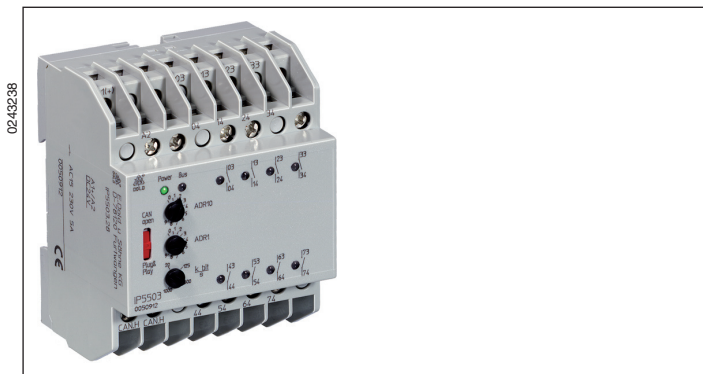
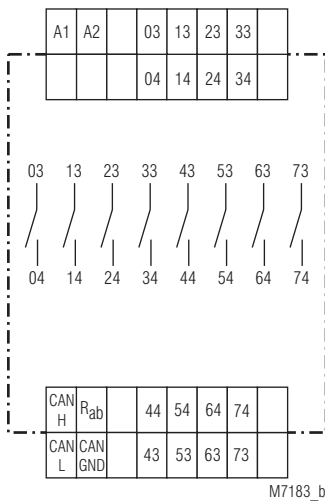


**MINIMASTER**  
Output Module for CANopen  
IP 5503



- According to IEC/EN 61131-2, IEC/EN 50178
- CANopen interface according to DS301 version 3.0 (Plug and Play selectable), as option with galvanic separation
- 8 relay outputs
- LED indicators for supply voltage, Bus status and state of contact
- 70 mm width

**Circuit Diagram**



M7183\_b

IP 5503.28

**Additional Information**

- Datasheet Input Module IP 5502
- Datasheet Emergency Off Monitor BH 5922
- Datasheet MINIMASTER IL 5504, IN 5504
- Datasheet Power Supply IR 5592
- Datasheet Analogue Input Module IL 5508
- Datasheet Analogue Output Module IL 5507

**Approvals and Markings**



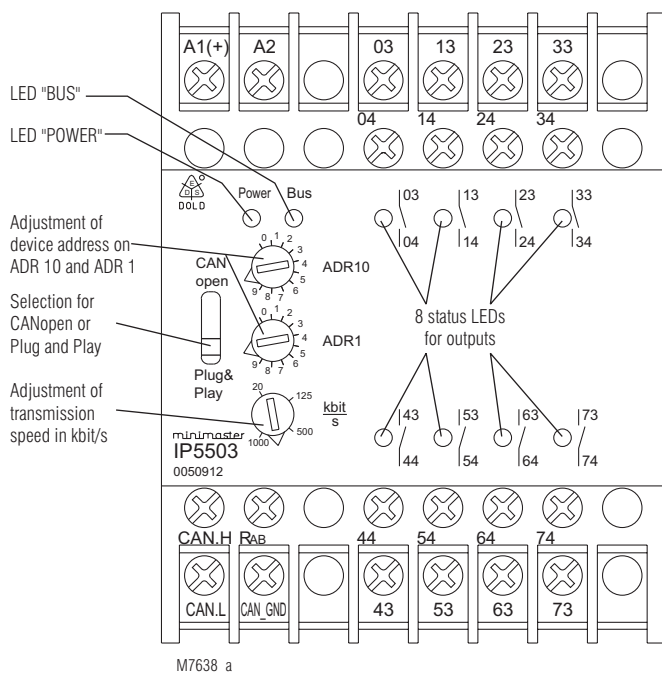
**Application**

The digital output module actuates signals in control circuits. The modul 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
- Red LEDs: On, when output relay is active (8 LEDs)

**Setting and Adjustment**



M7638\_a

**CANopen operation**

With switch in position "CANopen" the CAN bus runs the CANopen protocol. 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

**Plug and Play operation**

With switch in position "Plug and Play" the CANopen bus runs a variant for the CANopen protocol and allows only to operate Dold modules that have this feature. If a system is configured in Plug and Play operation, it can be altered to CANopen at any time.

**Address setting in Plug and Play mode**

To allow the input module to communicate via CAN bus with a corresponding device, the address has to be adjusted on the 2 rotational devices on the front see below: The addresses 1 ... 49 and 51 ... 99 can be chosen. In Plug and Play mode the addresses 0 and 50 do not exist.

