Data transmission light beam switch

DAD15-8P

CE

- 8 bit parallel data transfer
- Very large angle of divergence
- Cascadable
- Connection with spring-loaded terminals
- Protection degree IP67

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General specifications	
Effective detection range	0 ... 1500 mm
Threshold detection range	2500 mm
Light source	IRED
Approvals	CE
Light type	infrared, modulated light
Diameter of the light spot	approx. 1000 mm at 1.5 m
Angle of divergence	± 20 °
Ambient light limit	5000 Lux
Cycle time	35 ms
Indicators/operating means	
Operating display	LED green
Data flow display	Inputs: 8 LEDs green Outputs: 8 LEDs red
Operating elements	sensitivity adjuster
Operating elements	Operating mode switch 4: Behaviour when beam is broken Switches 1+2: Address
Electrical specifications	
Operating voltage	10 ... 60 V DC
Data sampling blanking	Enable input emitter deactivation
Data rate	225 Bit/s
No-load supply current I_0	40 mA
Interface	
Interface type	8 bit parallel, bidirectional 10 inputs, pnp , 10 outputs, pnp
Output	
Switching voltage	max. 60 V DC
Switching current	max. 200 mA per channel , short-circuit proof , total ≤ 800 mA
Standard conformity	
Standards	EN 60947-5-2
Ambient conditions	
Ambient temperature	-20 ... 60 °C (253 ... 333 K)
Storage temperature	-20 ... 75 °C (253 ... 348 K)
Mechanical specifications	
Protection degree	IP67
Connection	2 M16-screwed connections, spring-loaded terminals in the terminal space
Material	
Housing	Terluran, black
Optical face	glass
Mass	170 g

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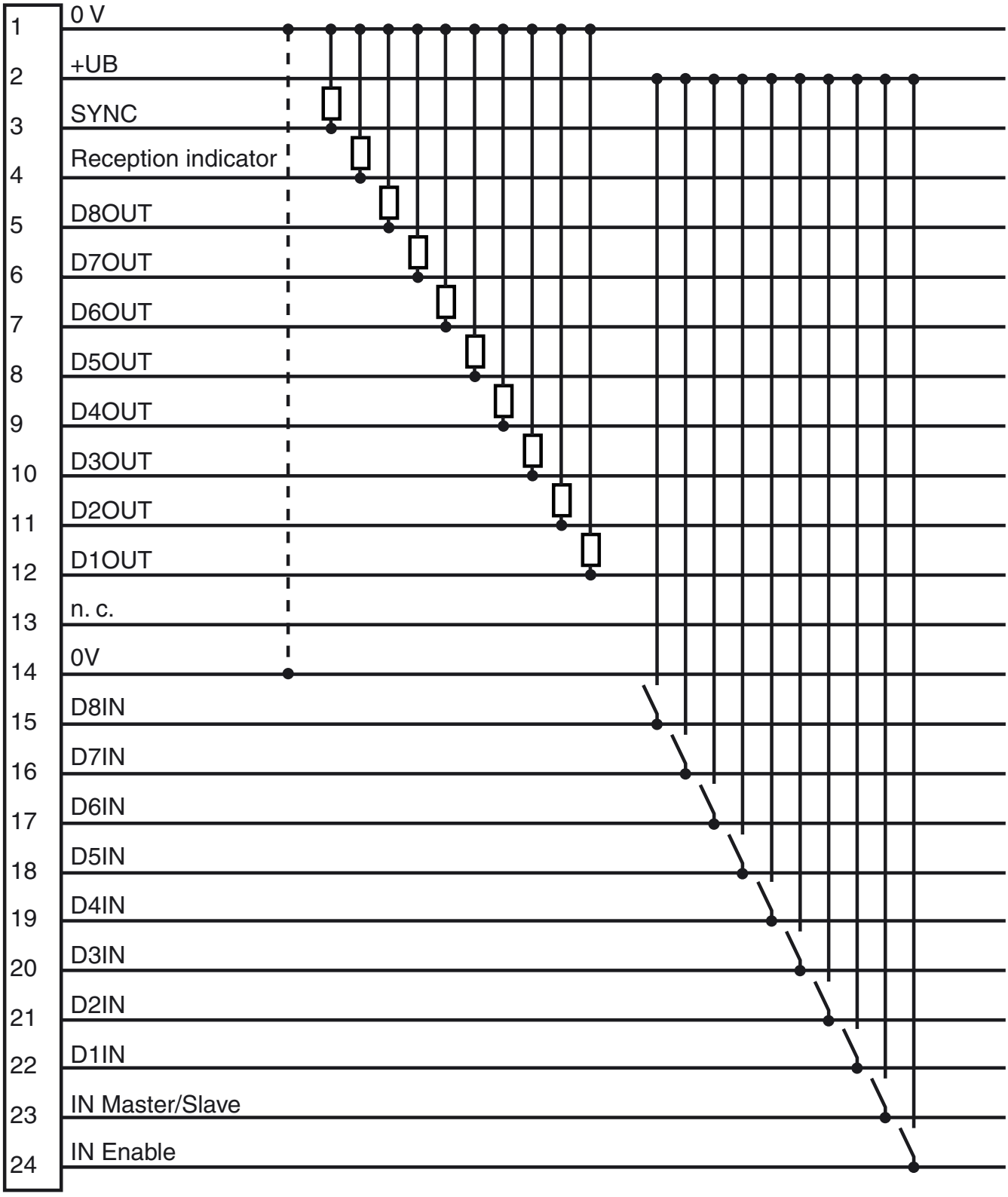
Electrical connection



