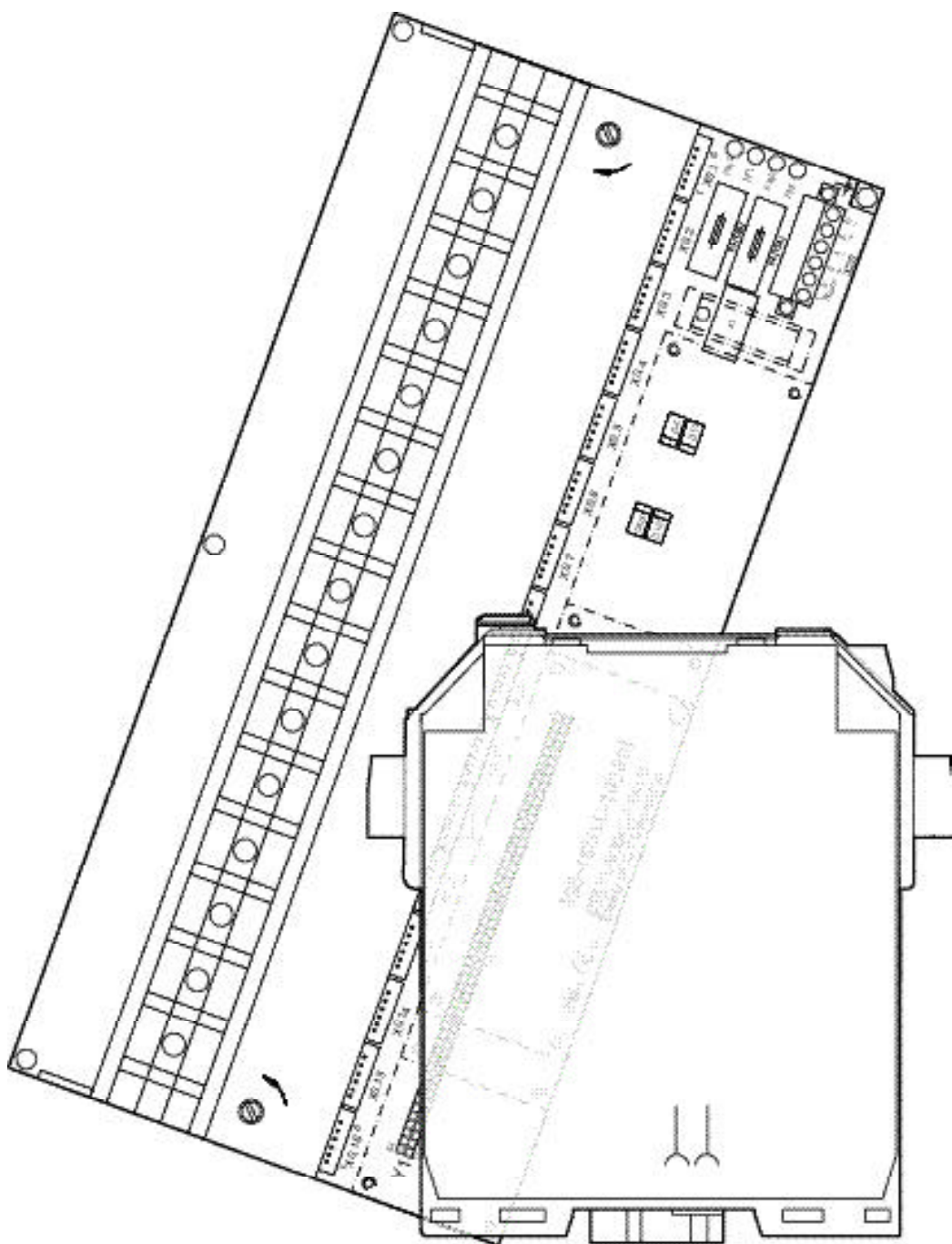


# PROCESS AUTOMATION

KF-Modulecarrier taylor made for DCS

Honeywell SMS



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2. <b>FSC 10101/2/1</b> Application (16DI or 16 + 16DI) .....	2- 0
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4. <b>FSC 10105/2/1</b> Application (16DI) .....	4- 0
5. <b>FSC 10201/2/1</b> Application (8AO or 2 x 8AO).....	5- 0
6. <b>FSC 10205/2/1</b> Application (2 x 8AO).....	6- 0

Notes:

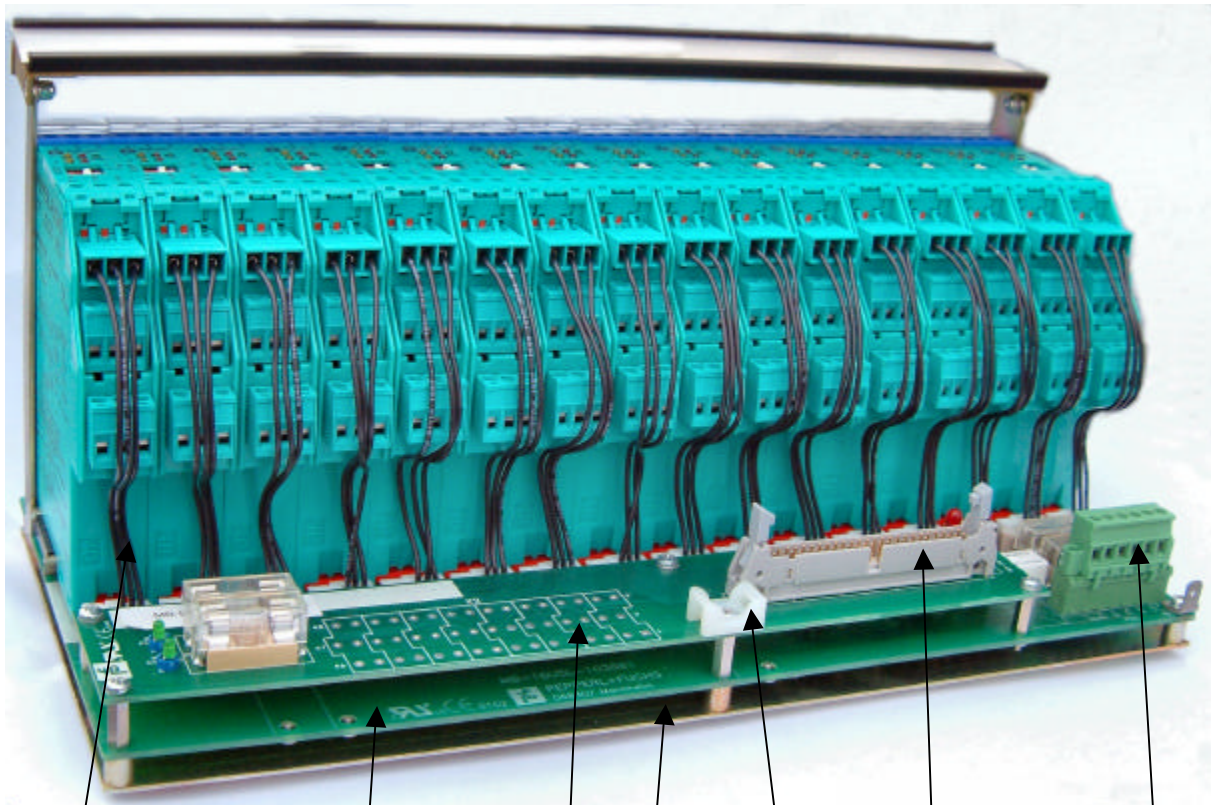
# 1. General Description

	Page
Motherboard for 16 modules .....	1- 1
Motherboard for 8 modules .....	1- 2
Installation instructions .....	1- 3
Power supply block diagram .....	1- 4
Galvanic Isolated Modules List index .....	1- 5

The standard motherboard is designed for 8 or 16KF modules Power feed and system connector to DCS are integrated in the motherboard, which results in noticeable space savings in the interface cabinet. The power source has a redundant design, increasing the reliability of the system. The operating status of the power supply is monitored and reported via led and relay output.


The KF modules are interfaced to the motherboard himself by using 2- to 6- pin coded cable connectors.(FSY...) The motherboard configuration is mounted on a stable metal plate. There are two brackets, on the back for mounting the board quickly and easily to a standard DIN rail in accordance with DIN EN 50022 or similar.

### 1. Model with 16 modules



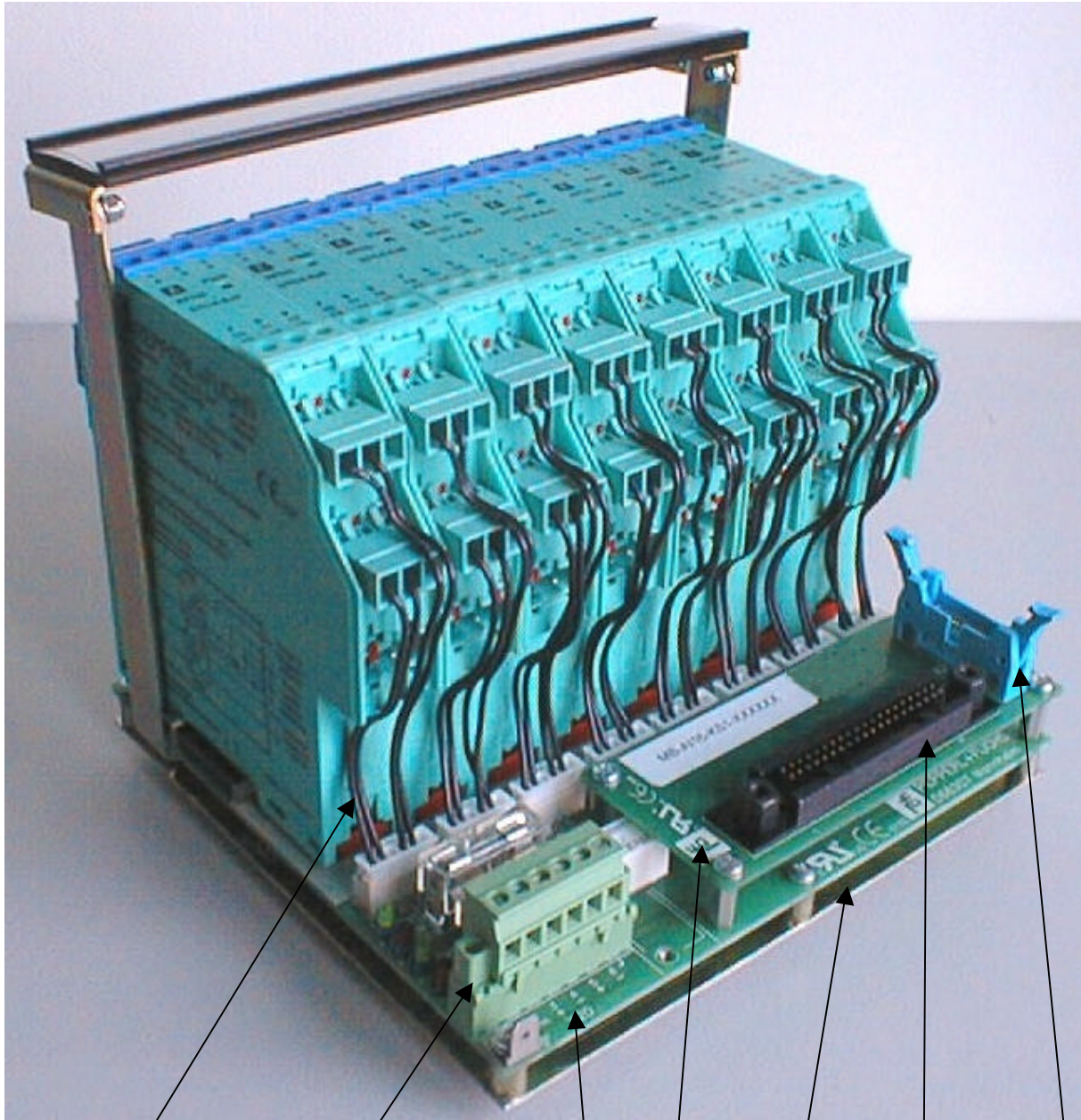
- Cable connector (FSY) between the modules and the PCB
- Main printed circuit board
- Adapter
- Cable tie basis
- Customer specified system plug to PLC
- Terminal strip (removable) for redundant power supply and message contact for monitoring the power, optional breakage and short circuit monitoring.
- Metal base plate with brackets for mounting on DIN rail

Urheberrecht nach DIN 34 Weitergabe sowie Vervielfältigung ist nicht gestattet

	<b>PEPPERL+FUCHS</b> Mannheim-Schönau		<b>Motherboard for 16 Modules</b> <u>General description</u>			23.02.01			vB		
						Datum	S	TZ	Sach- bearb.	gepr. techn.	gepr. Norm
				Abt.: PA-VP			Word				
				xxxxxx			Ersatz für :			Blatt 1	
						Maßstab:			von 2		



## 2. Model with 8 modules



Cable connector (FSY) between the modules and the PCB

Terminal strip (removable) for redundant power supply and message contact for monitoring the power, optional breakage and short circuit monitoring.