Input module IP 5502 with address	transmits to	Output module IP 5503 with address
1	→	51
.		.
49	→	99

Example of setting:  
Upper rotational switch "ADR 10": address 14  
Lower rotational switch "ADR 1": in position 1  
in position 4

## Setting and Adjustment

### 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> on first and last module.
- 3.) Adjust transmission speed (e. g. 20 K bit / s)
- 4.) Adjust device addresses

### Attention:



To allow transmission in Plug and Play mode, one of the input modules e.g. IP 5502 of the CAN-bus has to be set to address 1.

## 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:** 0,5 W

### Output

#### Contacts:

IP 5503.28: 8 NO contacts IEC/EN 61131-2  
**Thermal current I<sub>th</sub>:** 2 A

#### Switching capacity

To AC 15: 3 A / AC 230 V IEC/EN 60947-5-1  
**Switching capacity:**  
At DC 24 V: 48 W  
At AC 230 V: 460 VA

#### Short circuit strength

**max. fuse rating:** 4 AgL IEC/EN 60947-5-1  
**Mechanical life:** > 10<sup>8</sup> switching cycles

#### CANopen interface

IP 5503.28/100: Galvanic separation according to ISO 11898-1

Wire : Screened twisted pair  
Transmission speed: Adjustable 20 K bit/s, 125 K bit/s, 500 K bit/s, 1 M bit/s,

Max. length:  
20 K bit/s = 2.500 m  
125 K bit/s = 500 m  
500 K bit/s = 100 m  
1 M bit /s = 25 m

#### Plug and Play

Transmission speed: 20 K bit / s (recommended)

### Attention:



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

**Operating mode:** Continuous operation

**Temperature range:** - 20 ... + 60°C

#### Clearance and creepage distances

Rated impulse voltage / pollution degree: 4 kV / 2 IEC 60664-1

#### EMC

Electrostatic discharge: 8 kV (air) IEC/EN 61000-4-2

HF-irradiation: 10 V/m IEC/EN 61000-4-3

Fast transients: 2 kV IEC/EN 61000-4-4

Surge voltages between

Wires for power supply: 1 kV IEC/EN 61000-4-5

Between wire and ground: 2 kV IEC/EN 61000-4-5

Interference suppression: Limit value class B EN 55011

#### Degree of protection

Housing: IP 40 IEC/EN 60529

Terminals: IP 20 IEC/EN 60529

**Housing:** Thermoplastic with V0-behaviour according to UL subject 94

**Vibration resistance:** Amplitude 0,35 mm frequency 10 ... 55 Hz IEC/EN 60068-2-6

20 / 060 / 04 IEC/EN 60068-1

**Climate resistance:** EN 50005

**Terminal designation:** EN 50005  
**Wire connection:** 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

**Wire fixing:** Flat terminals with self-lifting clamping piece IEC/EN 60999-1

## Technical Data

**Mounting:** DIN rail IEC/EN 60715  
**Weight:** 225 g

### Dimensions

**Width x height x depth:** 70 x 90 x 61 mm

## Standard Type

IP 5503.28 DC 24 V  
Article number: 0050912  
• 8 relay outputs  
• Nominal voltage U<sub>N</sub>: DC 24 V  
• Width: 70 mm