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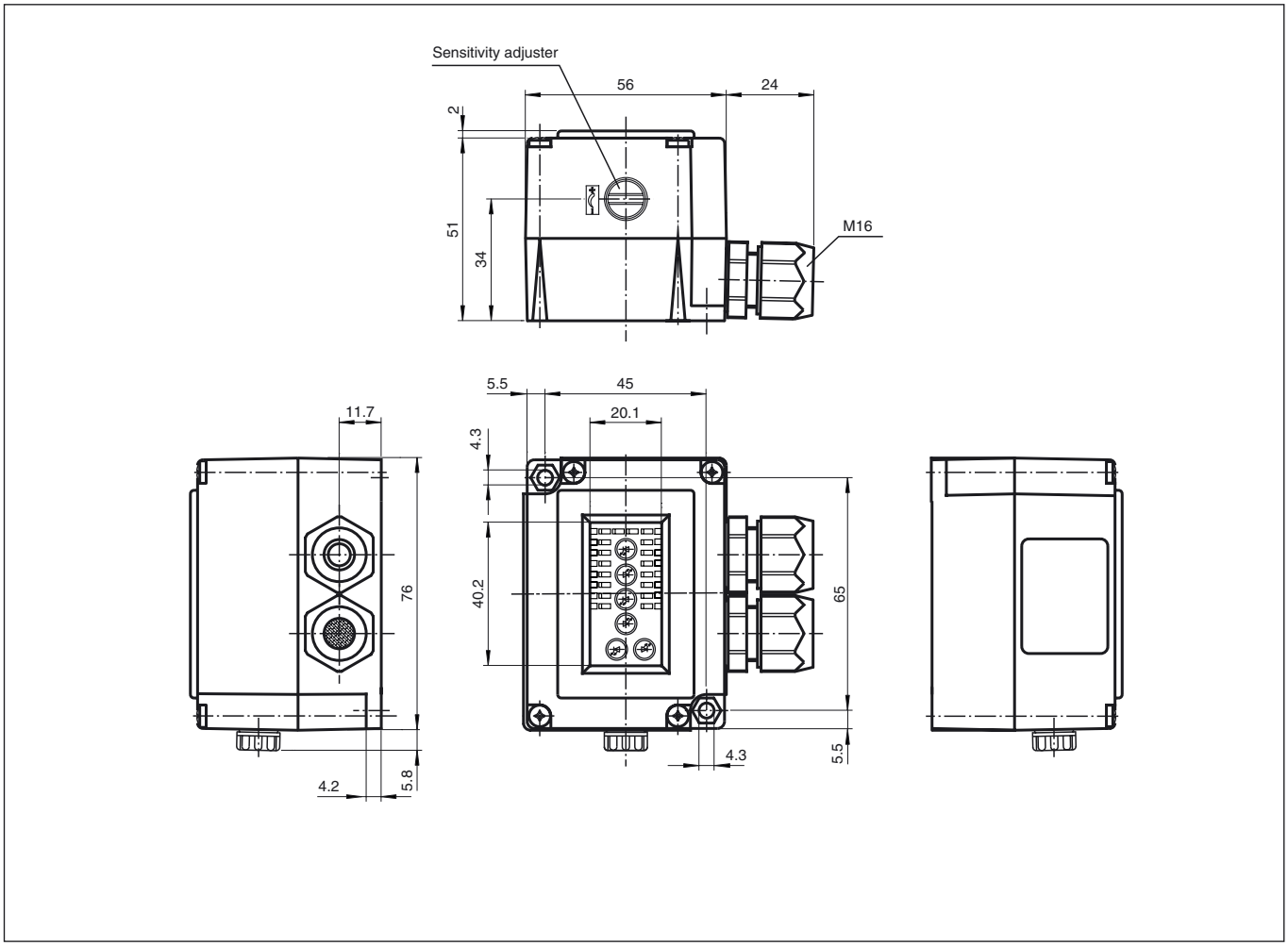
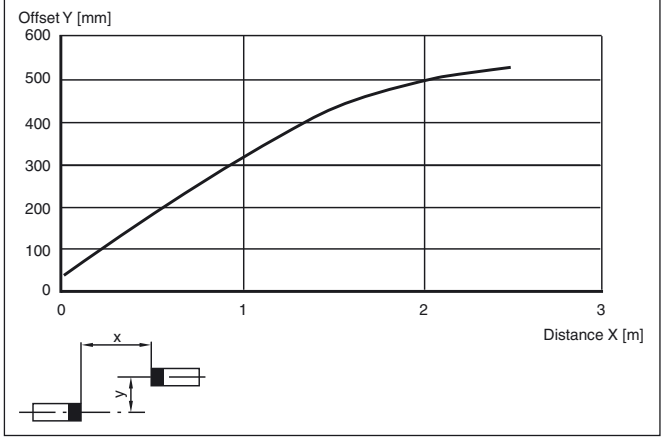
Dimensions