Adapter


Main printed circuit board

Metal base plate with brackets for mounting on DIN rail

Customer specified system plug to PLC

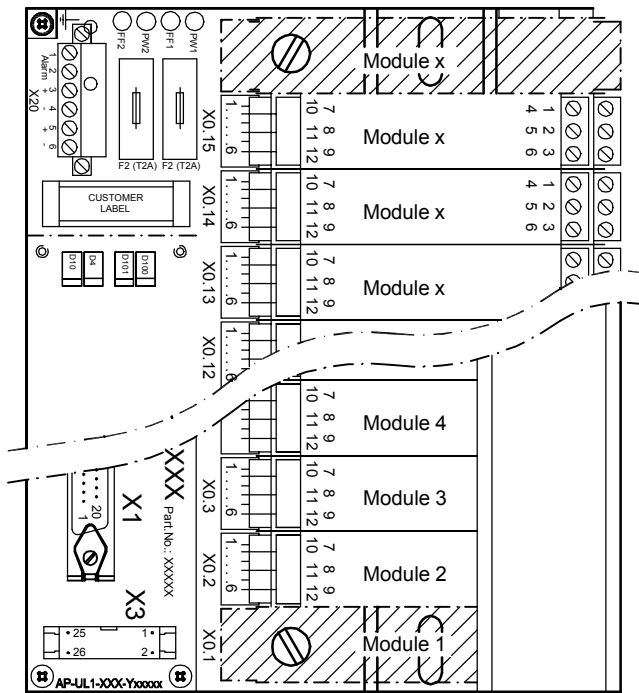
Connector for HART communication

Urheberschutz nach DIN 34  
Weitergabe sowie Vervielfältigung ist nicht gestattet.

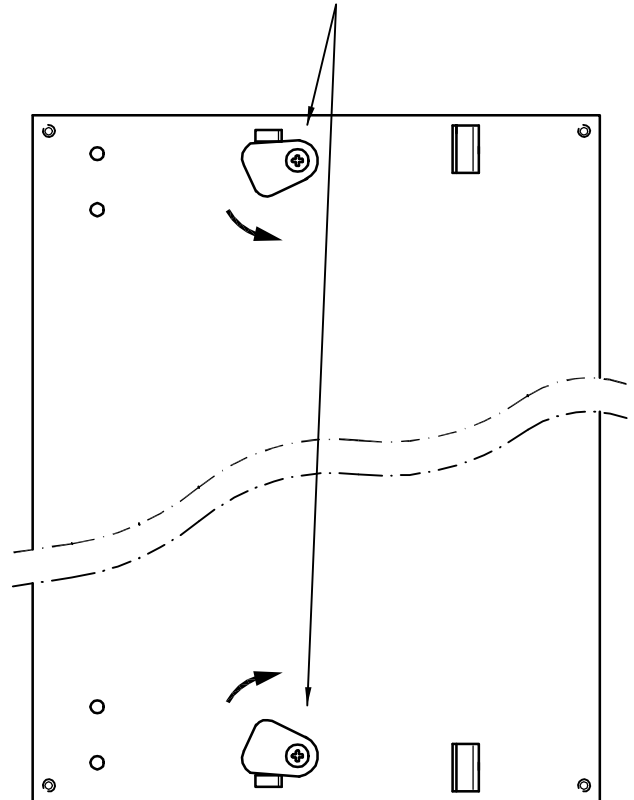
 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	<b>Motherboard for 8 Modules</b> <u>General description</u>		06.02.02			KT			
			Datum	S	TZ	Sach- bearb.	gepr. techn.	gepr. Norm	
			Abt.: PA-VP		Word				
			Part.Nr.: xxxxxx		Ersatz für:			Blatt 2	
					Maßstab:			von 2	

# Installations instructions

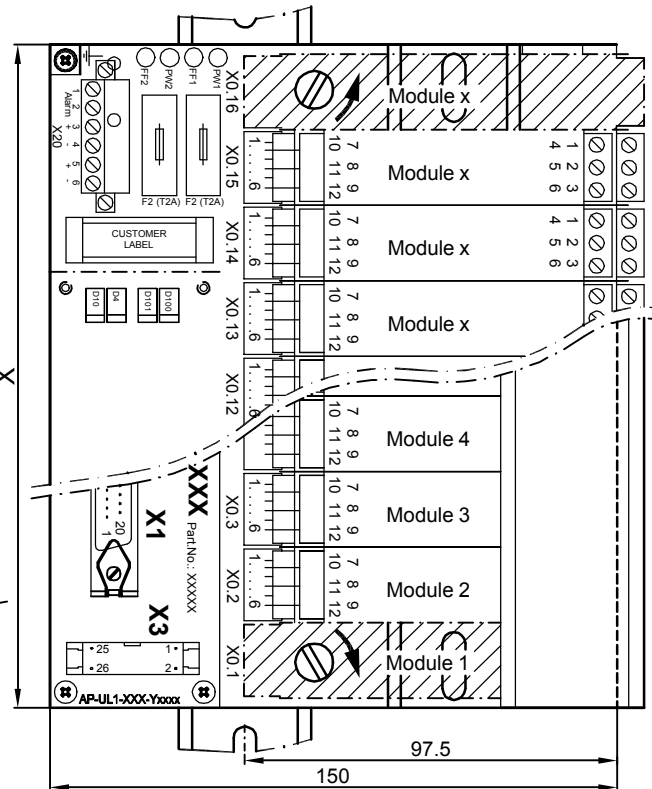
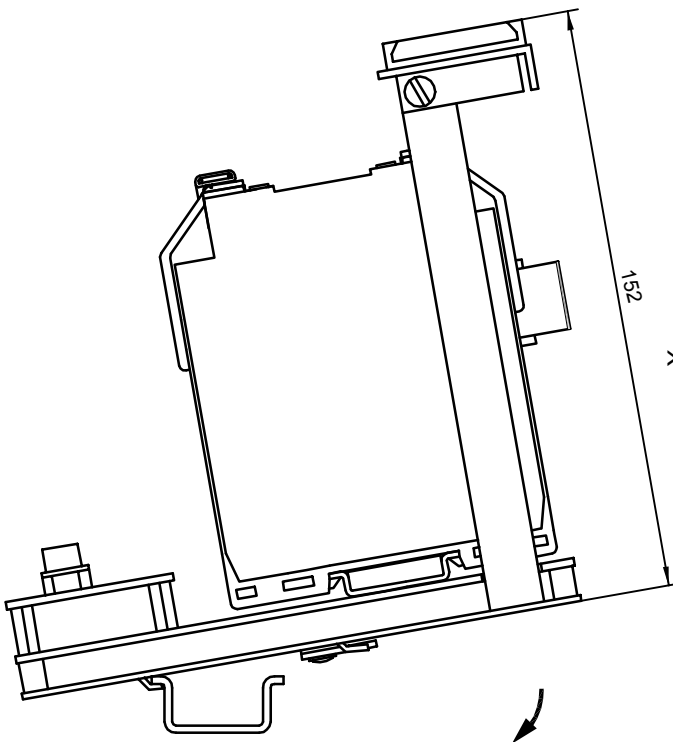
1. Take away first and last module.  
 (4 modules board: Take away only first module and turn table carrier 2 to operate the screw to fix the board on to the DIN rail.)



2. Turn the part as shown to the stopper!



3. Set the board on the DIN rail. Turn the screw as shown till the board is fixed.  
 (Arrows are showing direction how to turn for fixing the board.)



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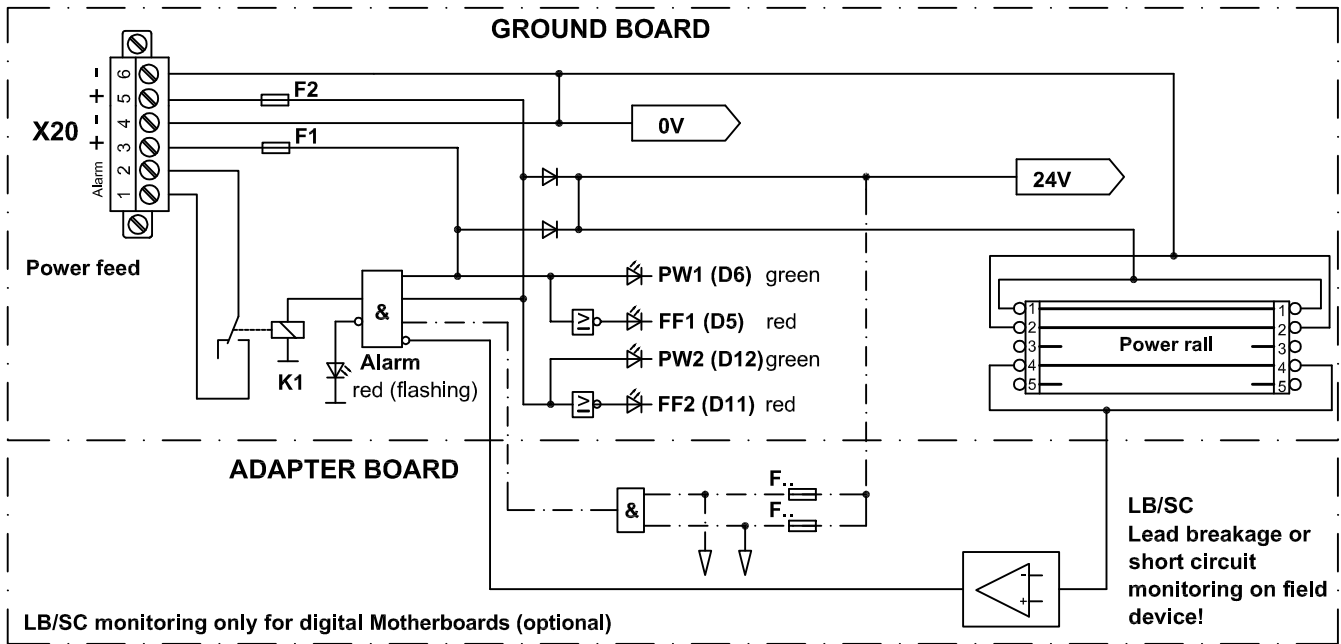


PEPPERL+FUCHS  
 Mannheim-Schönau

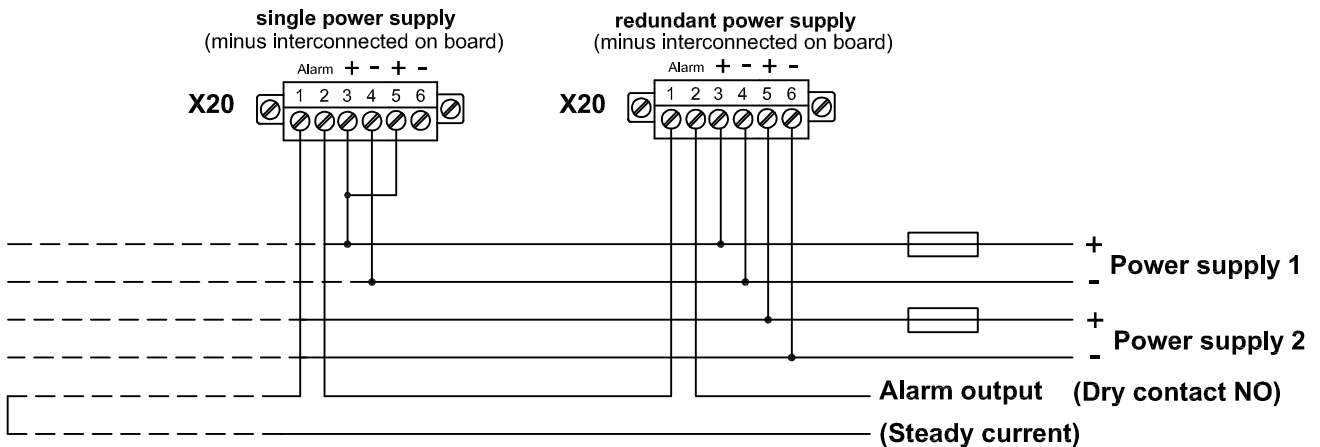
Installations instructions  
 for Motherboards installed  
 in vertical position

07.09.01	KT	vB	Sb/vB		
Date	S	TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	No. <b>36-9159</b>		Ind. <b>B</b>		
Up date: xx.xx.xx	Replaces: xxxxxx / 36-xxxx		Sheet 1		
Scale: -			of 1		

# Block diagram power supply and error message



# Connection power supply and error message



# Error message and Alarm

Power supply 1	Power supply 2	LED red	LED green	X20.1, 2 Alarm contact
PS ON and Fuse 1 OK	PS ON and Fuse 2 OK	D5 OFF D11 OFF	D6 ON D12 ON	contact closed
PS ON and Fuse 1 OK	PS OFF	D5 OFF D11 ON	D6 ON D12 OFF	contact open
PS OFF	PS ON and Fuse 2 OK	D5 ON D11 OFF	D6 OFF D12 ON	contact open
PS ON and Fuse 1 OK	PS ON and Fuse 2 broken	D5 OFF D11 ON	D6 ON D12 OFF	contact open
PS ON and Fuse 1 broken	PS ON and Fuse 2 OK	D5 ON D11 OFF	D6 OFF D12 ON	contact open
PS ON and Fuse 1 broken	PS ON and Fuse 2 broken	D5 OFF D11 OFF	D6 OFF D12 OFF	contact open
PS OFF	PS OFF	D5 OFF D11 OFF	D6 OFF D12 OFF	contact open
In case of LB/SC				contact open

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**PEPPERL+FUCHS**  
Mannheim-Schönau

Block diagram  
Power supply monitoring  
Error message LB/SC  
**MOTHERBOARD MB-4/8/12/16**

