

IL 5504

IN 5504

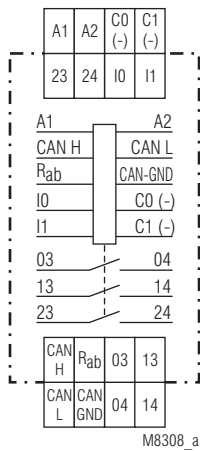
### Your Advantages

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

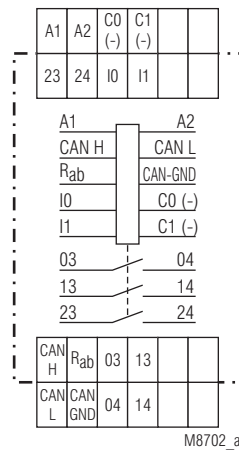
### Features

- 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
- IN 5504 locally extendable with digital and analogue in- / output modules
- 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
- IL 5504: 35 mm width
- IN 5504: 52.5 mm width

### Circuit Diagrams



IL 5504



IN 5504

### Additional Information

- Data sheet Input Module IP 5502
- Data sheet Output Module IP 5503
- Data sheet Emergency Stop Monitor BH 5922
- Data sheet Power Supply IR 5592
- Data sheet Analogue Output Module IL 5507
- Data sheet Analogue Input Module IL 5508
- Data sheet Input- / Output Module IN 5509

### Approvals and Markings

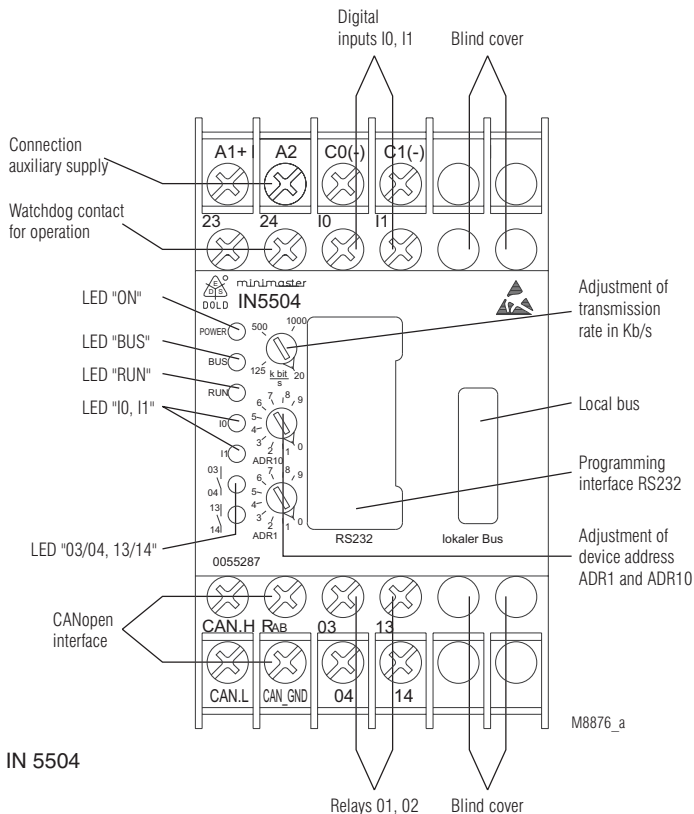
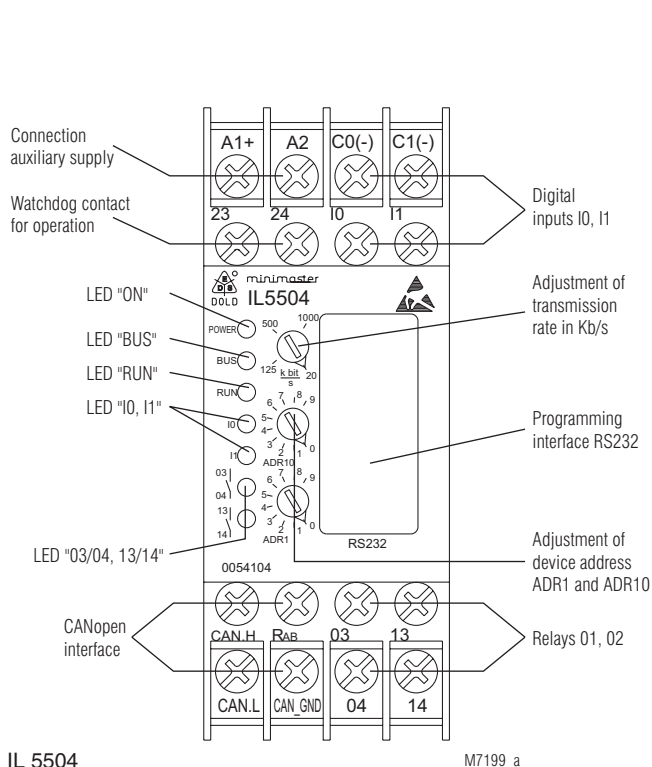


### Application

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<br>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) |



**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<sub>ab</sub>
- 3.) Adjust transmission speed
- 4.) Set knot address
- 5.) Transmit program form PC to PLC IL 5504 with programming software and store it.