Diagrams

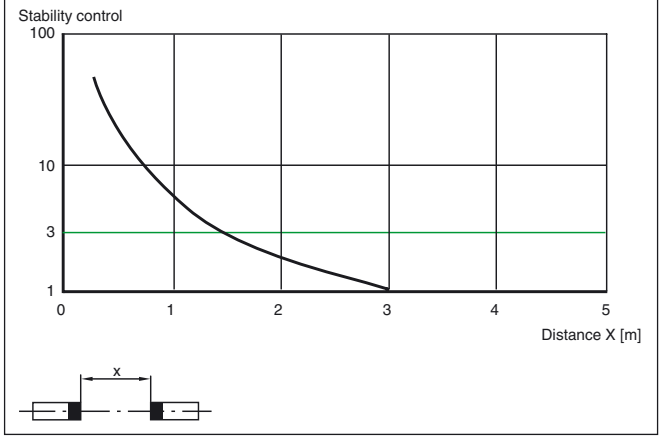
Characteristic response curve

DAD15



Relative received light strength

DAD15



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Function

The DAD 15-8P can be used to transfer data words eight bits wide bidirectionally.
A device pair is required to set up a transmission route. One device is operated as the MASTER (high level on the Master/Slave input) and the second one as the SLAVE (low level on the Master/Slave input).
All binary control signals present in parallel on inputs D1 - D8 are converted serially into an 8-bit sequence in the device, are transferred over the light route and are again applied in parallel in the receiver to outputs D1 - D8. Interference-resistant PPM modulation is used to transfer binary signals. The entire cycle during which the two current 8-bit words are transferred one after the other in both directions, in the time multiplex procedure, lasts 35 ms. This corresponds to a data rate of 350 Baud. This time multiplex procedure is of no significance to the user, since the last data to be received is stored and is available on the outputs until the next change is made.