04.04.01	vB	Sb	vB/Sb	
Date	S	TZ	Off. in ch.	contr. techn.
Dept.: PA-PG-IF	Nr. <b>36-7143F1</b>			
Up date: 21.04.2010	Replaces: xxxxxxxx/ 36-xxxx		Sheet 1	
xxxxx	Scale:	X : X	of	1



## Intrinsic Safety Termination Assemblies With Galvanic Isolators

Model Number Honeywell	Model Number P+F Motherboards	Description
FSC 10101/2/1 Or SD1-1624	FS-GIPFSDI-1624 16 ch. Digital Input LB/SC monitoring Part No. 119990 Drawing No. 36-7393	16 KFD2-SH-Ex1.T.OP single channel digital input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10101/2/1 module. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFDI-1624Q 16 ch. Digital Input LB/SC monitoring Part No. 119991 Drawing No. 36-7415	4 KFD2-SRA-Ex4 four channel digital input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10101/2/1 module. Dimensions (wxhxd): 125x150x150 mm
FSC 10104/2/1	FS-GIPFDI-3224D 16 + 16 ch. Digital Input LB/SC monitoring Part No. 119992 Drawing No. 36-7365	16 KFD2-SOT2-Ex2 dual channel digital input modules mounted on a motherboard-backplane with two 20 pin AMP connector to the FSC 10104/2/1 module. Dimensions (wxhxd): 325x150x150 mm
FSC 10105/2/1 Or SAI-1620m	FS-GIPFAI-1620m 16 ch. Analog Input HART-connector Part No. 119996 Drawing No. 36-7353	16 KFD2-STC4-Ex1.2O single channel analog input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10105/2/1 module and additional connector for HART communication. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFTEMP-1620m 16 ch. Analog Input Part No. 119999 Drawing No. 36-7424	16 KFD2-UT-Ex1 single channel analog input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10105/2/1 module. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFAI-1620mD 16 ch. Analog Input HART-connector Part No. 119995 Drawing No. 36-7162	8 KFD2-STC4-Ex2 dual channel analog input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10105/2/1 module. Dimensions (wxhxd): 165x150x150 mm
	FS-GIPFFIRE-1624D 16 ch. Analog Input HART-connector Part No. 122064 Drawing No. 36-7425	8 KFD2-CS-EX2.51P dual channel analog input modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 10105/2/1 module. Dimensions (wxhxd): 165x150x150 mm
FSC 10201/2/1 Or SDO-0824	FS-GIPFDO-1624 2 x 8 ch. Digital Output Part No. 119994 Drawing No. 36-7493	16 KFD2-SD2-Ex1.1045 single channel digital input modules mounted on a motherboard-backplane with four 10 pin AMP connector to the the FSC 010201/2/1 module. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFDOH-1624 2 x 8 ch. Digital Output Part No. 122063 Drawing No. 36-7499	16 KFD2-SD2-Ex1.1045 single channel analog output modules mounted on a motherboard-backplane with four 10 pin AMP connector to the FSC 10201/2/1 module. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFDO-0824D 8 ch. Digital Output Part No. 119993 Drawing No. 36-7368	4 KFD2-SL2-Ex2 dual channel digital output modules mounted on a motherboard-backplane with a 20 pin AMP connector to the FSC 010201/2/1 module. Dimensions (wxhxd): 125x150x150 mm

## Intrinsic Safety Termination Assemblies With Galvanic Isolators

Model Number Honeywell	Model Number P+F Motherboards	Description
FSC 10205/2/1 Or SAO-0220	FS-GIPFAO-1620m 2 x 8 ch. Analog Output Part No. 192288 Drawing No. 36-7748	16 KFD2-CD-Ex1.32 single channel analog output modules mounted on a motherboard-backplane with four 10 pin AMP connector to the FSC 10205/2/1 module. Dimensions (wxhxd): 325x150x150 mm
	FS-GIPFAO-1620mD 2 x 8 ch. Analog Output HART-connector Part No. 119998 Drawing No. 36-7414	8 KFD2-SCD2-Ex2.LK dual channel analog output modules mounted on a motherboard-backplane with four 10 pin AMP connector to the FSC 10205/2/1 module and additional connector for HART communication. Dimensions (wxhxd): 165x150x150 mm

Notes:

2. **FSC 10101/2/1 Application**  
**Or SDI-1424 (Safety Manager I/O card)**  
(16 channels DI)

Page

**Motherboard FS-GIPFSDI-1624Q** ..... 2- 1

**Part No.:** 119990  
**Function:** Digital Input  
**Channels:** 16  
**KF- Module:** KFD2-SH-Ex1.T.OP (1 channel)  
**Simplified schematic:** drawing no. 36-6196-1  
**Wiring Diagram:** drawing no. 36-7393

**Motherboard FS-GIPFSDI-1624Q** ..... 2- 5

**Part No.:** 119991  
**Function:** Digital Input  
**Channels:** 16  
**KF- Module:** KFD2-SRA-Ex4 (4 channels)  
**Simplified schematic:** drawing no. 36-6196-5  
**Wiring Diagram:** drawing no. 36-7415

Notes:

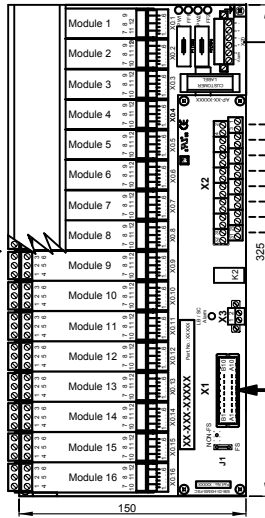
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

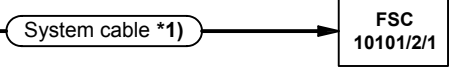
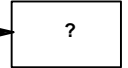
Control room non hazardous area  
DCS I/O



Sensors acc.  
DIN EN 60 947-5-6  
(NAMUR)  
or switch contacts



Power supply 24 VDC (redundant)  
Alarm (dry contact NC)



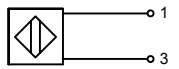
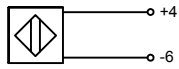
\*1) ... \*2) see table

### LOOP-DIAGRAM (1-channel modules)

Hazardous area (Zone 1)  
Field device

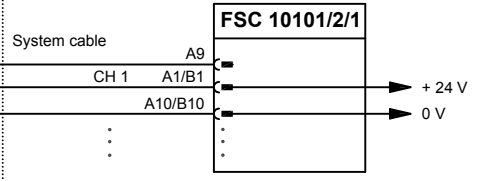
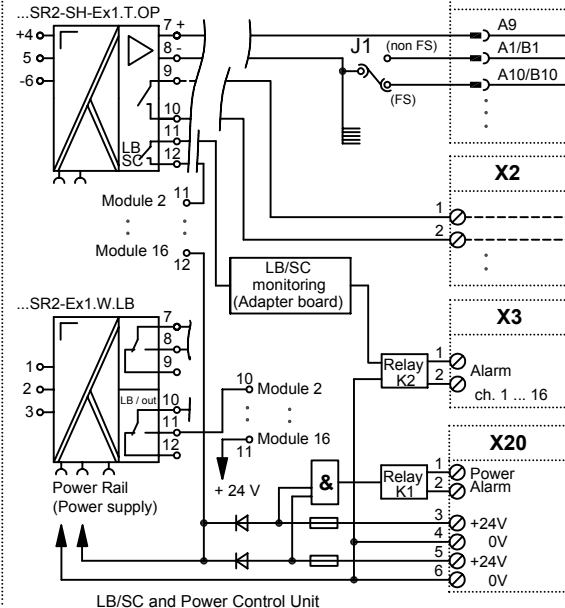
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Transformer isolated barrier:

**KFD2-... (Module see table)**



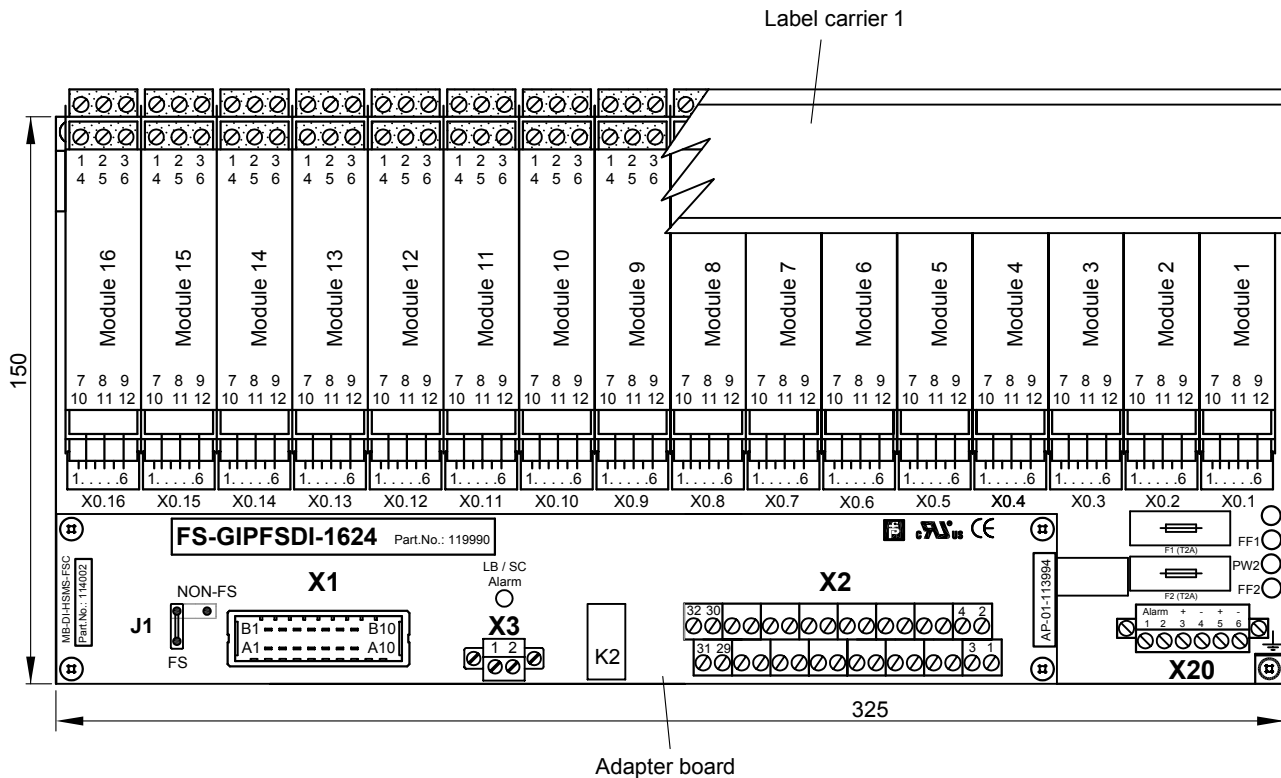
Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFSDI-1624-119990	DI	KFD2-SH-Ex1.T.OP	SIC-C-12	---	LB/SC monitoring
MB-DI-HSMS-FSC-113993	DI	KFD2-SH-Ex1.T.OP	SIC-C-12	---	LB/SC monitoring
MB-DI-HSMS-FSC-113996	DI	KFD2-SR2-Ex1.W.LB	SIC-C-12	---	LB/SC monitoring

13.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm

	<b>APPLICATION FOR HONEYWELL SMS</b>		Dept.: PA - VP	No. <b>36-6196A</b>		
			Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx		Sheet 1
				Scale: 1 : 5	of 5	

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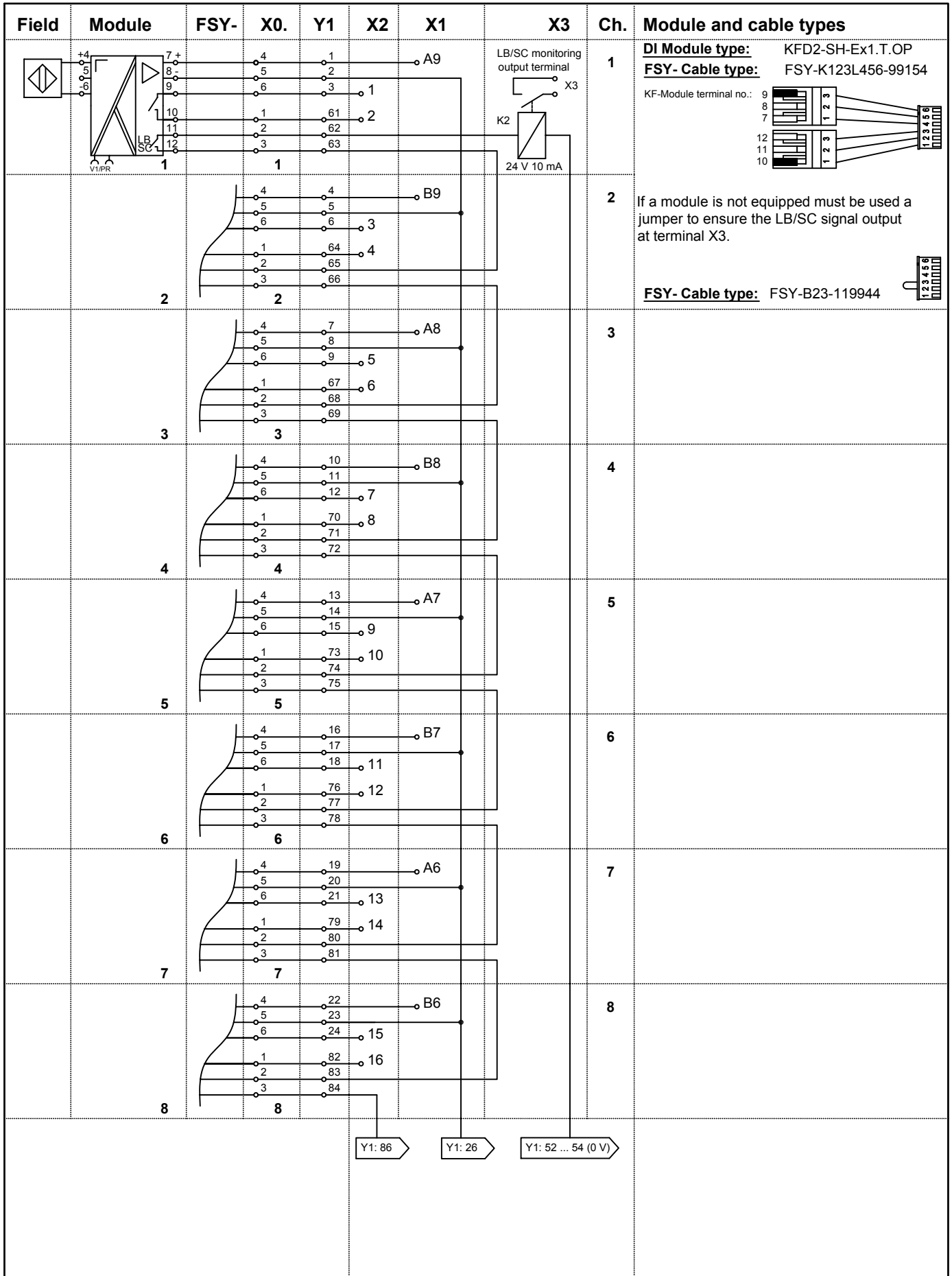