**Technical Data**

**Auxiliary voltage**

**Auxiliary voltage U<sub>H</sub> A1/A2:** DC 24 V  
**Voltage range:** 0.8 ... 1.1 U<sub>N</sub>  
**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:** IL 5504.22: 2 relay outputs  
 1 monitoring contact 23-24  
**Thermal current I<sub>th</sub>:** 2 A  
**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 AgL IEC/EN 60 947-5-1  
**Mechanical life:** > 10<sup>6</sup> switching cycles


**Technical Data**

**Programming interface RS232**

**Wire:** Null Modem wire link  
**Transmission parameter:** 57.6 KBaud, 8N1  
 The auxiliary voltage U<sub>H</sub> 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<sub>ab</sub>. The auxiliary voltage U<sub>H</sub> 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

Technical Data		
<b>EMC</b>		
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
<b>Degree of protection</b>		
Housing:	IP 30	IEC/EN 60 529
Terminals:	IP 20	IEC/EN 60 529
<b>Housing:</b> Thermoplastic with V0-behaviour according to UL subject 94		
<b>Vibration resistance:</b> amplitude 0.35 mm frequency 10 ... 55 Hz, IEC/EN 60 068-2-6		
<b>Climate resistance:</b> 20 / 060 / 04 IEC/EN 60 068-1		
<b>Terminal designation:</b> EN 50 005		
<b>Wire connection:</b> 2 x 2.5 mm <sup>2</sup> solid or 2 x 1.5 mm <sup>2</sup> stranded wire with sleeve DIN 46 228-1/-2/-3/-4		
<b>Wire fixing:</b> Flat terminals with self-lifting clamping piece IEC/EN 60 999-1		
<b>Mounting:</b> DIN rail IEC/EN 60 715		
<b>Weight:</b> 150 g		

#### Dimensions

##### Width x height x depth:

IL 5504:	35 x 90 x 58 mm
IN 5504:	52.5 x 90 x 58 mm

#### Standard Types

##### 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<sub>H</sub>:
- Width:

DC 24 V  
35 mm

##### IN 5504.22 DC 24 V

Article number: 0055287

- 2 relay outputs
- 1 monitoring contact
- 2 digital inputs DC 24 V
- CANopen interface
- Auxiliary supply U<sub>H</sub>:
- Width:

DC 24 V  
52.5 mm

#### Accessories

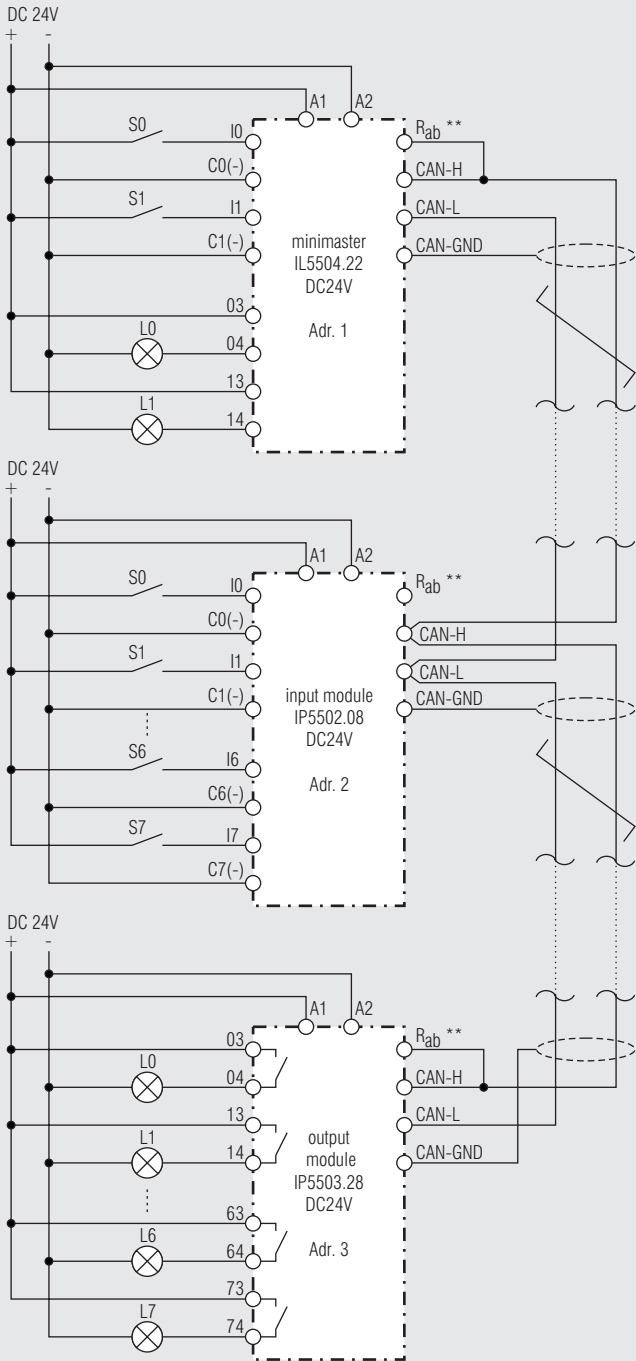
PN 5501:	Programming software Article number: 0052860
OA 5529/180:	Programming cable Article number: 0054950
IP 5502.08:	CANopen module with 8 binary inputs DC 24 V Article number: 0050911
IP 5503.28:	CANopen module with 8 relay outputs Article number: 0050912
IN 5509.23:	CANopen in- / output module 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
IR 5592:	Power supply for PLC and modules Article number: 0041650
IL 5504:	CANopen PLC

