Model Number

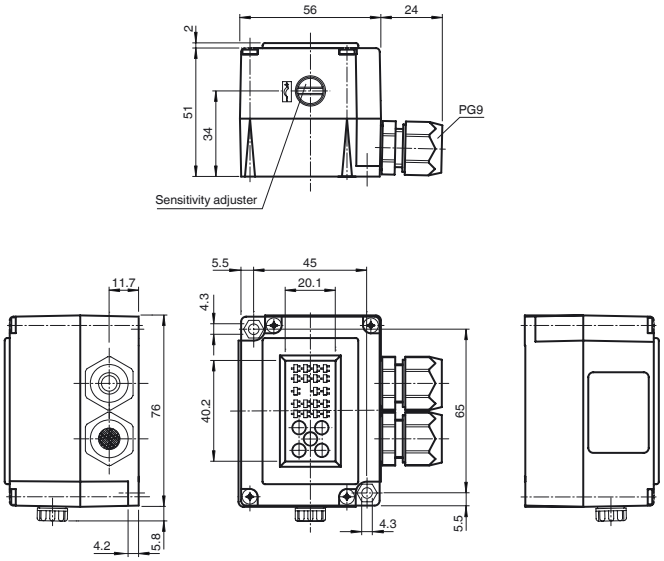
DAD10-8P

Optical data coupler

Features

- Sensing range up to 3 m
- 8 bit parallel data transfer
- Very large angle of divergence
- Operating voltage range 10 V ... 60 V DC
- Galvanically isolated inputs
- Protection degree IP67

Dimensions



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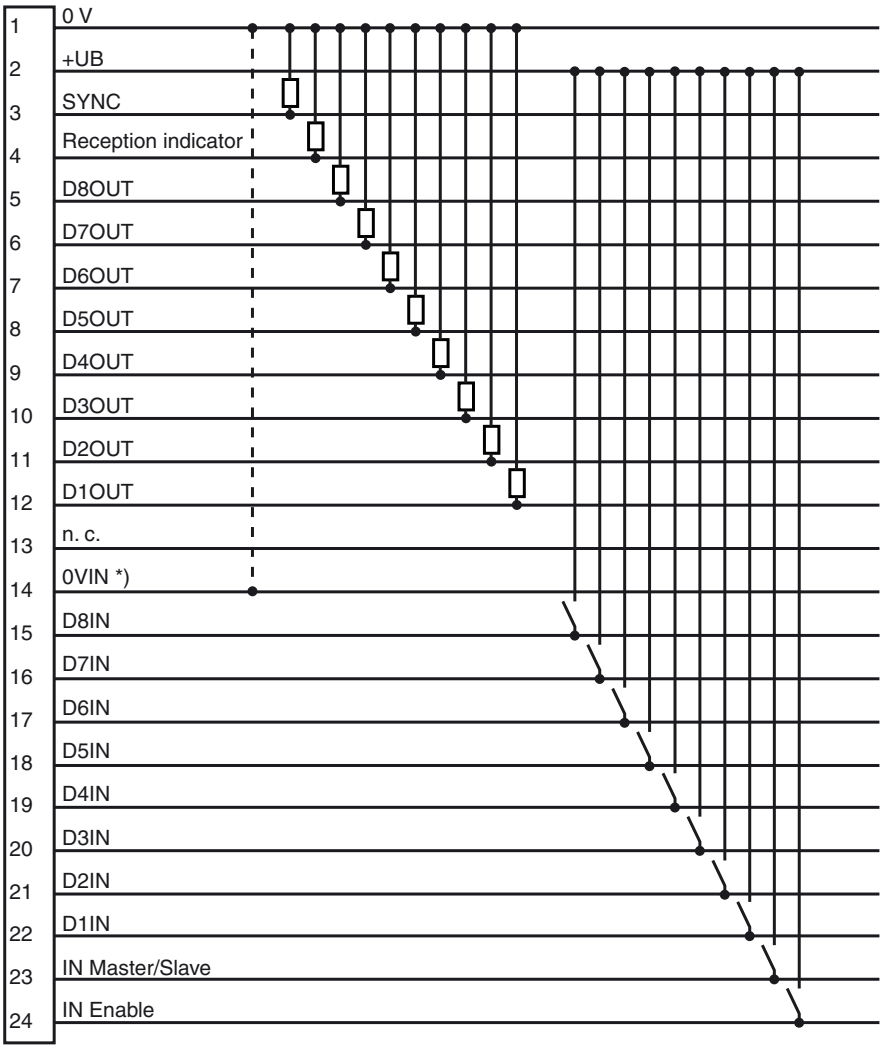
Electrical connection

Version DAD10-8P(/35) and ...-HD...