Output behaviour when the beam of light is interrupted

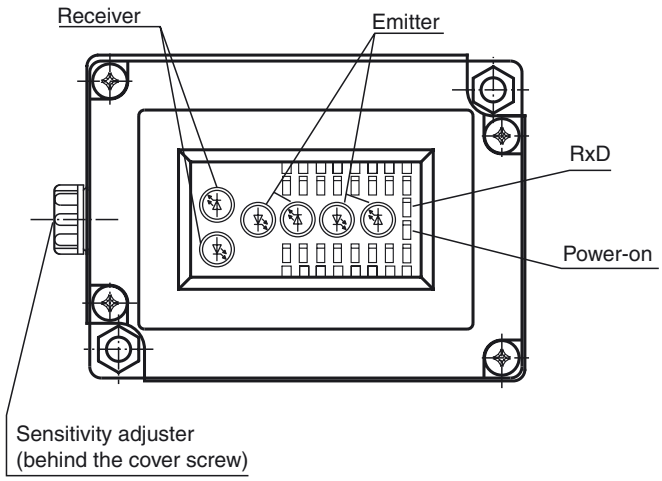
The behaviour of the data outputs when the light beam is broken can be adjusted with the aid of the 4 switch (data latch):
OFF: Data outputs are turned off when the light beam is broken.
ON: The last data to be received remains intact on the outputs when the light beam is broken.

Input/output / emitter deactivation

A high level on the ENABLE input is required to operate the DAD15-8P. If there is a low level on the ENABLE input, the emitter will be turned off.
The ENABLE input has no function in SLAVE mode.

Inputs and outputs, reception indicator:

The states of data inputs and outputs are displayed individually via LEDs. A high level on the input is indicated by a green LED. A red LED indicates an active output.
Correct reception is indicated with the output and the RECEPTION INDICATOR LED.
The SYNC output indicates the end of a transmit or receive cycle. Output data are valid with a falling edge and new input data can be read.



Chaining

The SYNC output can also be used to start an additional ENABLE input. Up to four MASTERS can be chained together in this manner. The devices must then be addressed by means of the A1 and A2 address switches. The SLAVE belonging to the MASTER in question requires the same address switch setting.

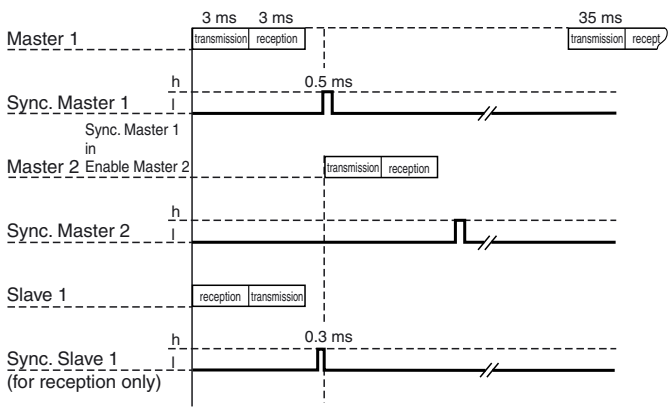
Arrangement and mounting

The DAD15 data light barrier consists of an electronics unit with spring-loaded terminals and 2 M16 cable glands.
The electronics unit is connected with an internal connector. It is also fastened to it with 4 screws.

Accessories:

OMH-DAD10 mounting angle

Timing



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