Features

- 16-channel
- 24 V DC supply (Power Rail)
- HART field device input (revision 5 to 7)
- Up to 15 KFD0-HMS-16 slave units can be connected
- Up to SIL3 acc. to IEC 61508

Function

This HART Multiplexer Master operates up to 256 analog field instruments. The built-in slave unit in the HART master operates the first 16 field instruments. If more than 16 field instruments are required, up to 15 additional HART Multiplexer Slaves KFD0-HMS-16 can be connected.

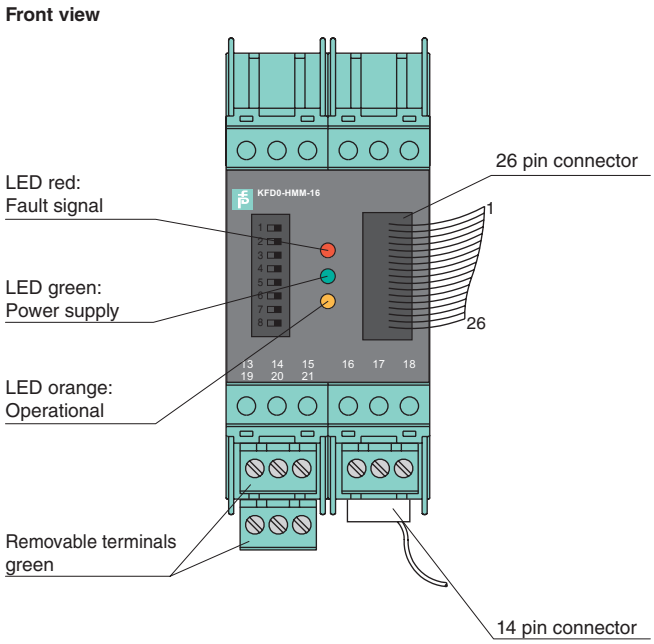
The slave units are connected to the master with a 14-pin flat cable. The connector for the ribbon cable is found on the same housing side as the connectors for the interface and the power supply.

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

This unit is designed with removable terminals and can be connected to the Power Rail.

Assembly

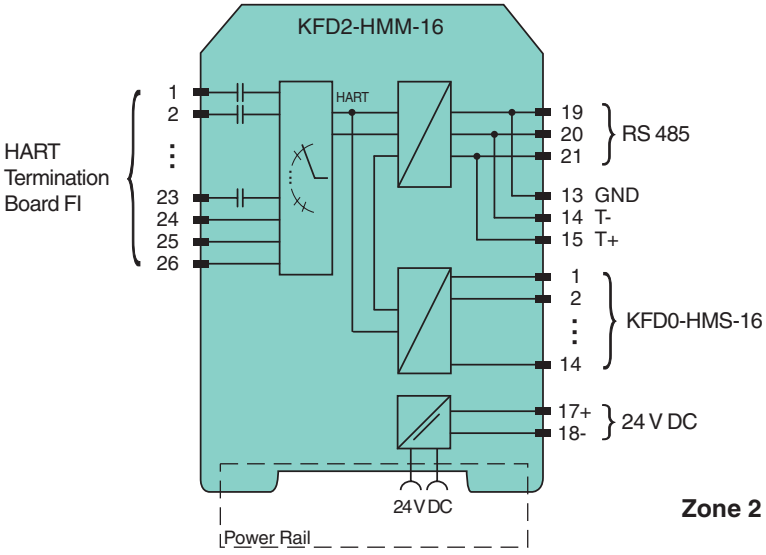
Front view



SIL 3

HART COMMUNICATION PROTOCOL

Connection



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Functional safety related parameters	
Safety Integrity Level (SIL)	SIL 3
Supply	
Connection	terminals 17+, 18-
Rated voltage U_r	20 ... 32 V DC typical at 100 mA
Power consumption	≤ 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 master-slave connection between KFD2-HMM-16 and KFD0-HMS-16
Leakage current	< 3 µA 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
Mass	approx. 250 g
Dimensions	40 x 107 x 115 mm (1.6 x 4.2 x 4.5 inch) , 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	Ⓔx 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 where applicable. For information see

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Additional information

The KFD2-HMM-16 is a HART Multiplexer. The built-in slave unit can operate 16 analog transmitters. Up to 15 KFD0-HMS-16 slave units can be connected to each KFD2-HMM-16 HART Multiplexer. The slave units are linked to the KFD2-HMM-16 HART Multiplexer via a 14-pin bus cable.

The data of the individual transmitters is sent to a PC through an RS 485 interface. Via PC with a software such as **PACT***ware*™ or AMS, a configuration of the HART compatible transmitter, as well as the registration of the processes with regard to a maintenance system can be carried out.

DIP switch settings

8 DIP switches are located on the top of the device.

DIP switch 1 is used by the manufacturer for testing the device and **must** therefore **always be set to "OFF"**.

DIP switch	1	Meaning
Setting	OFF	normal status

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

DIP switch	2	3	Meaning
Setting	OFF	OFF	9600 Baud
	OFF	ON	19200 Baud
	ON	OFF	38400 Baud
	ON	ON	not permitted

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

DIP switch	4	5	6	7	8	Meaning
Setting	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

Accessories

Connection cable

K-HM14	Connecting cable Multiplexer Master to Multiplexer Slave, standard length (0.45 m) or custom legnth (up to 8 m)
K-HM26	Connecting cable Multiplexer Master or Multiplexer Slave to Termination Board, standard length (1 m) or custom legnth (up to 8 m)

Termination Board

FI-PFH-NS0137-R	Connection board for K-System HART Multiplexer, 16-channel, interface for series connections, integrated, switchable 220 Ω resistor

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Accessories

Power feed module KFD2-EB2

The power feed module is used to supply the devices with 24 V DC via the Power Rail. The fuse-protected power feed module can supply up to 150 individual devices depending on the power consumption of the devices. Collective error messages received from the Power Rail activate a galvanically-isolated mechanical contact.

Power Rail UPR-03

The Power Rail UPR-03 is a complete unit consisting of the electrical insert and an aluminium profile rail 35 mm x 15 mm. To make electrical contact, the devices are simply engaged.

Profile Rail K-DUCT with Power Rail

The profile rail K-DUCT is an aluminum profile rail with Power Rail insert and two integral cable ducts for system and field cables. Due to this assembly no additional cable guides are necessary.



Power Rail and Profile Rail must not be fed via the device terminals of the individual devices!

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