Name	Note
X1	20 pin system connector male AMP: 178328-2
X2	32 pin screw terminals (Second Pick off NONFS)
X3	2 pin screw terminals (LB-Alarm)
K2	relay Alarm LB/SC
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
J1	Jumper to select FS or NONFS KF-Modules
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

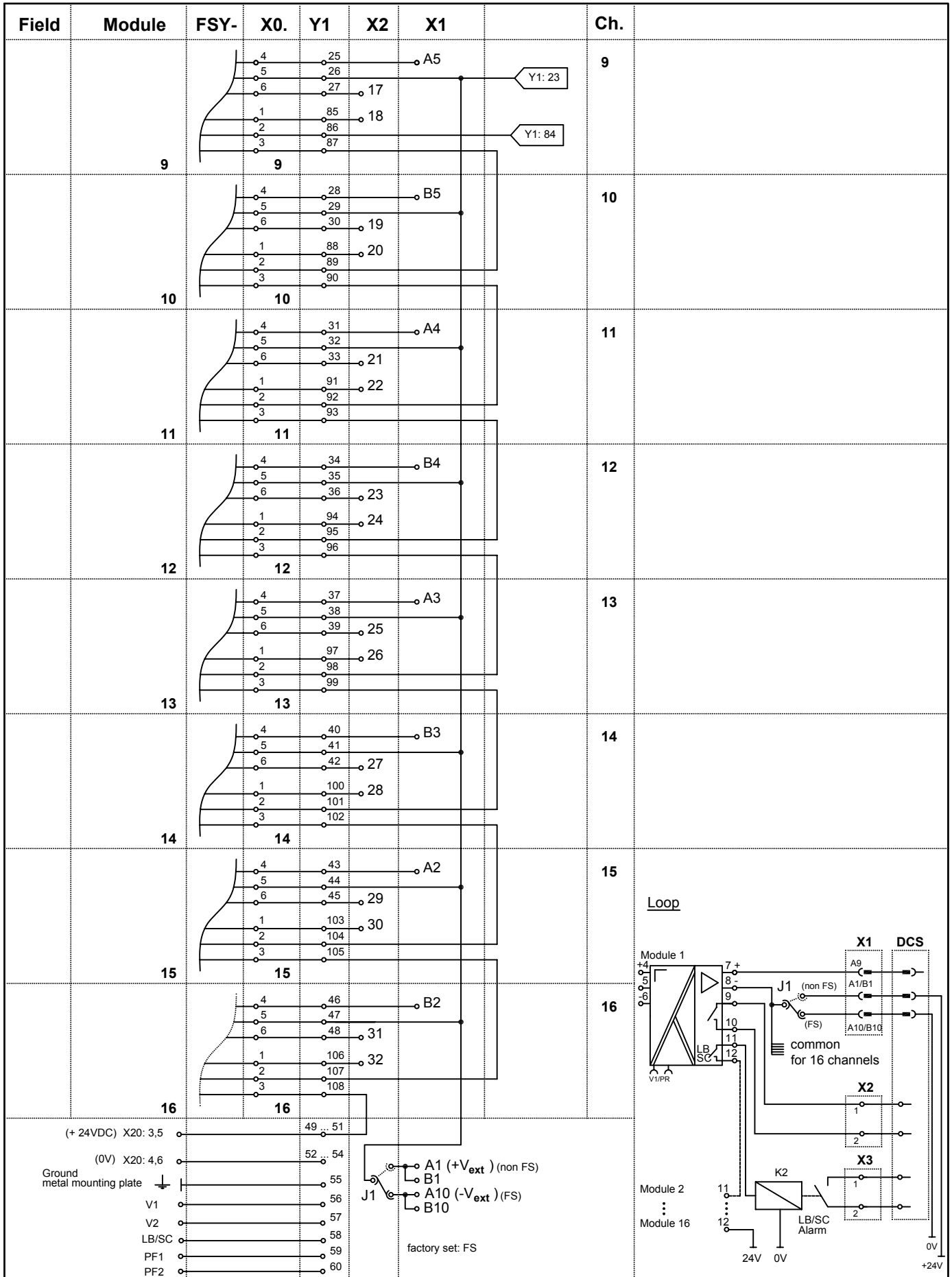
Ordering information: FS-GIPFSDI-1624-119990	
Basic components:	Description
<b>16 pieces:</b>	<b>KFD2-SH-Ex1.T.OP (DI)</b> KF-Module type (function)
<b>1 piece:</b>	<b>MB-DI-HSMS-FSC-114002</b> Motherboard without modules
<b>composed by:</b>	
1 piece:	MB-16U5L-103681 Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-01-113994 Adapter board
1 piece:	KFD0-LC1-16M-99144 Label carrier 1 (optional)
16 pieces:	FSY-K123L456-99154 Cable tree connection KF-Module-Motherboard
(optional, to order separate):	FSY-B23-119944 (not used positions must be filled with link plug FSY-B23-119944)
For standard FTA-terminated system: FSC 10101/2/1 or FSC 10104/2/1	
Interconnection cable: (SIC-C-12)	
Separate power-fail and SC/LB monitoring	
Selector for Fail-safe and Non-fail-safe modules	

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	<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Input - LB/SC monitoring 16 channels - two pick-off <b>FS-GIPFSDI-1624-119990</b>	23.08.01	vB	vB	Sb/vB	
			Date	S	TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	<b>Nr. 36-7393B</b>				
		Up date: 09.05.07	Replaces: xxxxx / 36-xxxx		Sheet 1		
		MB-U5L	Scale:		of 3		



	<b>PEPPERL+FUCHS</b> <b>Mannheim-Schönau</b>	<b>Motherboard unit</b> <b>Digital Input - LB/SC monitoring</b> <b>16 channels - two pick-off</b> <b>FS-GIPFSDI-1624-119990</b>	23.08.01	vB	vB	Sb/vB	
			Date	S	TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. <b>36-7393B</b>				
		Up date: 09.05.07	Replaces: vB xxxxx / 36-xxxx		Sheet 2		
		Scale:		of 3			



23.08.01	vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. Norm
Dept.: PA-VP	vB		Nr. <b>36-7393B</b>	
Up date: 09.05.07	Replaces: xxxxx / 36-xxxx		Sheet 3	
Scale:			of 3	



Motherboard unit  
Digital Input - LB/SC monitoring  
16 channels - two pick-off  
**FS-GIPFSDI-1624-119990**

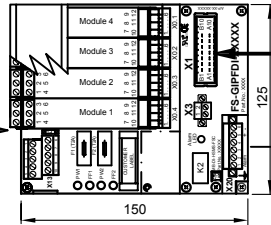
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Sensors acc.  
DIN EN 60 947-5-6  
(NAMUR)  
or switch contacts



System cable \*1)

FSC 10101/2/1

Power supply 24 VDC (redundant)  
Alarm (dry contact NC)

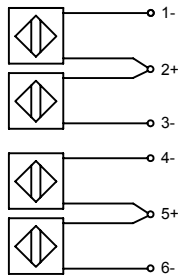
\*1) ... \*2) see table

#### LOOP-DIAGRAM (4-channel modules)

Hazardous area (Zone 1)  
Field device

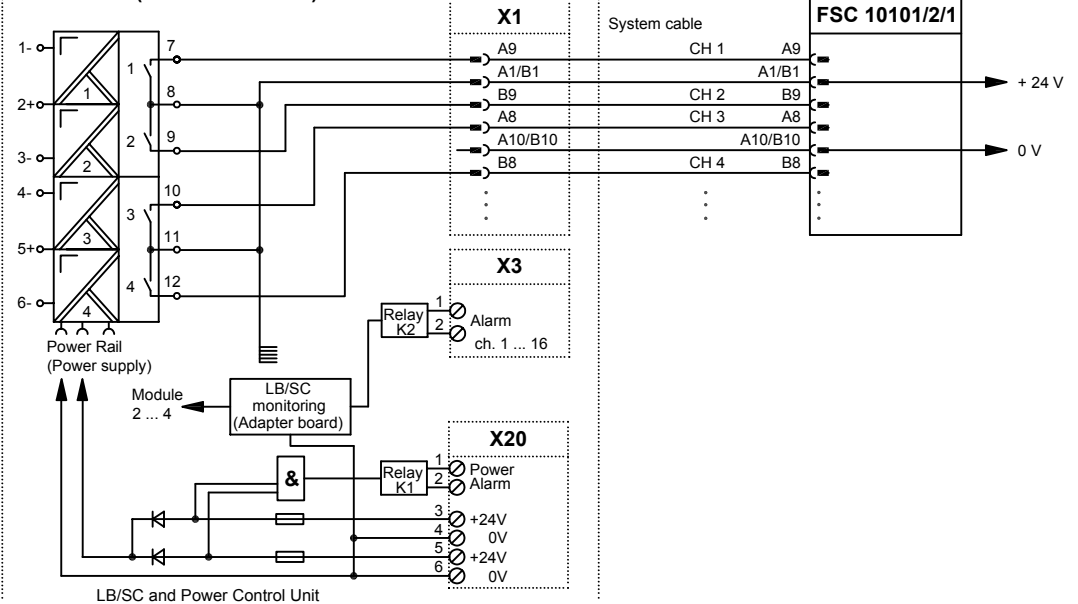
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Transformer isolated barrier:

KFD2-... (Module see table)



Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFDI-1624Q-119991	DI	KFD2-SRA-Ex4	SIC-C-12	---	LB/SC monitoring

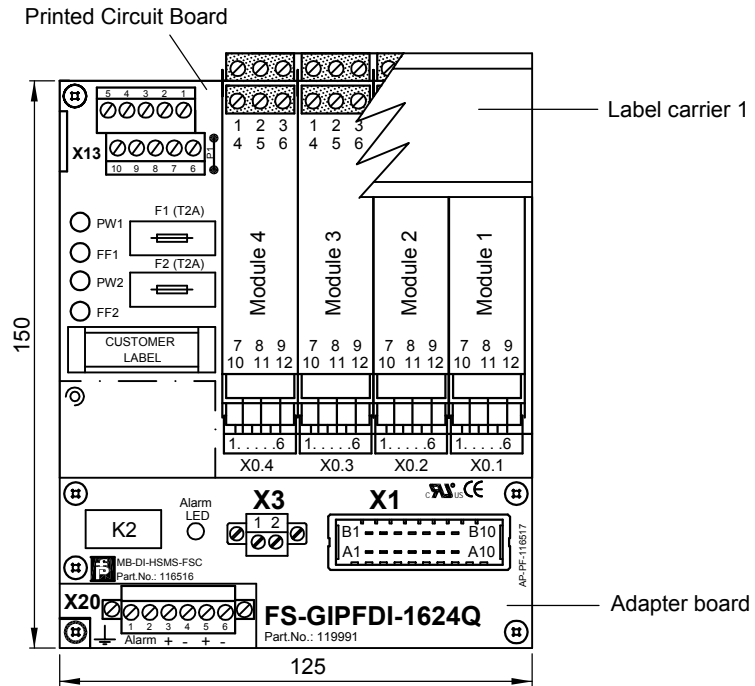
26.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. <b>36-6196a</b>			
Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx			Sheet 5
	Scale: 1 : 5	of 5		

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PEPPERL+FUCHS  
Mannheim-Schönau

