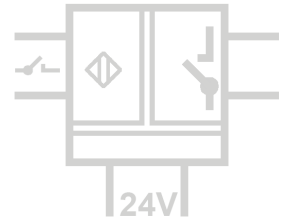


Switch Amplifier DG 31000

Input for NAMUR, SN, SO, DC sensor, Contact, V AC/DC, PNP, NPN and Push-Pull, configurable per DIP switches



The configurable switch amplifier DG 31000 is used to capture, amplify and supply of industrial binary signals. A SPST relay or optionally an isolated, passive transistor switch (Open-Collector) is available at the output.

The switching amplifier detects the status of 2- and 3-wire sensors, binary signals and AC/DC voltages und transmit the state to the switching output. The input is protected against polarity reversal and short circuit. The connected sensors can be supplied by the switching amplifier or externally.

The mode of operation and action direction can be switched with DIP switches. The device has an adjustable switch-on delay, a switch-off delay and a wiper function.

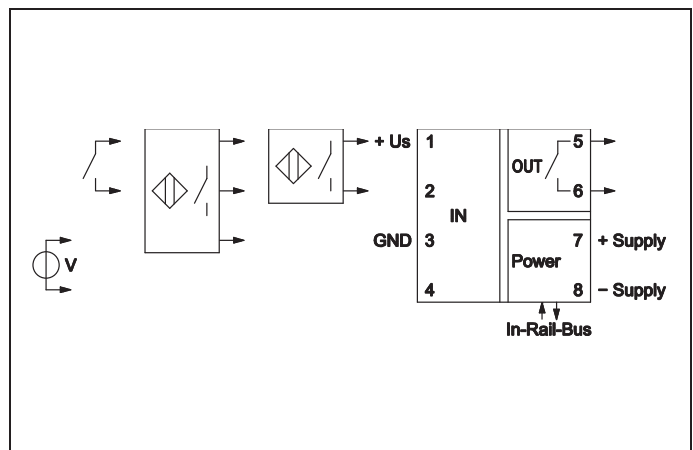
The auxiliary power can be supplied via the connection terminals or via the optional In-Rail-Bus connector. The switching status and the device status are indicated by LEDs on the front panel. If the device is operated via the In-Rail-Bus, a common fault message is available on the status line.



- **Universal Binary Input**
for all common industrial status signals
- **Easily configurable via DIP switches**
Sensor type, action direction and mode of operation directly selectable
- **Switchable timer functions**
Switch-on delay, switch-off delay and wiper function
- **3-Port Isolation**
Protection against switching errors due to parasitic voltages or ground loops
- **Extremely slim design**
6.2 mm slim housing for a simple and space saving DIN rail mounting
- **Optional In-Rail-Bus mounting rail connector**
Allows fast and cost-effective installation and provides a common fault message
- **Protective separation acc. to EN 61140**
Protects service personnel and downstream devices against impermissibly high voltage
- **5 Years Warranty**
Defects occurring within 5 years from delivery date shall be remedied free of charge at our plant (carriage and insurance paid by sender)