*) Reference potential for data inputs

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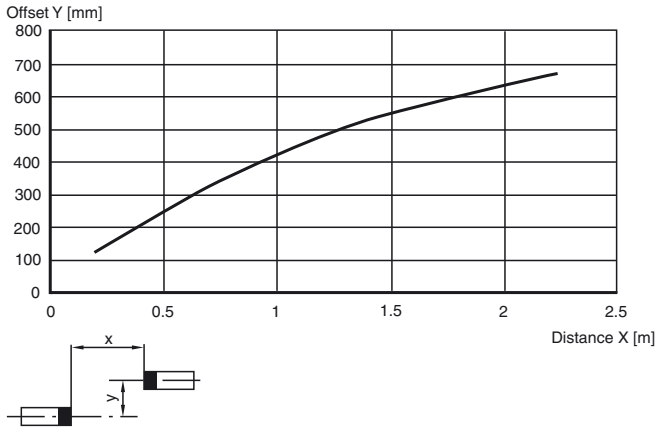
Technical data

General specifications		
Effective detection range		0 ... 1500 mm
Threshold detection range		3000 mm
Light source		IRED
Light type		modulated infrared light
Alignment aid		LED green (sufficient stability control)
Transmission mode		FSK
Diameter of the light spot		approx. 1250 mm at 1.5 m
Angle of divergence		± 20 °
Ambient light limit		5000 Lux
Cycle time		3
Indicators/operating means		
Data flow indicator		Inputs: 8 LEDs red Outputs: 8 LEDs green:
Function indicator		LED green: power on
Control elements		sensitivity adjustment
Control elements		coding switch: behavior when light beam is interrupted
Electrical specifications		
Operating voltage	U_B	10 ... 60 V DC
No-load supply current	I_0	160 mA
Data sampling blanking		Enable input emitter deactivation
Data rate		2400 Bit/s
Operation frequency		232 kHz
Interface		
Interface type		8 bit parallel, bidirectional inputs: 8 optocoupler Outputs: 8 PNP, not short-circuit proof
Output		
Pre-fault indication output		1 PNP (switches if there is sufficient stability control)
Switching voltage		max. 60 V DC
Switching current		max. 100 mA per channel , total ≤ 600 mA
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Storage temperature		-20 ... 75 °C (-4 ... 167 °F)
Mechanical specifications		
Protection degree		IP67
Connection		2 M16 cable glands, tension spring terminals in the terminal compartment
Material		
Housing		Terluran, black
Optical face		glass
Mass		170 g
Approvals and certificates		
Approvals		CE

Curves/Diagrams

Characteristic response curve

DAD10-P



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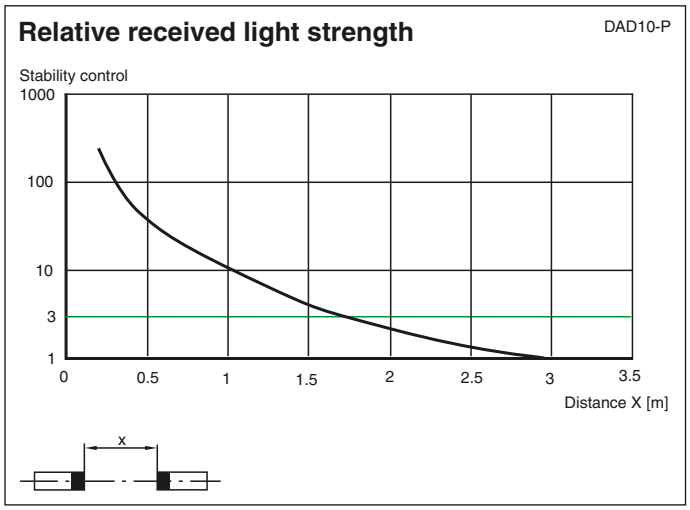


