x 90 x 58 mm

Standard Type	
IL 5504.22 DC 24 V	
Article number:	0054104
• 2 relay outputs • 1 monitoring contact • 2 digital inputs DC 24 V • CANopen interface • Auxiliary supply U_H: • Width:	
	DC 24 V 35 mm

Accessories	
PN 5501:	Programming software Article number: 0052860
OA 5529/180:	Programming cable Article number: 0054950
IP 5502.08:	CANopen module with 8 binary inputs DC 24 V Article number: 0050911
IP 5503.28:	CANopen module with 8 relay outputs Article number: 0050912
IN 5509.23:	CANopen in- / output module with 4 binary inputs DC 24 V und 4 relay outputs Article number: 0055929
IL 5507.90/100:	Analogue output modul; 0 ... 10 V; DC 24 V Article number: 0060372
IL 5507.90/110:	Analogue output modul; 0 ... 20 V; DC 24 V Article number: 0060373
IL 5508.90/100:	CANopen module with 2 analogue inputs 0 ... 10 V Article number: 0056431
IL 5508.90/110:	CANopen module with 2 analogue inputs 0 ... 20 mA Article number: 0056807
IL 5508.90/121:	CANopen module with 2 analogue inputs, PT100 Article number: 0056957
IL 5504:	CANopen PLC

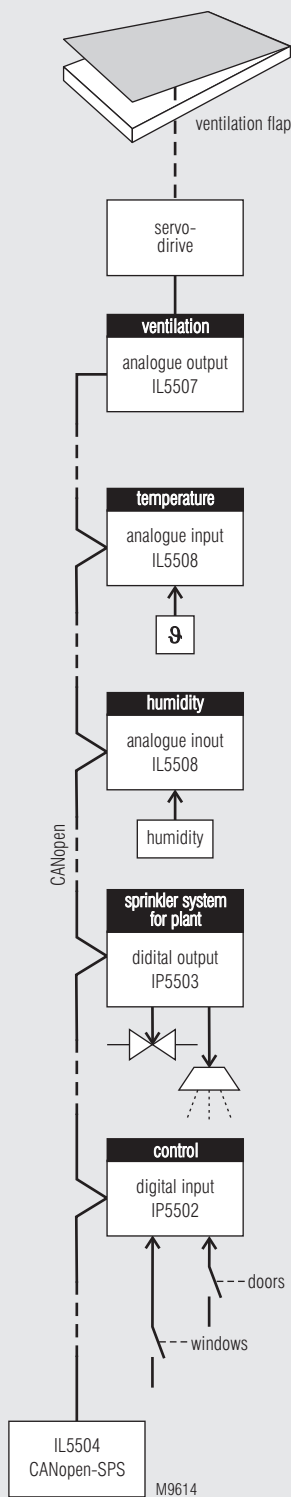
Application Example IL 5504



** Both ends of the 2-wire bus have to be terminated with a bridge between CAN-H and R_{ab}.

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Application Example



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