APPLICATION FOR  
HONEYWELL SMS

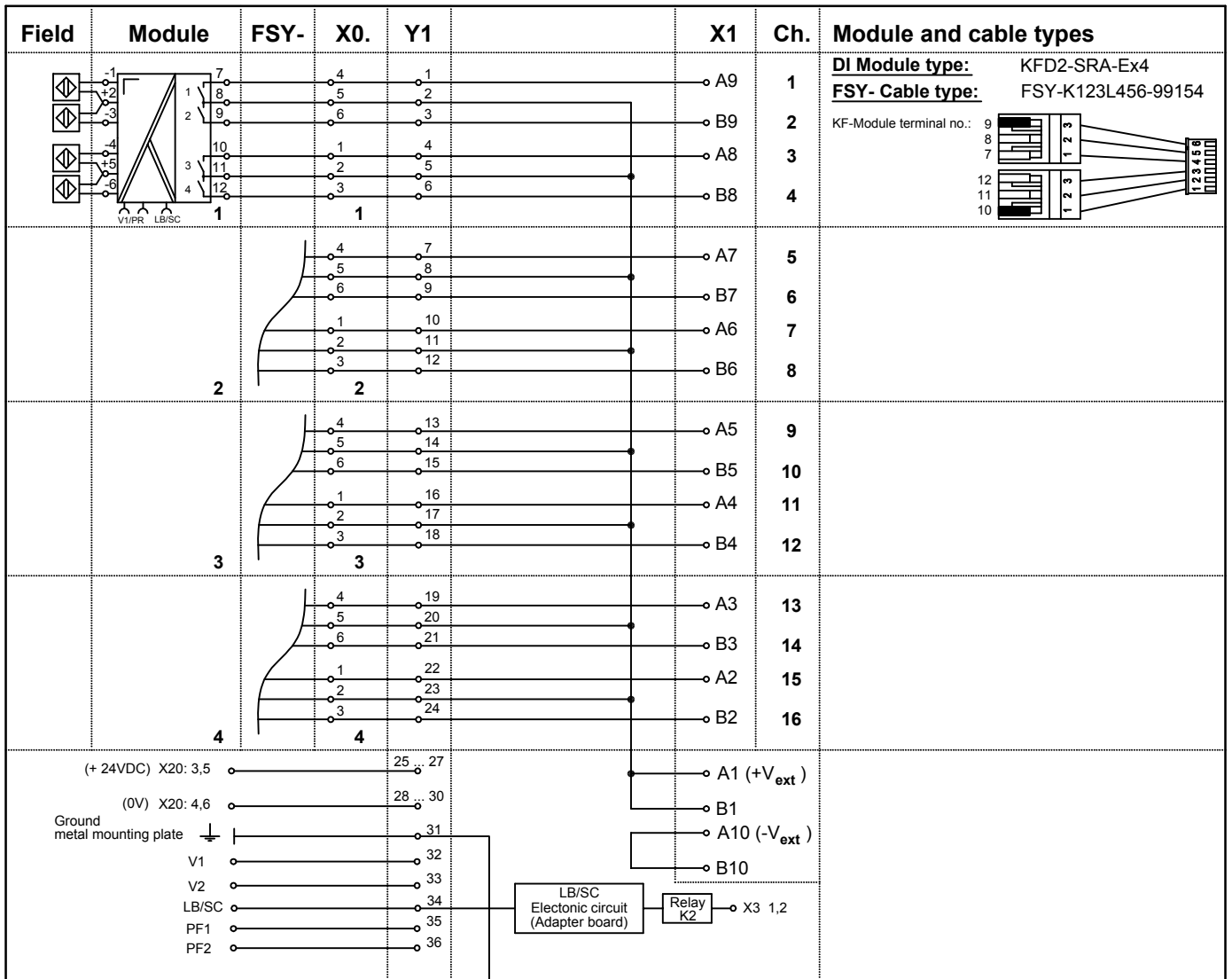


Name	Note
X1	20 pin system connector male AMP: 178328-2
X3	2 pin screw terminals (LB-Alarm)
X13	10 pin shilding block terminal for IS cables
K2	relay
X0.1 .... 4	6 pin male terminals for cable tree FSY....
X20.3 .... 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure
PR-03	Power Rail with 3 conductors

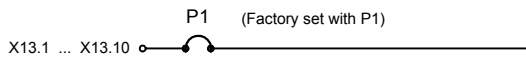
Ordering information: FS-GIPFDI-1624Q-119991	
Basic components:	Description
4 pieces: KFD2-SRA-Ex4 (DI)	KF-Module type (function)
1 piece: MB-DI-HSMS-FSC-116516	Motherboard without modules
composed by:	
1 piece: MB-4U1-98838	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-PF-116517	Adapter board
1 piece: KFD0-LC1-4M-99110	Label carrier 1 (optional)
4 pieces: FSY-K123L456-99154	Cable tree connection KF-Module-Motherboard
For standard FTA-terminated system: FSC 10101/2/1 or FSC 10104/2/1 (DI) with system cable 1 x SIC-C-12	

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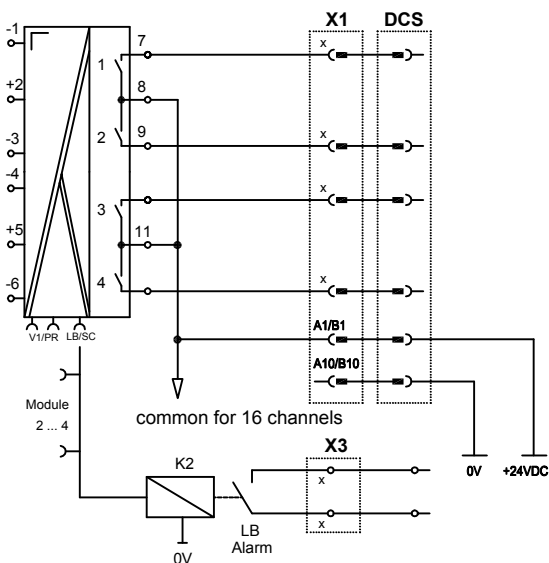
	<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Input 16 channels <b>FS-GIPFDI-1624Q-119991</b>	28.08.02	KT	vB	vB			
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm	
			Dept.:	PA-VP	Nr. <b>36-7415A</b>				
			Up date:	Sch/Bro 23.01.04	Replaces: xxxxxx / 36-xxxx			Sheet 1	
		MB-4U1	Scale:	1 : 2	of 2				



**Shielding**



Loop:



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	Date		06.11.01	KT	Sb	Sb/vB	
	Date		S	TZ	Off. in ch.	contr. techn.	contr. Norm
	Dept.: PA-VP		Sch/Bro 23.01.04		Replaces: xxxxx / 36-xxxx		Nr. <b>36-7415A</b>
Up date:				Scale:		Sheet 2 of 2	

Motherboard unit  
 Digital Input  
 16 channels  
**FS-GIPFDI-1624Q-119991**



Notes:

### 3. FSC 10104/2/1 Application

(16 channels or 16 + 16 channels DI)

	Page
<b>Motherboard FS-GIPFDI-3224D</b> .....	3- 1
<b>Part No.:</b>	119992
<b>Function:</b>	Digital Input
<b>Channels:</b>	16 + 16
<b>KF- Module:</b>	KFD2-SOT2-Ex2 (2 channels)
<b>Simplified schematic:</b>	drawing no. 36-6198-3
<b>Wiring Diagram:</b>	drawing no. 36-7365

Notes:

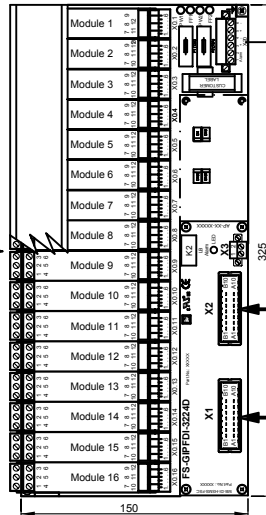
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Sensors acc.  
DIN EN 60 947-5-6  
(NAMUR)  
or switch contacts



Power supply 24 VDC (redundant)  
Alarm (dry contact NC)

System cable \*1) → FSC 10104/2/1

System cable \*1) → FSC 10104/2/1

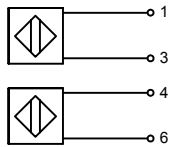
\*1) ... \*2) see table

### LOOP-DIAGRAM (2-channel modules)

Hazardous area (Zone 1)  
Field device

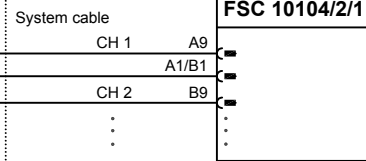
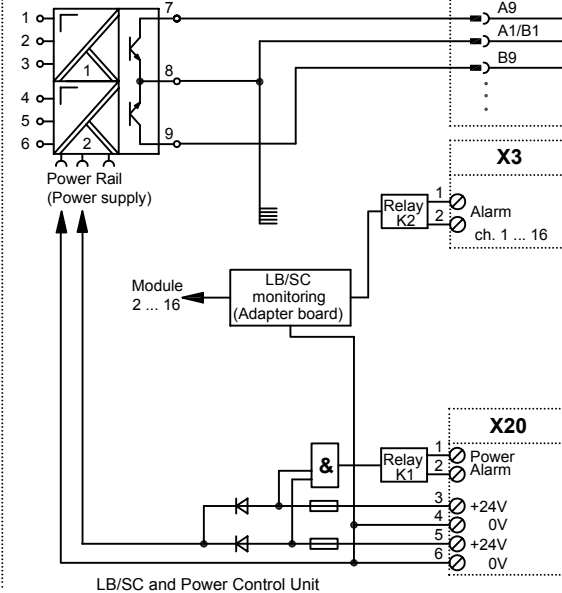
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Transformer isolated barrier:

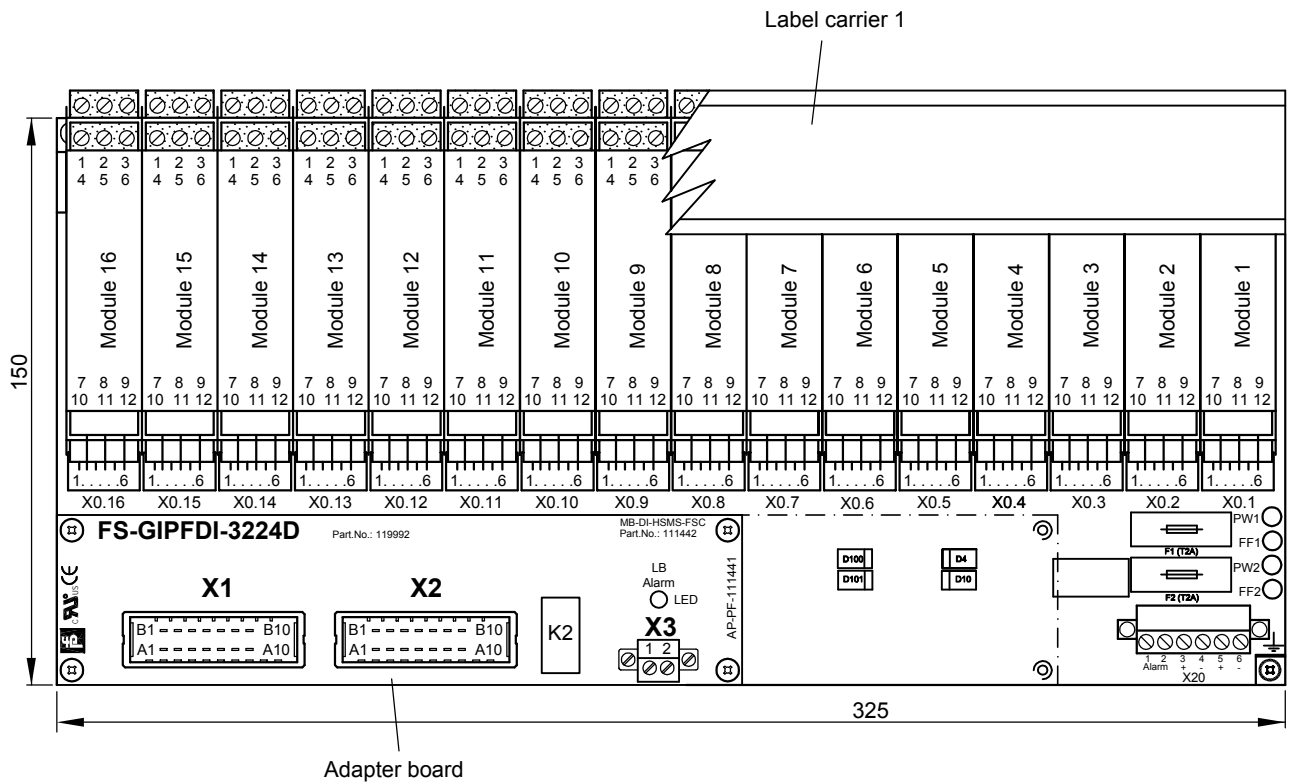
KFD2-... (Module see table)



LB/SC and Power Control Unit

Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFDI-3224D-119992	DI	KFD2-SOT2-Ex2	2 x SIC-C-12	---	LB/SC monitoring


