

Мультиплексор HART K-System

Технические характеристики

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HART MUX Primary Module

KFD2-HMM-16

- 16-channel
- 24 V DC supply (Power Rail)
- HART field device input (revision 5 to 7)
- Up to 15 KFD0-HMS-16 HART MUX secondary modules can be connected
- Up to SIL 3 acc. to IEC/EN 61508

HART MUX Primary Module



Function

The HART MUX primary module operates up to 256 analog field devices. The built-in secondary module in the primary module operates the first 16 field devices. If more than 16 field devices are required, up to 15 additional HART MUX secondary modules KFD0-HMS-16 can be connected.

The secondary modules are connected to the primary module with a 14-pin flat cable. The connector for the ribbon cable is found on the same housing side as the connectors for the interface and the power supply.

The analog signals are separately linked via a 26-pin flat cable to each secondary module. Sixteen leads are reserved for the HART signal of the analog measurement circuits. The remaining 10 leads are assigned to ground.

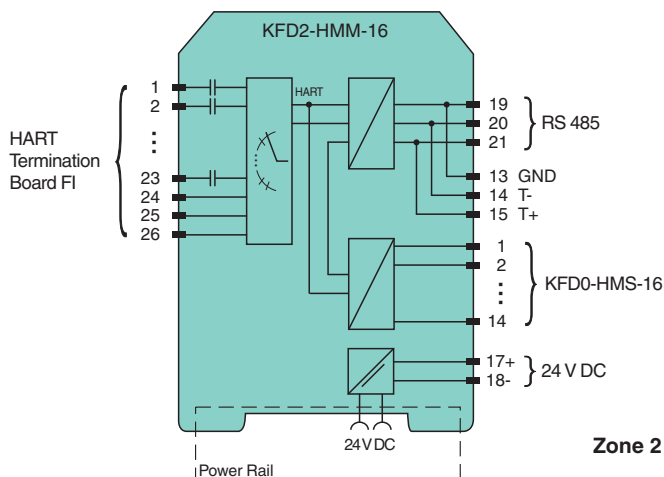
The primary module is designed with removable terminals and can be connected to the Power Rail.

Application

The KFD2-HMM-16 is a HART MUX primary module. The built-in secondary module can operate 16 analog field devices. Up to 15 KFD0-HMS-16 secondary modules can be connected to each HART MUX primary module. The secondary modules are linked to the KFD2-HMM-16 HART MUX primary module via a 14-pin bus cable.

The data of the individual filed devices is sent to a PC through an RS-485 interface. Via PC with a software such as PACTware™ or AMS, a configuration of the HART compatible field devices, as well as the registration of the processes with regard to a maintenance system can be carried out.

Connection



Technical Data

Functional safety related parameters

Safety Integrity Level (SIL)	SIL 3
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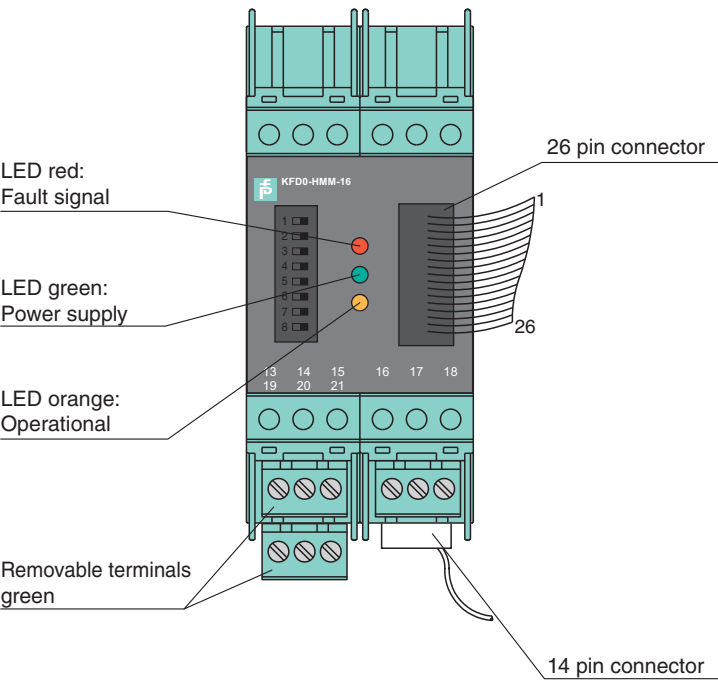
Supply