#### Accessories

Extension modules for extension bus of IN 5504

Module type	Type	Article no.	Configuration
Input module	IP 5513.25	0041124	8E DC 24 V
Output module	IP 5513.29	0041128	8A relays
Input module	IL 5513.24	0041121	4E DC 24 V
Output module	IL 5513.28	0041127	4A relays

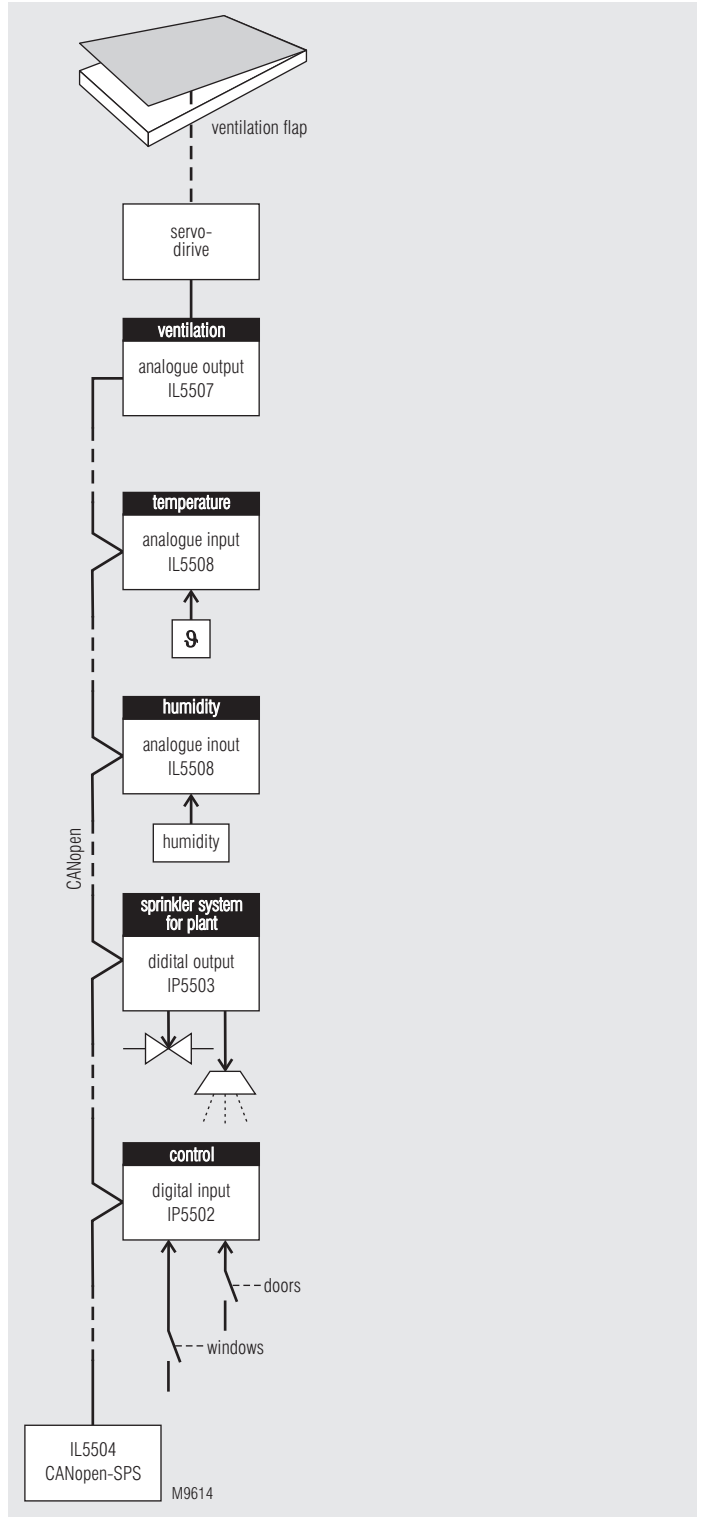
### Application Example IL 5504



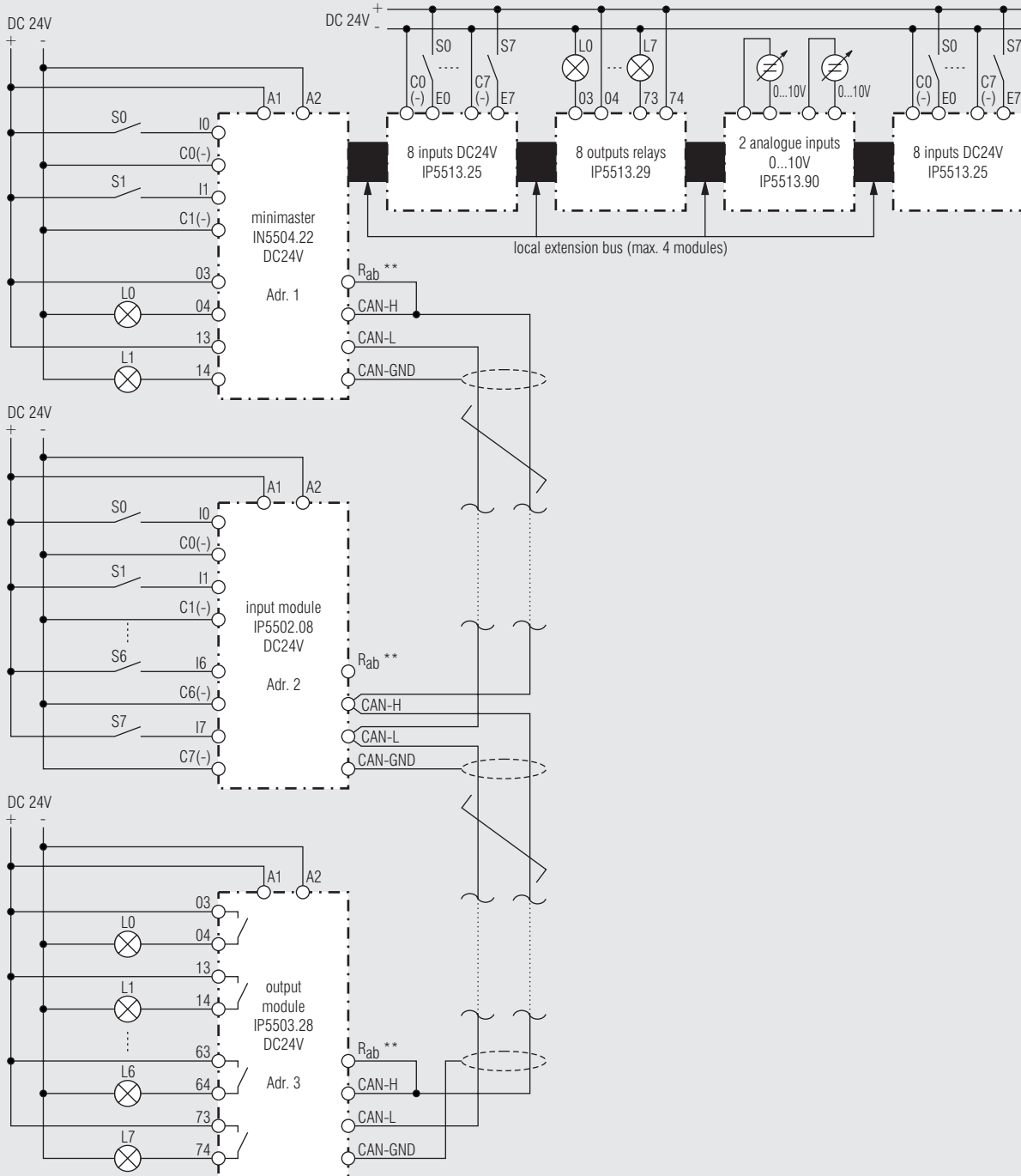
\*\* Both ends of the 2-wire bus have to be terminated with a bridge between CAN-H and R<sub>ab</sub>.

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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.



\*\* Both ends of the 2-wire bus have to be terminated with a bridge between CAN-H and R<sub>ab</sub>.

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