26.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm

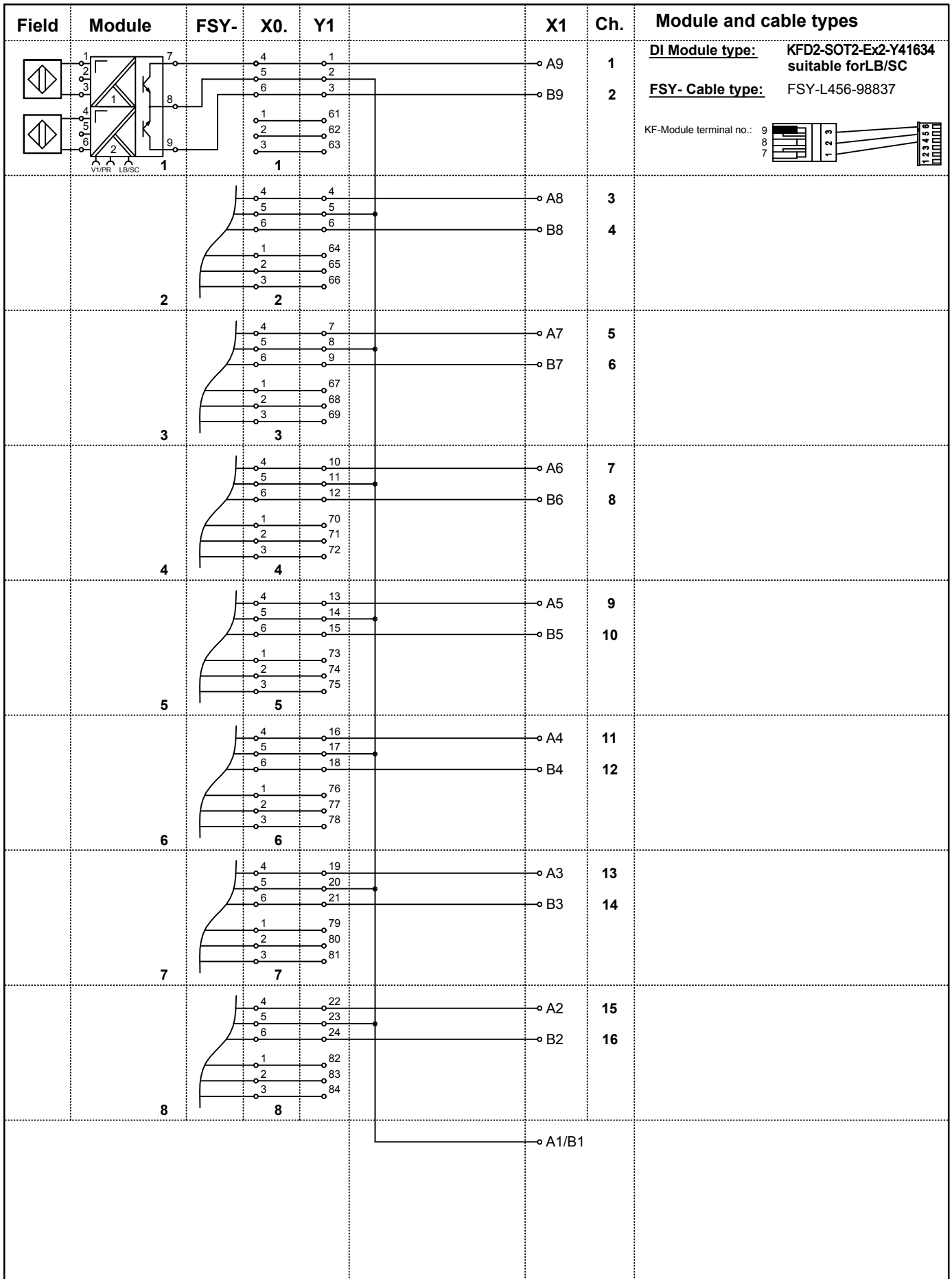


Name	Note
X1, X2	20 pin system connector male AMP: 178328-2
X3	2 pin screw terminals (LB-Alarm)
K2	relay
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure
PR-03	Power Rail with 3 conductors

Ordering information: FS-GIPFDI-3224D-119992			
Basic components:	Description	Part.No.:	
<b>16 pieces:</b>	<b>KFD2-SOT2-Ex2 (DI)</b>	KF-Module type (function)	109563
<b>1 piece:</b>	<b>MB-DI-HSMS-FSC-111442</b>	Motherboard without modules	111442
<b>composed by:</b>			
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier	103681
1 piece:	AP-PF-111441	Adapter board	111441
1 piece:	KFD0-LC1-16M	Label carrier 1 (optional)	99144
16 pieces:	FSY-L456-98837	Cable tree connection KF-Module-Motherboard	98837
For standard FTA-terminated system: 2 x FSC 10104/2/1 interconnection cable: (2 x SIC-C-12) Separate power-fail and SC/LB monitoring			

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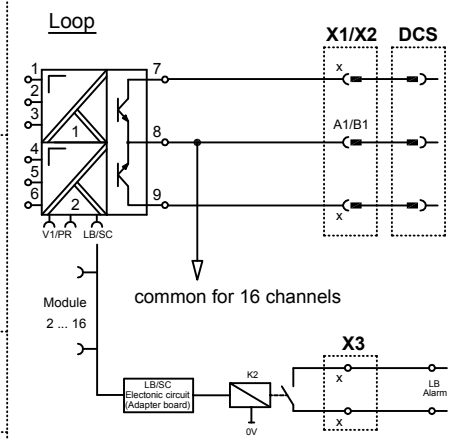
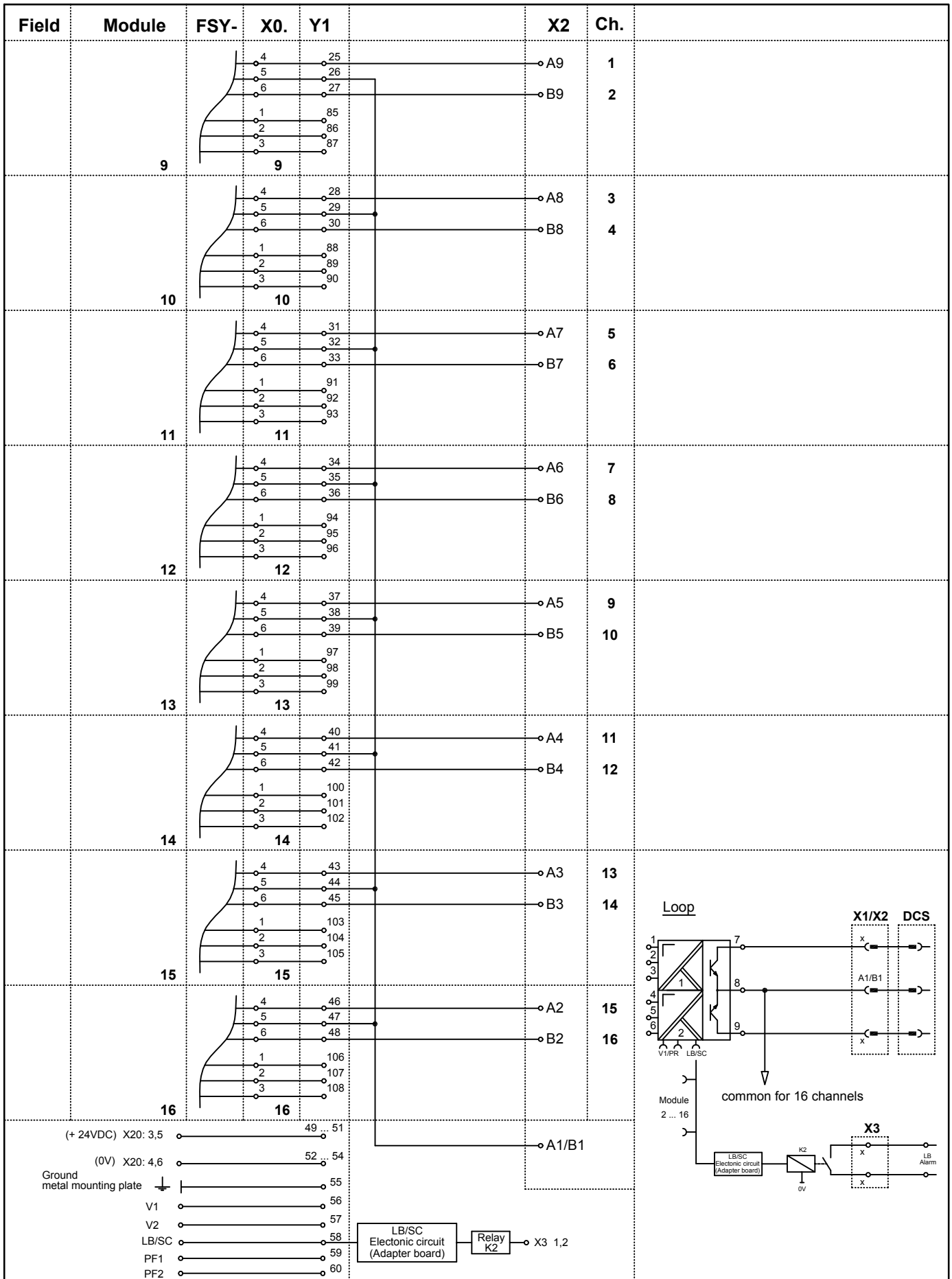
 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Input 16+16 channels <b>FS-GIPFDI-3224D-119992</b>	28.08.02	KT	vB	Sb/vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. <b>36-7365</b>				
		Up date: 26.11.03	Replaces: 45130 / 36-2735			Sheet 1	
		MB-U5L	Scale: 1 : 2	of 3			



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	Motherboard unit Digital Input 16+16 channels <b>FS-GIPFDI-3224-119992</b>		26.03.01	KT	vB	Sb/vB	
	Date	S TZ	Off. in ch.	contr. techn.	contr. Norm		
	Dept.: PA-VP	<b>Nr. 36-7365</b> C: vB/KT Up date: 04.09.02 Replaces: 45130 / 36-2735		Scale:	Sheet 2	of 3	





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<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Input 16+16 channels <b>FS-GIPFDI-3224-119992</b>	26.03.01	KT	vB	Sb/vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	<b>Nr. 36-7365</b>			
		Up date: 04.02.03	Replaces: 45130 / 36-2735		Sheet 3	
		Scale:				of 3

## 4. FSC 10105/2/1 Application

### Or SAI-1620m (Safety Manager I/O card)

(16 channels AI)

	Page
<b>Motherboard FS-GIPFAI-1620m</b> .....	4- 1
<b>Part No.:</b>	119996
<b>Function:</b>	Analog Input + HART
<b>Channels:</b>	16
<b>KF- Module:</b>	KFD2-STC4-Ex1 (1 channel)
<b>Simplified schematic:</b>	drawing no. 36-6199-1
<b>Wiring Diagram:</b>	drawing no. 36-7353
<b>Motherboard FS-GIPFTEMP-1620m</b> .....	4- 5
<b>Part No.:</b>	119999
<b>Function:</b>	Analog Input
<b>Channels:</b>	16
<b>KF- Module:</b>	KFD2-UT-Ex1 (1 channel)
<b>Simplified schematic:</b>	drawing no. 36-6199-1
<b>Wiring Diagram:</b>	drawing no. 36-7424
<b>Motherboard FS-GIPFAI-1620mD</b> .....	4- 9
<b>Part No.:</b>	119995
<b>Function:</b>	Analog Input + HART
<b>Channels:</b>	16
<b>KF- Module:</b>	KFD2-STC4-Ex1 (1 channel)
<b>Simplified schematic:</b>	drawing no. 36-6199-2
<b>Wiring Diagram:</b>	drawing no. 36-7162
<b>Motherboard FS-GIPFFIRE-1624D</b> .....	4- 13
<b>Part No.:</b>	122064
<b>Function:</b>	Analog Input
<b>Channels:</b>	16
<b>KF- Module:</b>	KFD2-CS-Ex2.51P (2 channels)
<b>Simplified schematic:</b>	drawing no. 36-6199-3
<b>Wiring Diagram:</b>	drawing no. 36-7425

Notes:

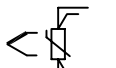
**Hazardous area (Zone 1)  
Field device**

**Control room or hazardous area (Zone 2)  
Motherboard**

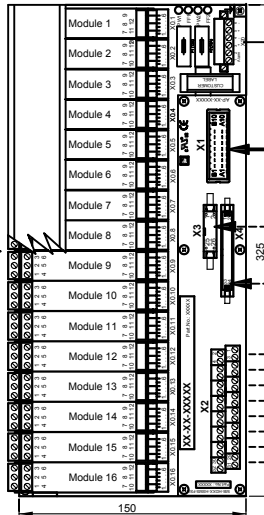
**Control room non hazardous area  
DCS I/O**



2-, 3-wire Transmitter  
(0/4 ... 20 mA)



2-, 3-, 4-wire  
PT100  
Thermocouple



Power supply 24 VDC (redundant)  
Alarm (dry contact NC)

System cable \*1)

Cable type K-HM26 \*2)

Cable type K-HM26 \*2)

FSC  
10105/2/1

HART-  
Multiplexer

FLK

?