Technical Data

Connection		terminals 17+, 18-
Rated voltage	U_r	20 ... 32 V DC typical at 100 mA
Power consumption		max. 3 W
HART signal channels (non-intrinsically safe)		
Conformity		HART field device input (revision 5 to 7)
Connection		26-pin flat cable for analog connections 14-pin flat cable for primary module/secondary module connection between KFD2-HMM-16 and KFD0-HMS-16
Leakage current		< 3 μ A at -20 ... 85 °C (-4 ... 185 °F)
Terminating resistor		external 230 ... 500 Ω standard (up to 1000 Ω possible)
Output voltage		≥ 400 mV _{ss} (with the terminator resistance specified above)
Output resistance		100 Ω or smaller, capacitive coupling
Input impedance		according to HART specification
Input voltage range		0.08 ... 4 V _{ss} ; typ. ± 5.2 V as local reference
Interface		
Transfer rate		9600, 19200, or 38400 Bit/s (selectable with DIL switch (2 and 3) by the user)
Type		RS-485 , 2-wire multidrop
Address selection		One of 31 possible addresses selectable per DIL switch (4 ... 8)
Indicators/settings		
Control elements		DIP switch
Configuration		via DIP switches
Labeling		space for labeling at the front
Directive conformity		
Electromagnetic compatibility		
Directive 2014/30/EU		EN 61326-1:2013 (industrial locations)
Conformity		
Degree of protection		IEC 60529:2001
Ambient conditions		
Ambient temperature		-20 ... 60 °C (-4 ... 140 °F)
Mechanical specifications		
Degree of protection		IP20
Connection		screw terminals
Mass		approx. 250 g
Dimensions		40 x 107 x 115 mm (1.6 x 4.2 x 4.5 inch) (W x H x D) , housing type C1
Mounting		on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas		
Certificate		PF 07 CERT 1143 X
Marking		Ⓔ II 3G Ex nA IIC T4 Gc
Directive conformity		
Directive 2014/34/EU		EN 60079-0:2012+A11:2013 , EN 60079-15:2010
General information		

Assembly

Front view



Configuration

Switch Settings
The device has 8 switches located on the top of the device.
The switch 1 is used by the manufacturer for testing the device and **must** therefore **always be set to OFF**.

Switch	1	Meaning
Position	OFF	Normal status

The switches 2 and 3 determine the baud rate of the RS-485 interface.

Switch	2	3	Meaning
Position	OFF	OFF	9600 Baud
	OFF	ON	19200 Baud
	ON	OFF	38400 Baud
	ON	ON	not permitted

The switches 4 to 8 determine the RS-485 address. A value is assigned to each of the individual switches for this purpose. The resulting address is given by the addition of the set values.

Switch	4	5	6	7	8	Meaning
Position	ON					Value 16
		ON				Value 8
			ON			Value 4
				ON		Value 2
					ON	Value 1
Example	OFF	ON	ON	OFF	ON	Address = 8 + 4 + 1 = 13



HART MUX Secondary Module

KFD0-HMS-16

- 16-channel
- No external power required
- HART field device input (revision 5 to 7)
- Used with HART MUX primary module KFD2-HMM-16
- Up to SIL 3 acc. to IEC/EN 61508

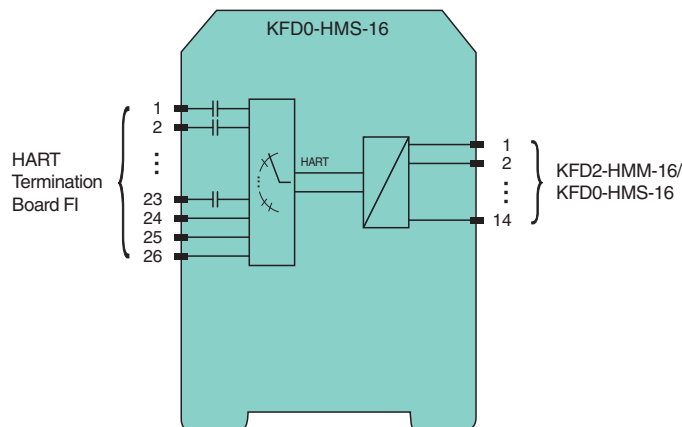
HART MUX Secondary Module



Function

The HART MUX secondary module operates up to 16 analog field devices. The secondary module can be operated only with the HART MUX primary module KFD2-HMM-16 and is powered by the primary module across a 14-pin flat cable connection. Up to 15 secondary modules can be connected to the primary module. The secondary module address is set with a 16-position rotary switch (addresses 1 ... 16). If only one secondary module is connected to the primary module, then the secondary module address should be 1. If multiple secondary modules are connected, secondary modules must be assigned addresses in ascending order. The analog signals are fed into the secondary module by means of a 26-pin flat cable. Sixteen leads are reserved for the HART signal of the analog measurement circuits. The remaining 10 leads are assigned to ground.