## Ordering Example

IP 5503.28/ 00 DC 24 V

Bus interface

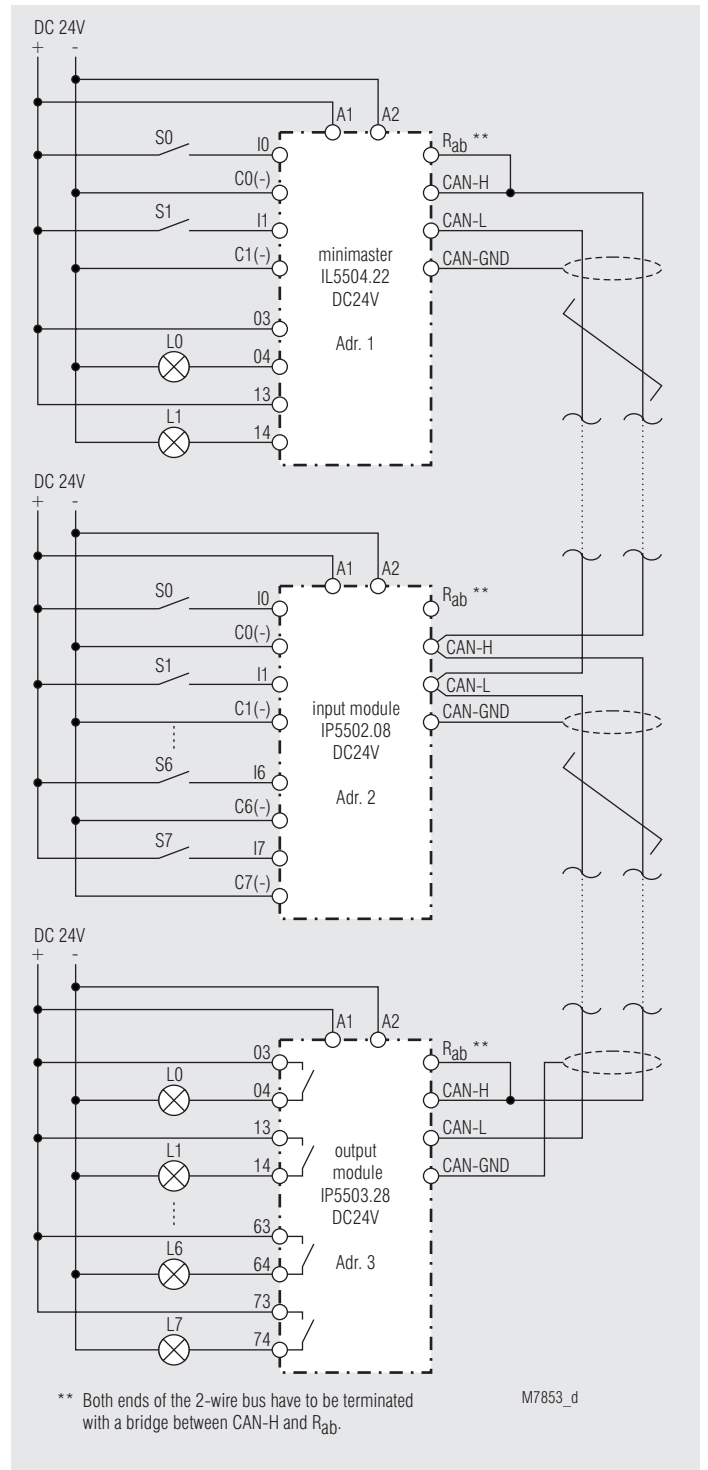
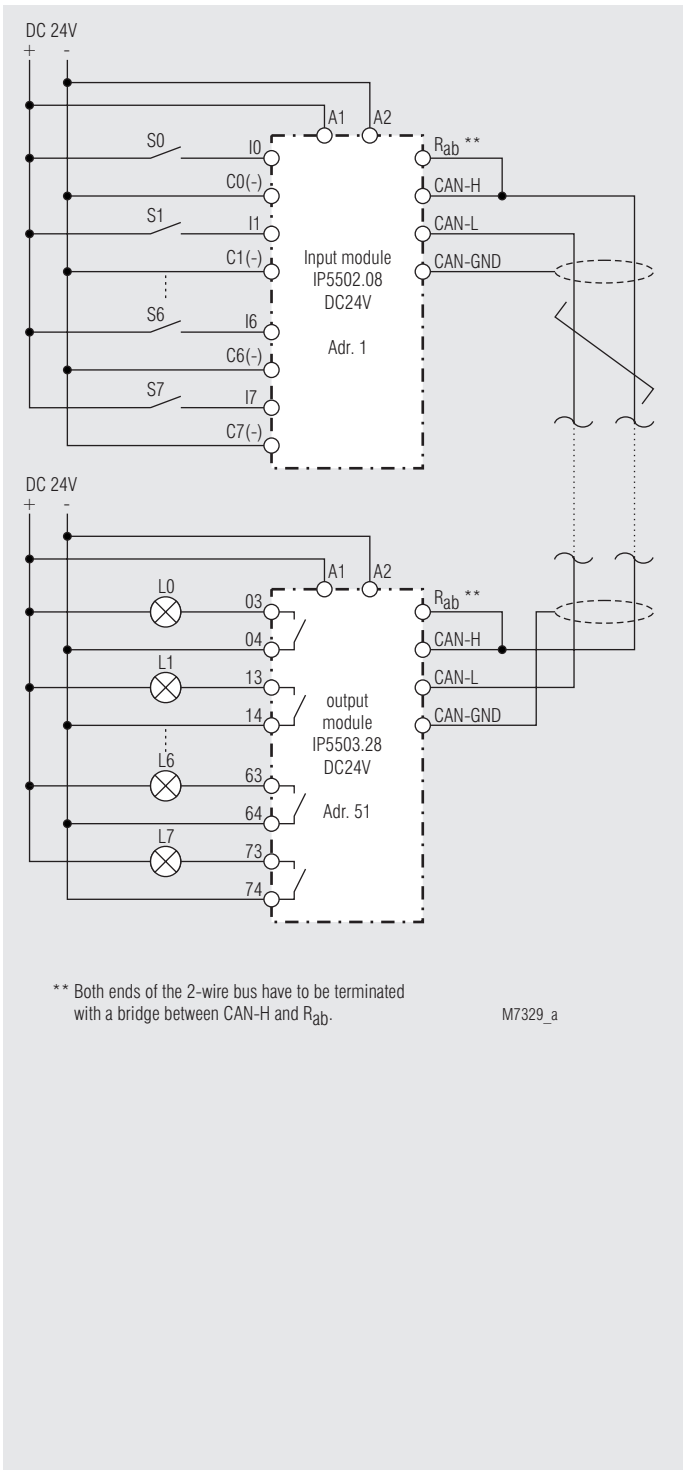
0 CANopen interface without galvanic separation