In use with  
KFD2-STC4-Ex1.2O only

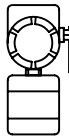
\*1) ... \*2) see table

### LOOP-DIAGRAM (1-channel modules)

**Hazardous area (Zone 1)  
Field device**

**Control room or hazardous area (Zone 2)  
Motherboard**

**Control room non hazardous area  
DCS I/O**



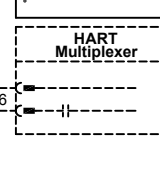
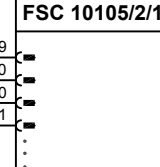
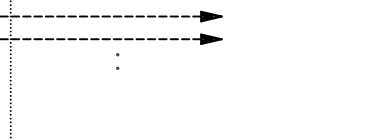
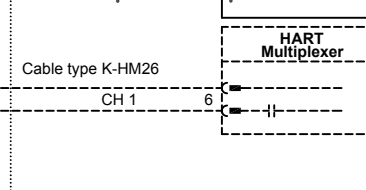
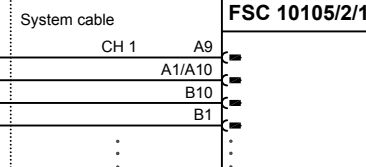
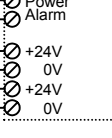
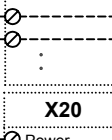
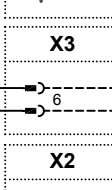
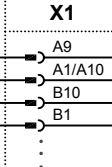
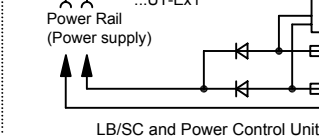
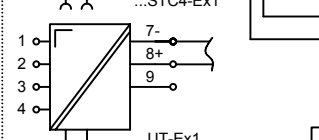
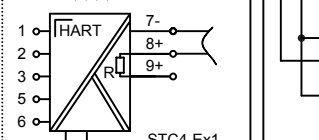
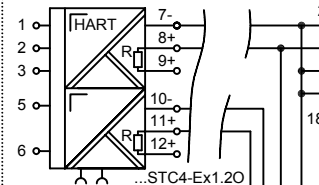
1+  
2-  
3



No HART-communication

Transformer isolated barrier:

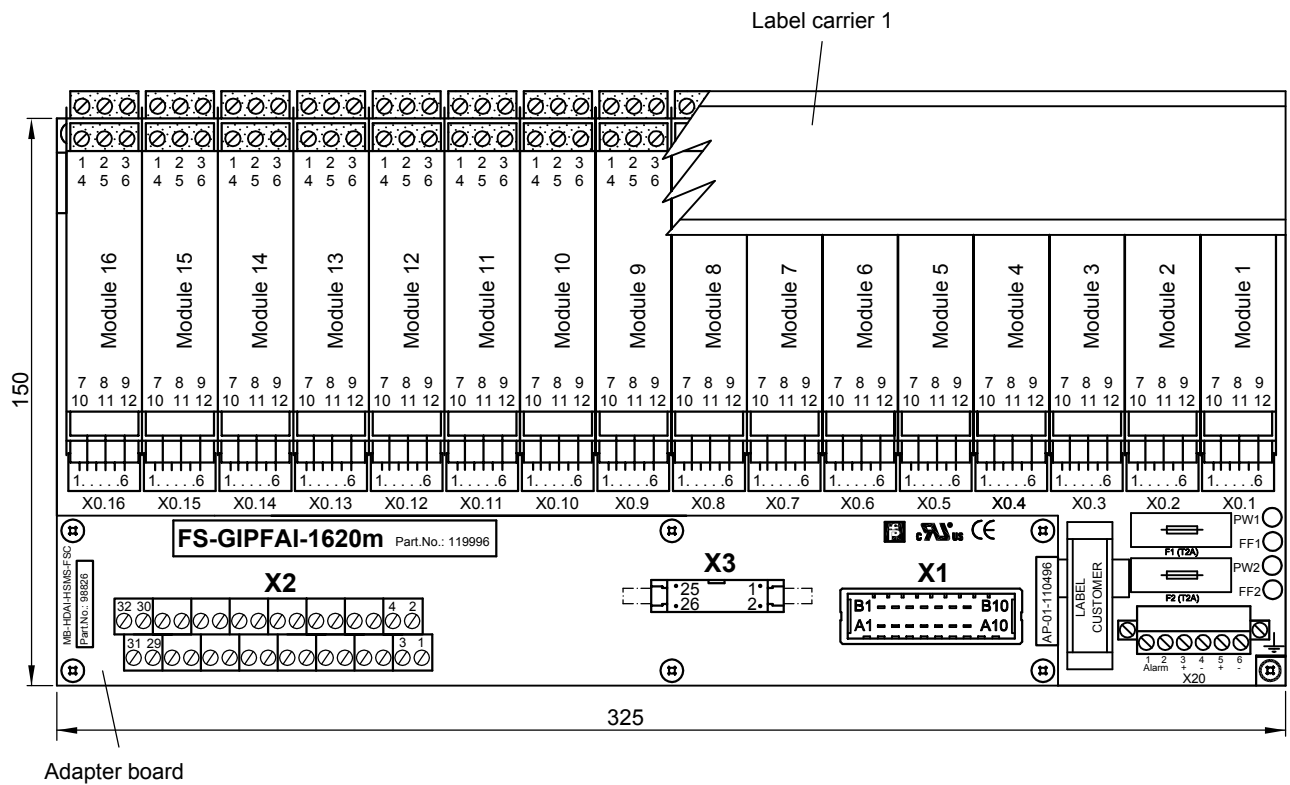
KFD2-... (Module see table)



LB/SC and Power Control Unit

Motherboard	Signal	Module	System cable *1)	HART communication *2)	FLK communication *1)
FS-GIPFAI-1620m-119996	AI	KFD2-STC4-Ex1.2O	SIC-C-12	yes	no
MB-HDAI-HSMS-FSC-113985	AI	KFD2-STC4-Ex1	SIC-C-12	yes	no
FS-GIPFTEMP-1620m-119999	AI	KFD2-UT-Ex1	SIC-C-12	no	no

26.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm

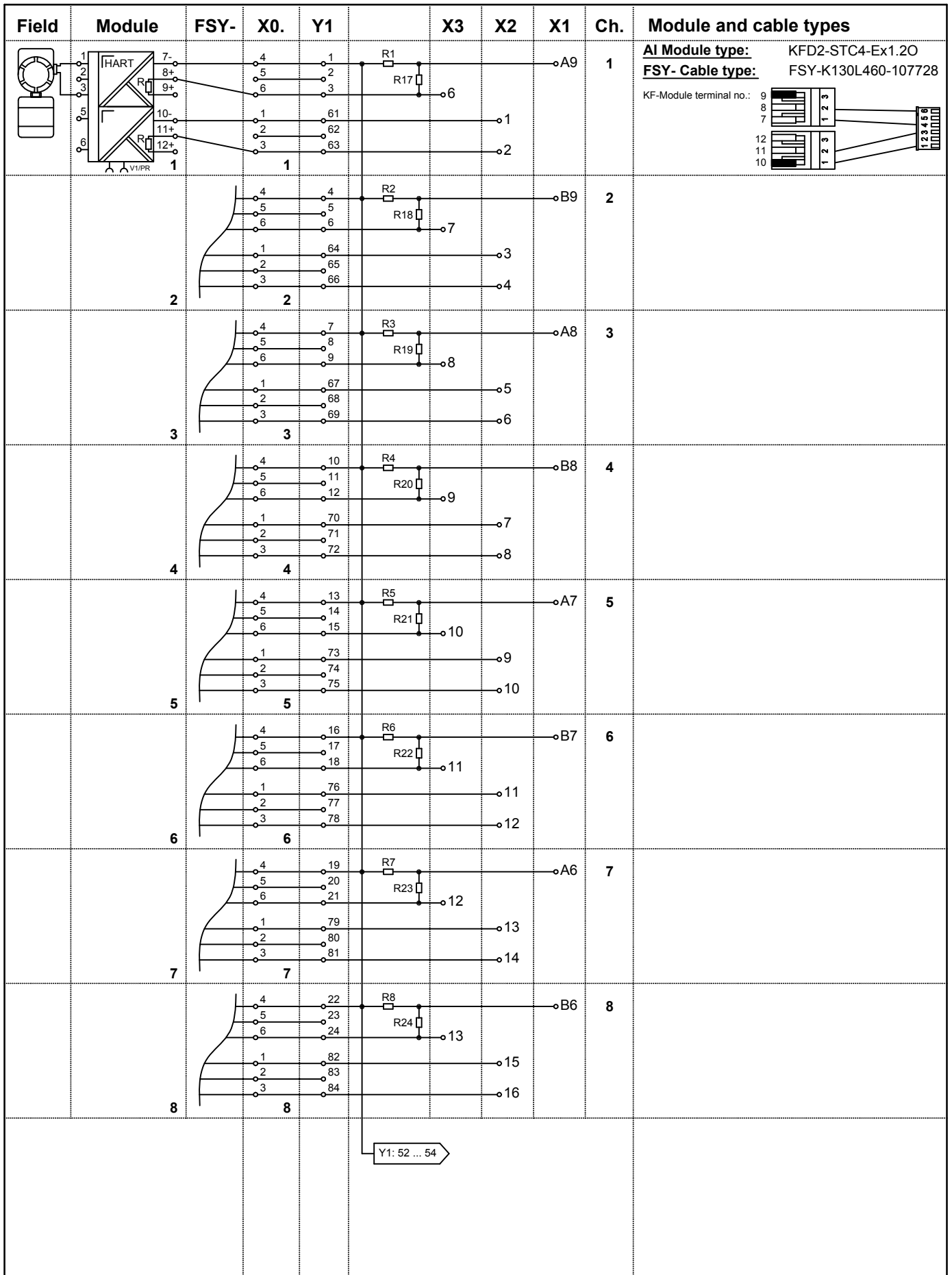


Name	Note
X1	20 pin system connector male AMP: 178328-2
X2	32 pin screw terminals
X3	26 pin HART connector male
----	----
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: FS-GIPFAI-1620m-119996	
<b>Basic components:</b>	<b>Description</b>
<b>16 pieces:</b>	<b>KFD2-STC4-Ex1.20 (AI)</b> KF-Module type (function)
<b>1 piece:</b>	<b>MB-HDAI-HSMS-FSC-98826</b> Motherboard without modules
<b>composed by:</b>	
1 piece: MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-01-110496	Adapter board
16 pieces: FSY-K130L460-107728	Cable tree connection KF-Module-Motherboard
<b>1 piece:</b>	<b>1 piece: KFD0-LC1-16M-99144</b> Label carrier 1 (optional, order additional!)
For standard FTA-terminated system: FSC 10105/2/1 Interconnection cable: (SIC-C-12)	

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<b>PF</b>	<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Input - HART 16 channels - two pick-off <b>FS-GIPFAI-1620m-119996</b>	25.04.01	DN	vB	vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	<b>Nr. 36-7353B</b>			
			Up date: 25.02.04	Replaces: xxxxx / 36-xxxx	Sheet 1		
		MB-16U5L	Scale: 1 : 2	of 3			

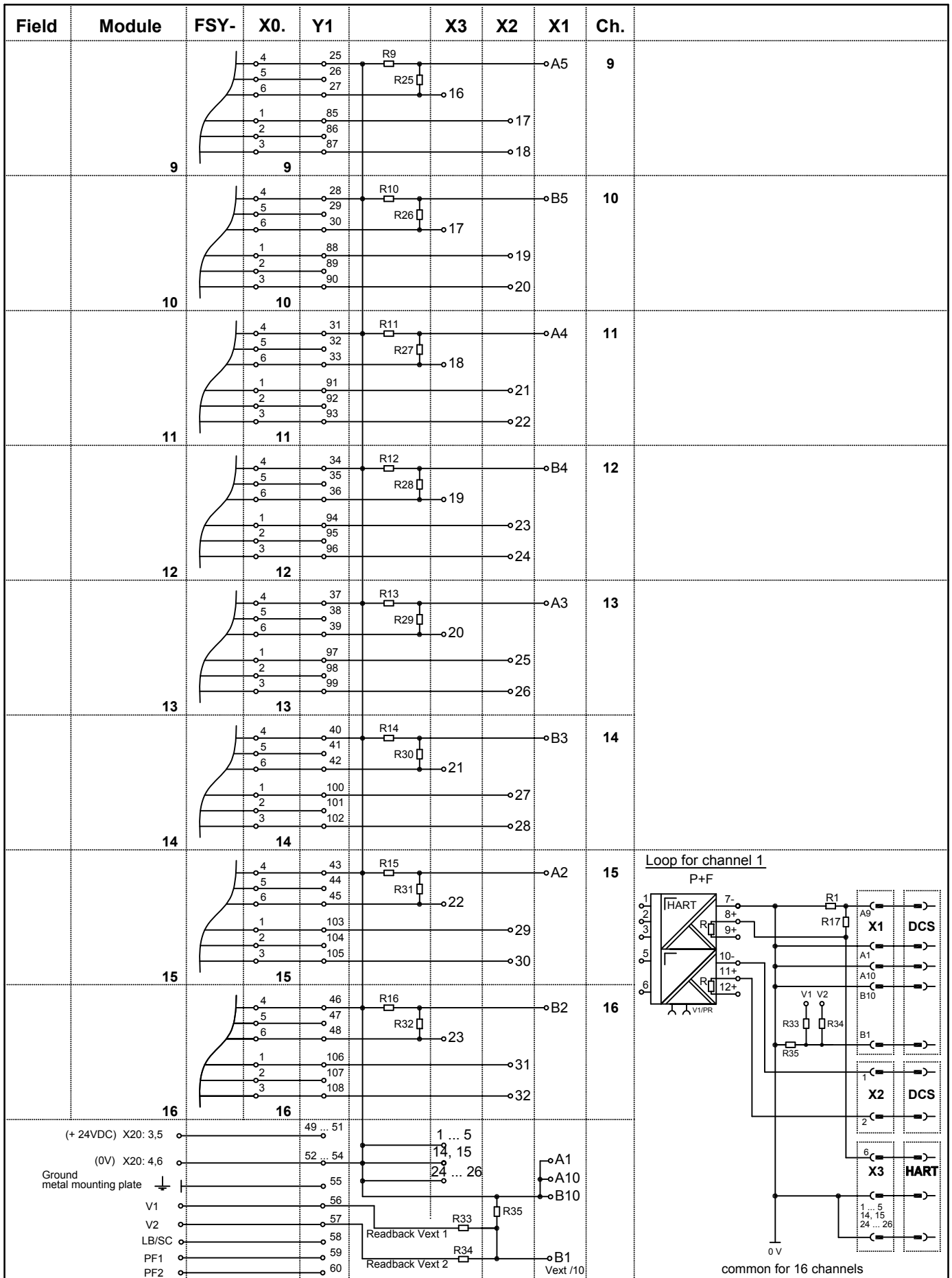


Y1: 52 ... 54

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	26.03.01		DN	vB	vB	
	Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	Dept.:	PA-VP		<b>Nr. 36-7353B</b>		
	Up date:	vB/Bro 25.02.04		Replaces:	xxxxx/ 36-xxxx	Sheet 2
	MB-16U5L	Scale:		- : -	of 3	