Connection



Zone 2

Technical Data

Functional safety related parameters

Safety Integrity Level (SIL)	SIL 3
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Supply

Connection	via 14-channel flat cable from the KFD2-HMM-16 primary module
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HART signal channels (non-intrinsically safe)

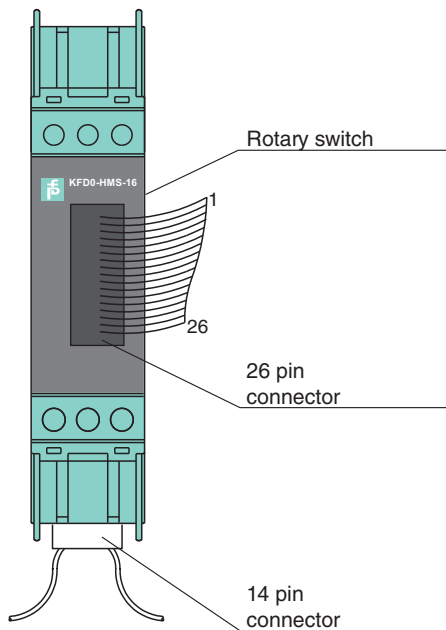
Conformity	HART field device input (revision 5 to 7)
Connection	26-pin flat cable for analog connections 14-pin flat cable for primary module/secondary module connection between KFD2-HMM-16 and KFD0-HMS-16
Leakage current	< 3 µA at -20 ... 85 °C (-4 ... 185 °F)

Technical Data

Terminating resistor	external 230 ... 500 Ω standard (up to 1000 Ω possible)
Output voltage	≥ 400 mV _{ss} (with the terminator resistance specified above)
Output resistance	100 Ω or smaller, capacitive coupling
Input impedance	according to HART specification
Input voltage range	0.08 ... 4 V _{ss} ; typ. ± 5.2 V as local reference
Indicators/settings	
Labeling	space for labeling at the front
Directive conformity	
Electromagnetic compatibility	
Directive 2014/30/EU	EN 61326-1:2013 (industrial locations)
Conformity	
Degree of protection	IEC 60529:2001
Ambient conditions	
Ambient temperature	-20 ... 65 °C (-4 ... 149 °F)
Mechanical specifications	
Degree of protection	IP20
Mass	approx. 100 g
Dimensions	20 x 93 x 115 mm (0.8 x 3.7 x 4.5 inch) (W x H x D) , housing type B1
Mounting	on 35 mm DIN mounting rail acc. to EN 60715:2001
Data for application in connection with hazardous areas	
Certificate	PF 07 CERT 1143 X
Marking	Ⓔ II 3G Ex nA IIC T4 Gc
Directive conformity	
Directive 2014/34/EU	EN 60079-0:2012+A11:2013 , EN 60079-15:2010
General information	
Supplementary information	Observe the certificates, declarations of conformity, instruction manuals, and manuals

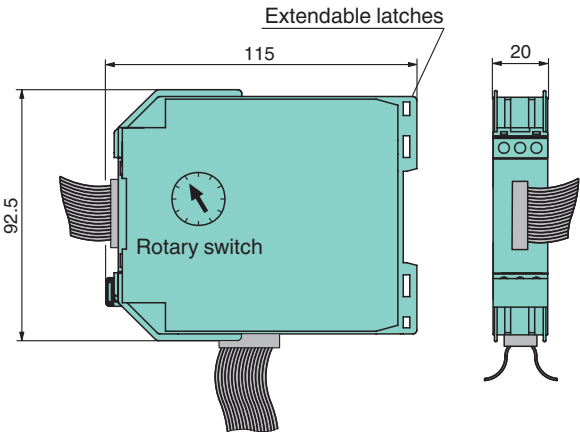
Assembly

Front view



Commissioning

Dimensions



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