

MINIMASTER Output Module for CANopen IP 5503



- According to IEC/EN 61131-2
- 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

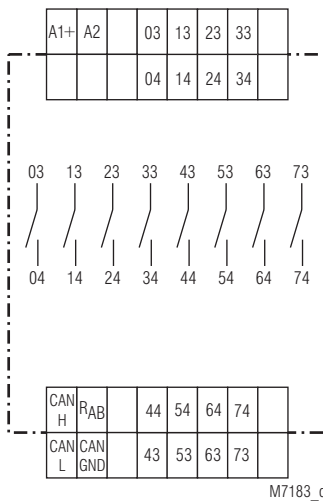
Product Description

The CANopen output module IP 5503 has 8 relay outputs. The IP 5503 can be operated both in combination with a CANopen PLC and in plug & play operation with a CANopen input module IP 5502.

Additional Information

- Datasheet Input Module IP 5502
- Datasheet Emergency Off Monitor BH 5922
- Datasheet CANopen PLC IL 5504

Circuit Diagram



Approvals and Markings



Application

The digital output module actuates signals in control circuits. The modul is used in industrial control circuits and building automation.

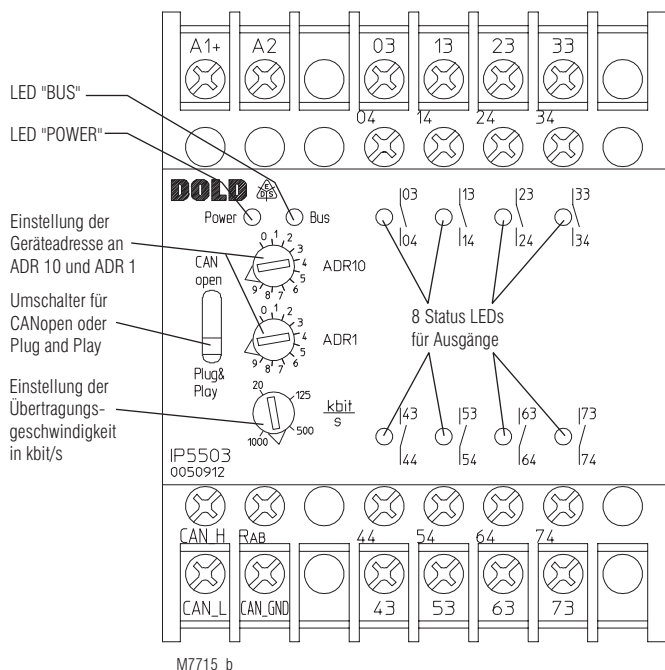
Indicators

- 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)

Connection Terminals

Terminal designation	Signal description
A1+	Auxiliary voltage + DC 24 V
A2	Auxiliary voltage 0 V
03, 04; 13, 14; 23, 24; 33, 34, 43, 44; 53, 54; 63, 64; 73, 74	Relay outputs NO contacts
CAN_H, CAN_L, CAN_GND	CANopen-connections
R _{AB}	Connection for wire bridge

Setting and Adjustment



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 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 of 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 switches 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

Set-up procedure

- 1.) Connect device to CANopen-bus
- 2.) Terminate bus on both ends with bridge between CAN_H and R_{AB} on first and last module.
- 3.) Adjust transmission speed (e. g. 20 Kbit/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_H A1/A2: DC 24 V
Voltage range: 0,8 ... 1,1 U_N
Nominal consumption: 0,5 W

Output

Contacts:
IP 5503.28: 8 NO contacts IEC/EN 61131-2
2 A

Thermal current I_{th} :
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 A gG / gL IEC/EN 60947-5-1
Mechanical life: > 10⁸ switching cycles

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

Wire: Screened twisted pair
Transmission speed: Adjustable 20 Kbit/s, 125 Kbit/s, 500 Kbit/s, 1 Mbit/s,
20 Kbit/s = 2.500 m
125 Kbit/s = 500 m
500 Kbit/s = 100 m
1 Mbit/s = 25 m

Max. length:

Plug and Play

Transmission speed: 20 Kbit/s (recommended)

Attention: Both ends of the 2-wire bus have to be terminated with a bridge between CAN_H and R_{AB}.