1 CANopen interface with galvanic separation

## Accessories

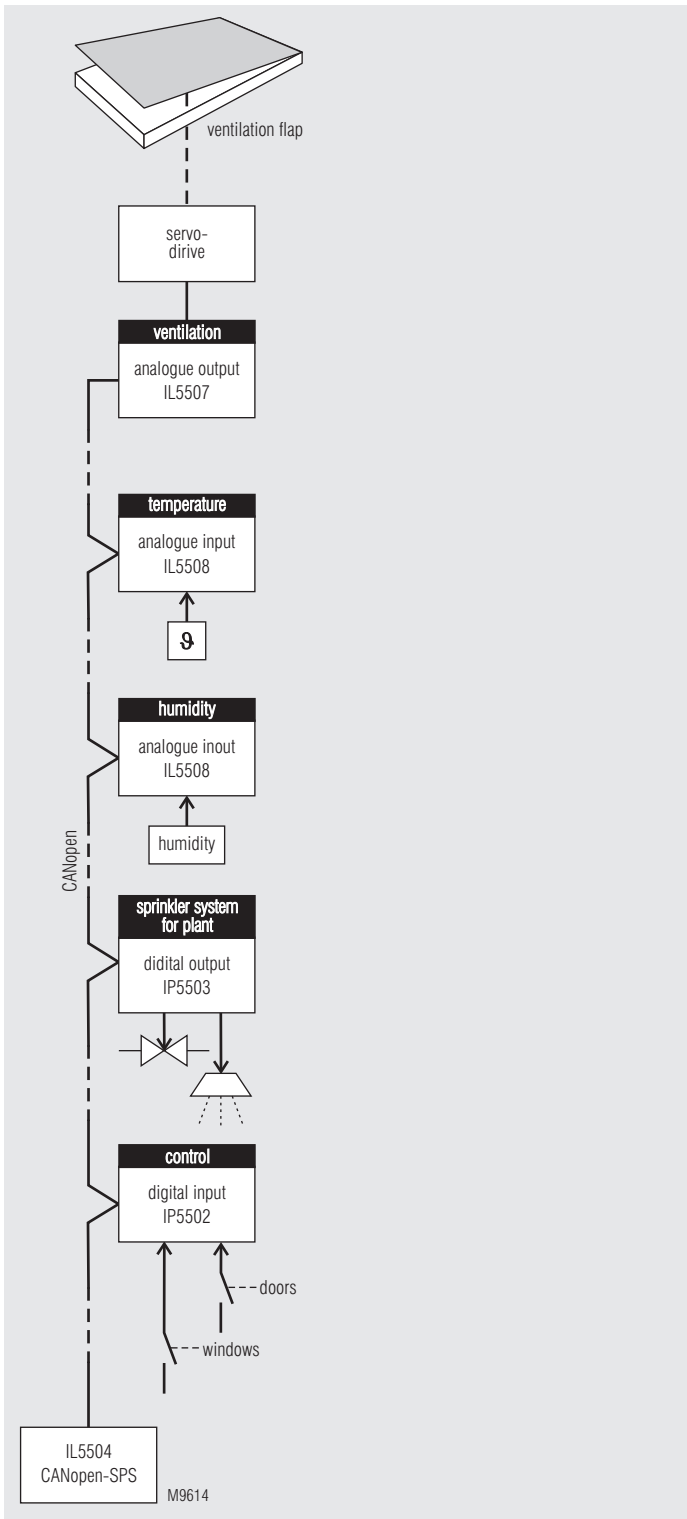
- CANopen PLC IL 5504
- Input / Output module IN 5509
- Input module, digital IP 5502
- Output module, digital IP 5503
- Input module, analogue IL 5508
- Output module, analogue IL 5507

## Application Examples



Design of a 2-wire remote control is very simple:  
 Connect input module IP 5502 to output module IP 5503 via a 2-wire line  
 adjust addresses and speed ... ready to go.

## Application example



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