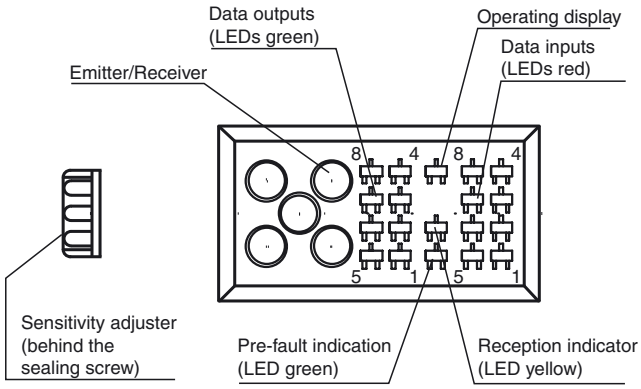
Function

Data words that are 8 bits wide can be transferred bidirectionally with the DAD 10-8P. Two devices are required to set up a transmission route.

All parallel applied binary control signals at the inputs D1 ... D8 are converted serially into an 8-bit string in the device and transmitted via the light transmission link. In the receiver the signals are converted into parallel data again and applied to the outputs D1 ... D8. An interference immune FSK modulation is used for transmission. The complete cycle for the successive transmission of both current 8-bit words in both directions using the time-multiplex procedure takes 3 ms. The last data received is stored and provided at the outputs until the next modification.

Function display

The states of the data inputs and outputs are displayed with LEDs. The states of the data inputs are displayed with green LEDs, while those of the data outputs are displayed with red LEDs. Lit up indicates an active status. The reception display –(yellow LED) and the function reserve display (yellow/green LED) are located between the data input and data output LEDs.



Notes on the function display:

LED yellow: Single function reserve
LED green: Sufficient function reserve

The SYNC output indicates the times at which the input data is read (positive signal edge) or when the output data is valid (negative signal edge).

Output behavior when the beam of light is interrupted

The behavior of the data outputs when the light beam is interrupted is set with a switch.

Switch position 1: Data outputs are turned off
Switch position 2: The last data received remains at the outputs.

The switch is found on the back of the electronics unit.

Mode of operation Master/Slave

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A high-level ENABLE input (enable input) is required to operate the DAD10-8P. If a low level is present on the ENABLE input, the emitter is turned off.

If the emitter is turned off for MASTER, the SLAVE emitter is also turned off automatically.

If the emitter is turned off for SLAVE, the MASTER device continues to send data, which the SLAVE device receives.

Arrangement and mounting

The DAD10-8P data transfer optical barrier consists of an upper and a lower section, with 4 varieties available for the lower section

- standard: two PG9 screwed connections on the bottom of the housing

- with 25-pin Sub-D-socket

- with 25-pin Sub-D-socket

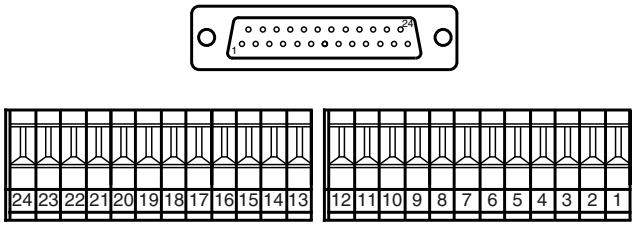
- for top hat rail mounting

Two pass-through mounting holes for M5 screws are provided in the housing for mounting.

Because of the very large angle of divergence of the emitter and receiver optics, the light beam switch also works with a very large lateral offset between the two units. For this reason, a rough alignment of the devices performed with the LED function display is sufficient.

The leads are connected to the spring-loaded terminals in the lower section of the housing according to the assignment diagram. For devices with connector the electrical connection is carried out by means of a 25-pin Sub-D connector or a socket. After that, the upper section of the housing is fastened in place with 4 screws.

Connections:



Accessories:

Mounting bracket OMH-DAD10

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