General Data

Operating mode: Continuous operation

Temperature range
Operation: - 20 ... + 60 °C
Storage: - 25 ... + 80 °C

Relative air humidity: 93 % at 40 °C
Altitude: ≤ 2000 m

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:

Terminal designation: EN 50005

Wire connection: 2 x 2,5 mm² solid or 2 x 1,5 mm² stranded wire with sleeve DIN 46 228-1/-2/-3/-4

Insulation of wires or sleeve length: 10 mm

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

Fixing torque:

Mounting: DIN rail IEC/EN 60715

Weight: 225 g

Dimensions

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

Standard Type

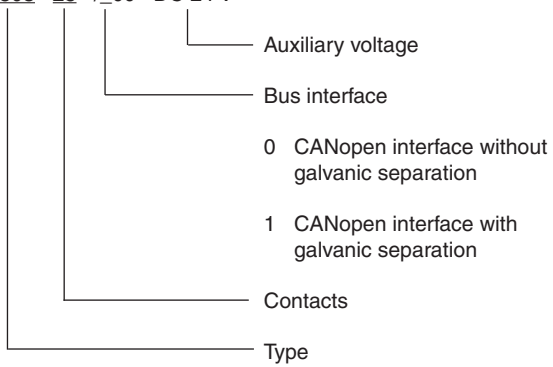
IP 5503.28 DC 24 V

Article number: 0050912

- 8 relay outputs
- Nominal voltage U_N : DC 24 V
- Width: 70 mm

Ordering example for variant

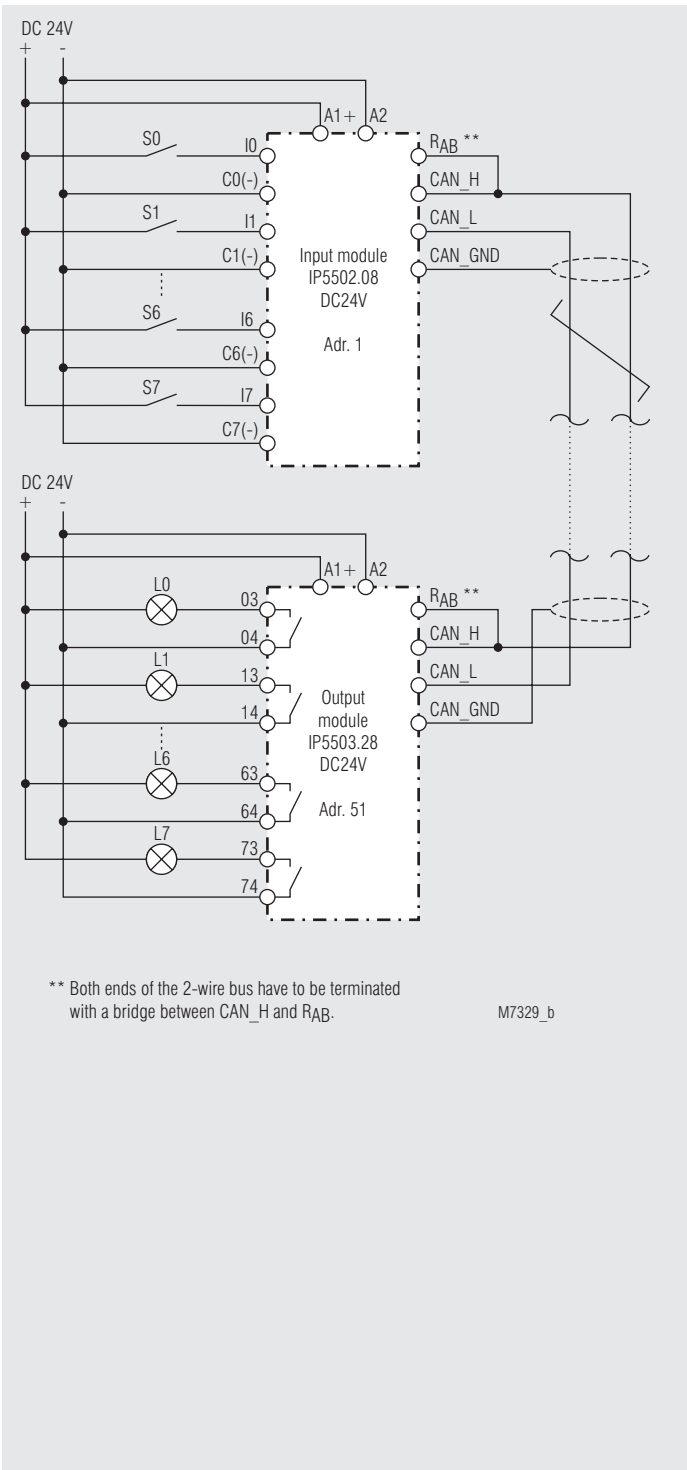
IP 5503 28 /_00 DC 24 V



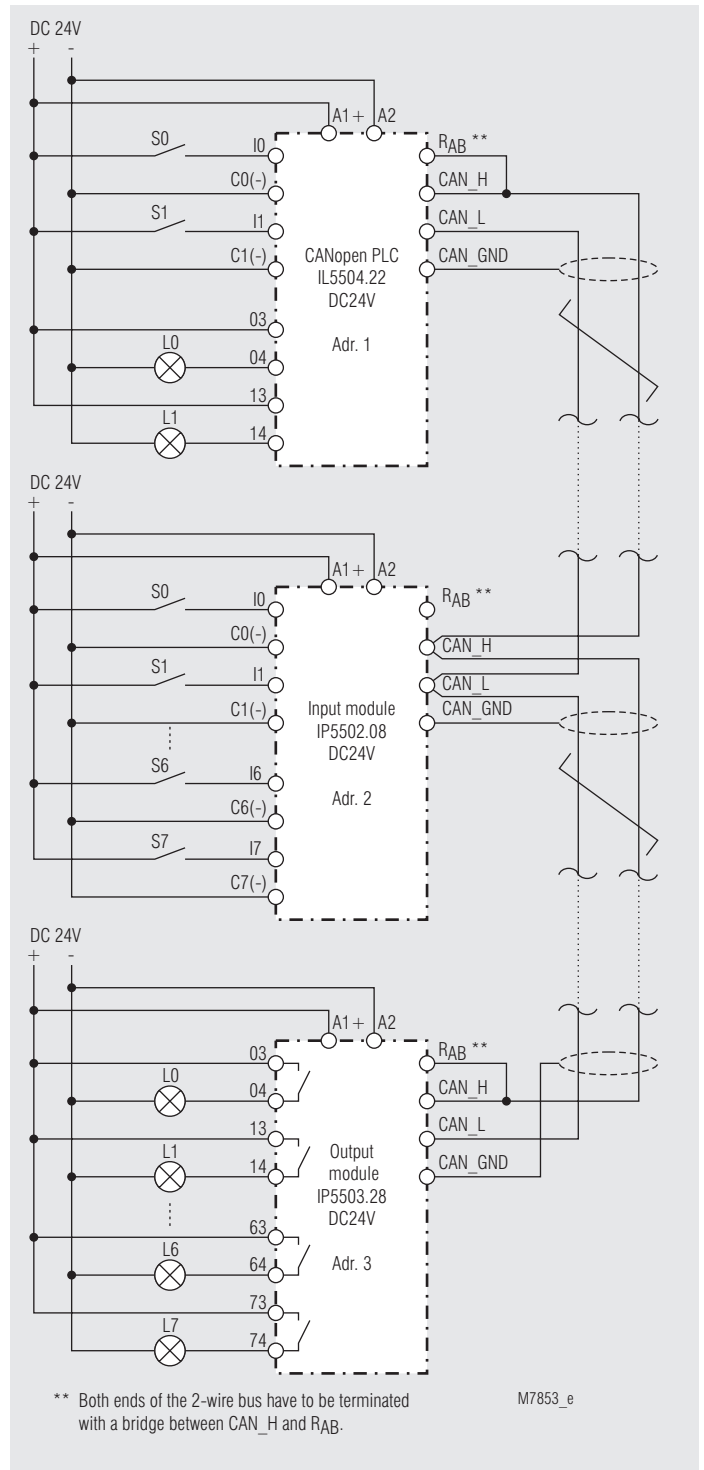
Accessories

- CANopen PLC IL 5504
- Input module, digital IP 5502
- Output module, digital IP 5503

Application Examples



Design of a 2-wire remote control
Switch position: Plug & Play
Connect input module IP 5502 to output module IP 5503 via a 2-wire line
adjust addresses and slide switch.



Operation with CANopen PLC
Switch position: CANopen