Prinzipschaltbild



Technical Data

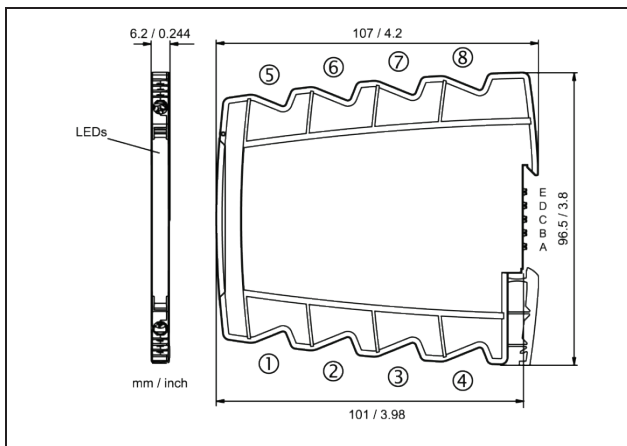
Input				
2-wire Sensors	Terminal 1, 2	NAMUR / SN	S0 Sensor	DC Sensor
	Standard	EN60947-5-6	EN 62053-31, Type B	EN 60947-5-2
	Sensor supply	8 V	16 V	16 V / 25 mA (ext. < 32 V)
	Switching point L/H	1,2/2,1 mA	1,2/2,1 mA	2 mA/6 mA
	Input resistance	1 kΩ	3 kΩ	1 kΩ
Binary Signal	Terminal 1, 2, 3	NPN	PNP / Push-Pull	Mechanical Contact
	Standard	EN60947-5-2	EN60947-5-2	ON/OFF
	Sensor supply	16 V / 25 mA (ext. < 32 V)	16 V / 25 mA (ext. < 32 V)	16 V / 25 mA (ext. < 32 V)
	Switching point L/H	3/5 V	8/10 V	8/10 V
	Input resistance	3 kΩ	3 kΩ	3 kΩ
Voltage	Terminal 3, 4	0 ... 300 V AC 50/60 Hz or DC		
	Switching point L/H (preferred range)	7/15 V (24 V)	40/85 V (115 V)	80/160 V (230 V) switchable (any voltage up to 300 V permitted)
	Input resistance	> 500 kΩ		

Output			
DG31000	Relay	250 V AC / 30 V DC / 2 A	Recommended minimum load 300 mW / 5 V / 5 mA
DG31080	Transistor	36 V DC / 50 mA	galvanically isolated, not current limited
	Response time	≤ 20 ms	
	Switching functions (selectable)	Make / break contact	ON delay, OFF delay or wiper: OFF, 0,5 s, 1 s, 5 s, 10 s
	Common fault message	Signal on In-Rail-Bus E (supply circuit) at device failure, cable break und short circuit	

General Data	
Test voltage	3 kV AC, 50 Hz, 1 Min. Input against output against power supply/In-Rail-Bus
Working voltage ¹⁾ (Basic Insulation)	600 V AC/DC for overvoltage category II and pollution degree 2 acc. to EN 61010-1
Protection against electrical shock ¹⁾	Protective separation according to EN 61140 by reinforced insulation in accordance with EN 61010-1 up to 300 V AC/DC for overvoltage category II and pollution degree 2 between all circuits
Ambient temperature	Operation: -25 °C to +70 °C (-13 to +158 °F) Transport and storage: -40 °C to +85 °C (-40 to +185 °F)
Power supply	24 V DC voltage range 16,8 V ... 31,2 V DC, ca. 1,0 W
EMV ²⁾	EN 61326-1
Approvals (pending)	UL (USA/Canada) UL 61010, Class I, Div. 2 ATEX / IECEx Zone 2 (nA)
Construction	6.2 mm (0.244") housing, protection class IP 20, mounting on 35 mm DIN rail acc. to EN 60715
Weight	Approx. 70 g

1) For applications with high working voltages, ensure there is sufficient spacing or isolation from neighboring devices and protection against electric shocks.
2) Minor deviations possible during interference

Dimensions



Subject to change!

Terminal assignments

1	+ Sensor supply
2	+ Binary input
3	- GND input
4	≈ AC/DC-voltage input
5	≈ Relay + Transistor output
6	≈ Relay - Transistor output
7	+ Power supply (connected to In-Rail-Bus D)
8	- Power supply (connected to In-Rail-Bus C)

Connection

Captive plus-minus clamp screws
Wire cross-section 0.5 ... 2.5 mm² / AWG 20-14
Stripped length 8 mm / 0.3 in
Screw terminal torque 0.6 Nm / 5 lbf in
Optional power connection via In-Rail-Bus (see accessories)

Product line

Device	Order No.	Relay	Transistor
Switch Amplifier, configurable per DIP switch		DG 31000 S	DG 31080 S
Switch Amplifier, configurable per DIP switch, In-Rail-Bus for power supply and status message		DG 31000 B	DG 31080 B