Motherboard unit  
 Analog Input - HART  
 16 channels - two pick-off  
**FS-GIPFAI-1620m-119996**



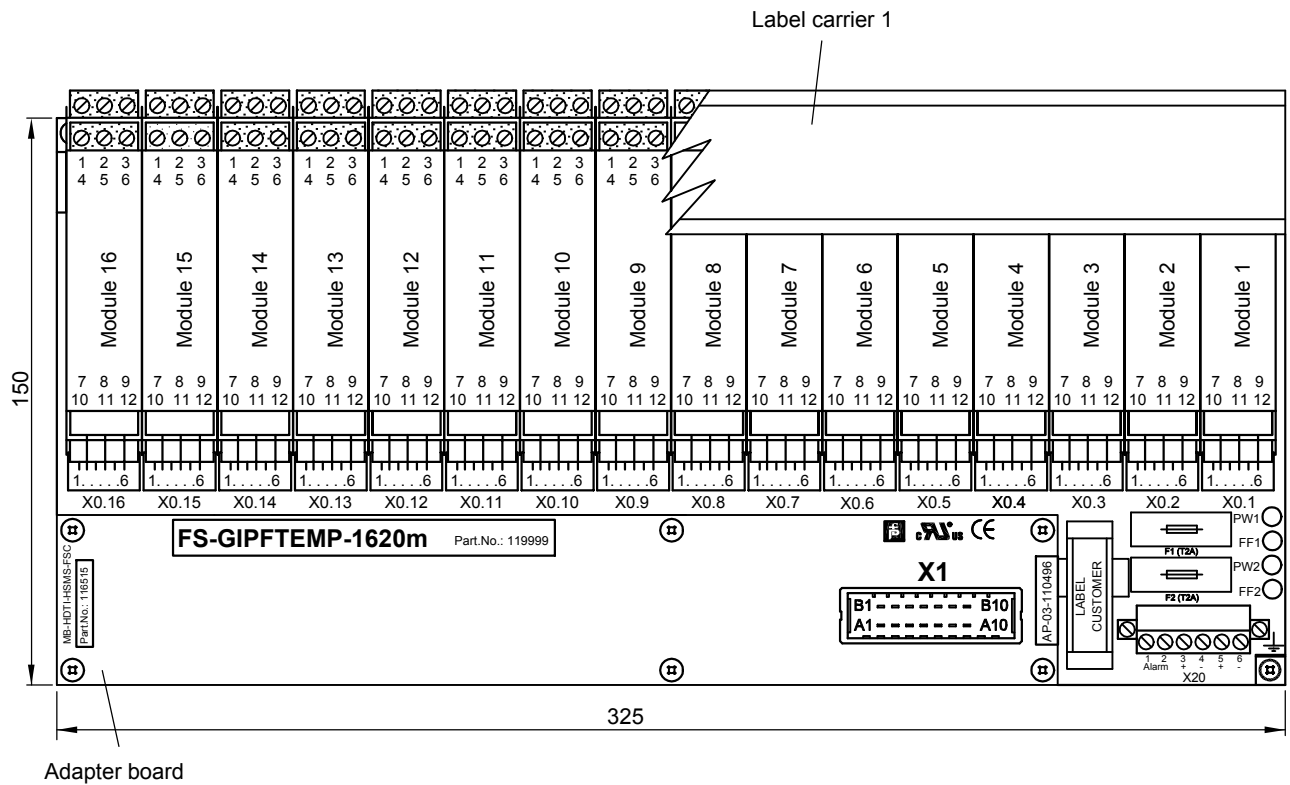
R1 ... R16 = 165 Ohm 0,1%    R35 = 1 kOhm 1%  
 R17 ... R32 = 75 Ohm 0,1%  
 R33, R34 = 18,2 kOhm 1%

26.03.01		DN	vB	vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP		<b>Nr. 36-7353B</b>			
Up date: vB/Bro 25.02.04		Replaces: xxxxx/ 36-xxxx		Sheet 3	
MB-16U5L		Scale: - : -		of 3	



**PEPPERL+FUCHS**  
 Mannheim-Schönau


Motherboard unit  
 Analog Input - HART  
 16 channels - two pick-off  
**FS-GIPFAI-1620m-119996**



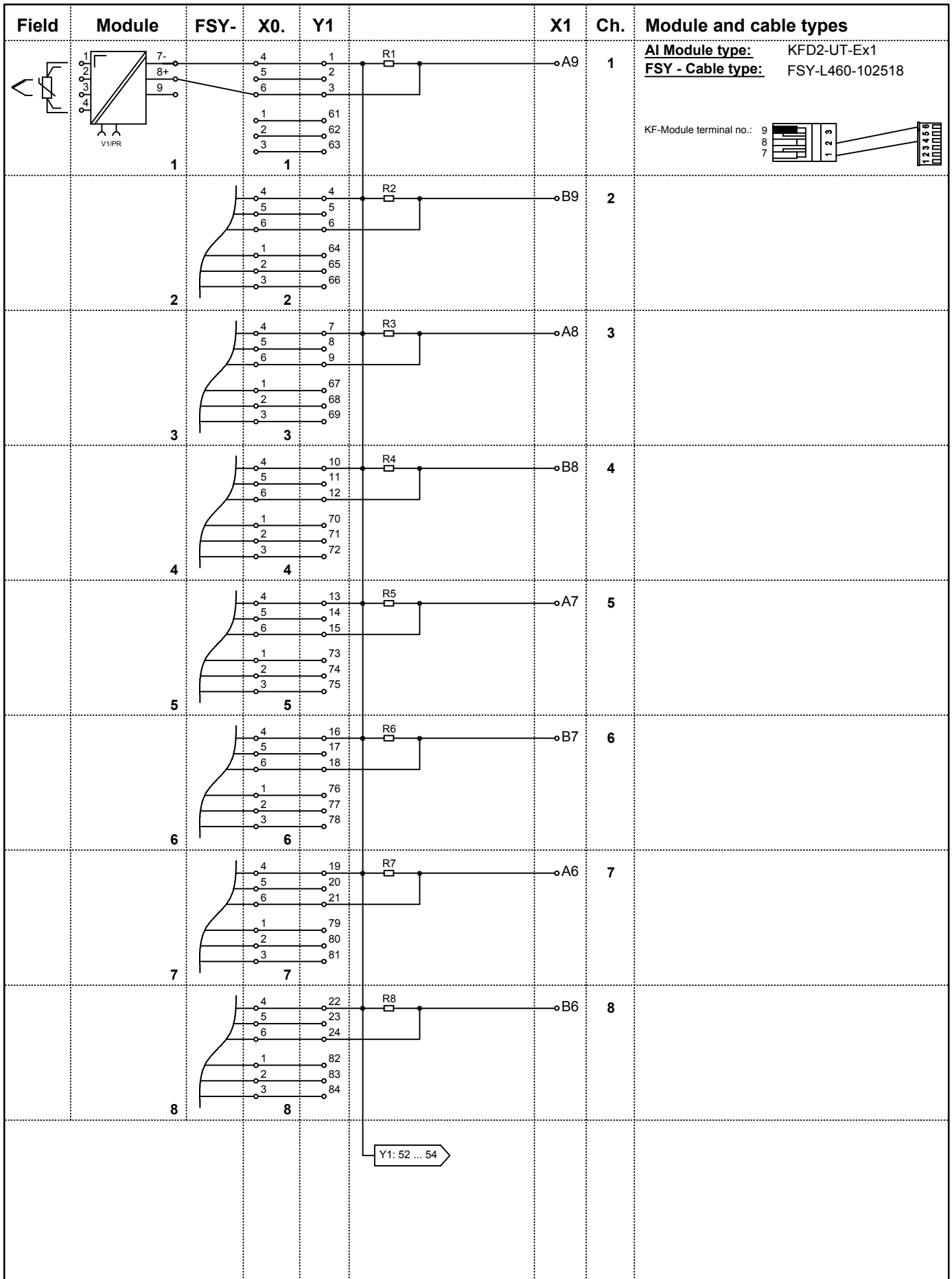
Name	Note
X1	20 pin system connector male AMP: 178328-2
----	----
----	----
----	----
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: FS-GIPFTEMP-1620m-119999			
Basic components:	Description	Part.No.:	
<b>16 pieces:</b>	<b>KFD2-UT-Ex1 (AI)</b>	KF-Module type (function)	104016
<b>1 piece:</b>	<b>MB-HDTI-HSMS-FSC-116515</b>	Motherboard without modules	116515
<b>composed by:</b>			
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier	103681
1 piece:	AP-03-110496	Adapter board	110496
1 piece:	KFD0-LC1-16M	Label carrier 1 (optional)	99144
16 pieces:	FSY-L460-102518	Cable tree connection KF-Module-Motherboard	99154
For standard FTA-terminated system: FSC 10105/2/1 Interconnection cable: (SIC-C-12)			

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Input 16 channels <b>FS-GIPFTEMP-1620m-119999</b>	27.11.01	vB	vB	vB/SB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	C: Sb/BK		<b>Nr. 36-7424</b>		
	Up date: 09.09.03	Replaces: xxxxxx / 36-xxxx		Sheet 1			
	MB-16U5L	Scale:	1 : 2		of 3		





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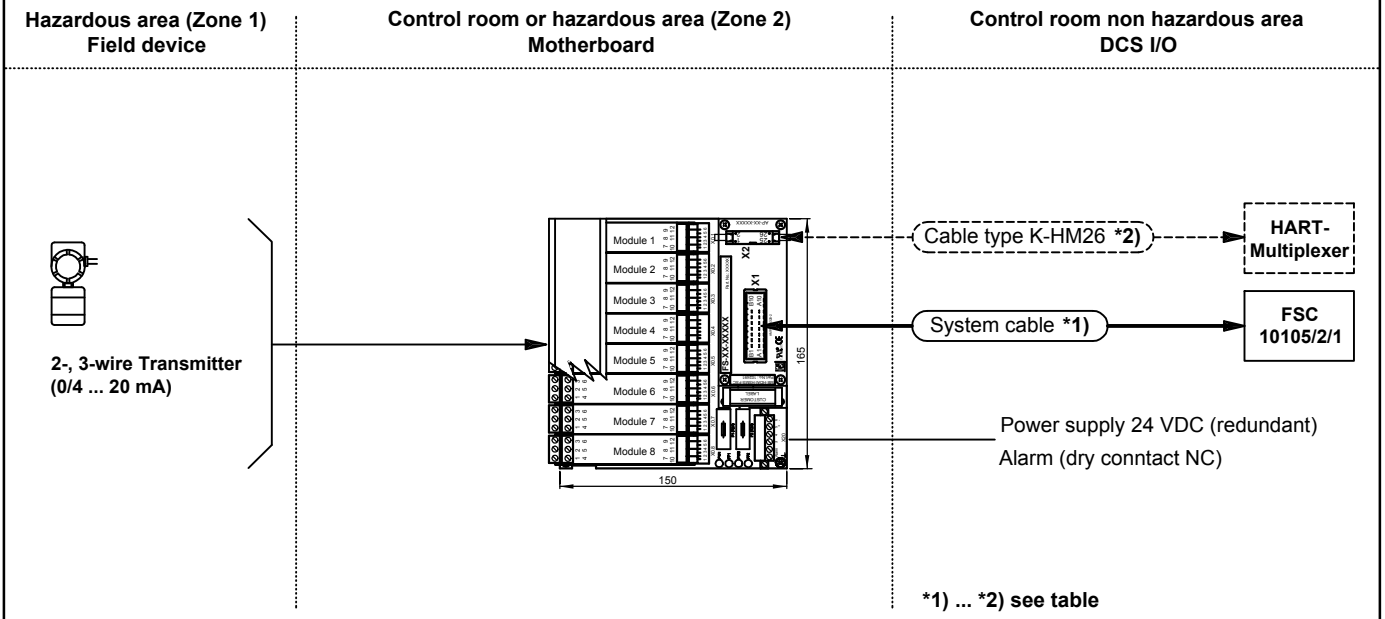
**PEPPERL+FUCHS**  
Mannheim-Schönau

Motherboard unit  
Analog Input  
16 channels  
**FS-GIPFTEMP-1620m-119999**

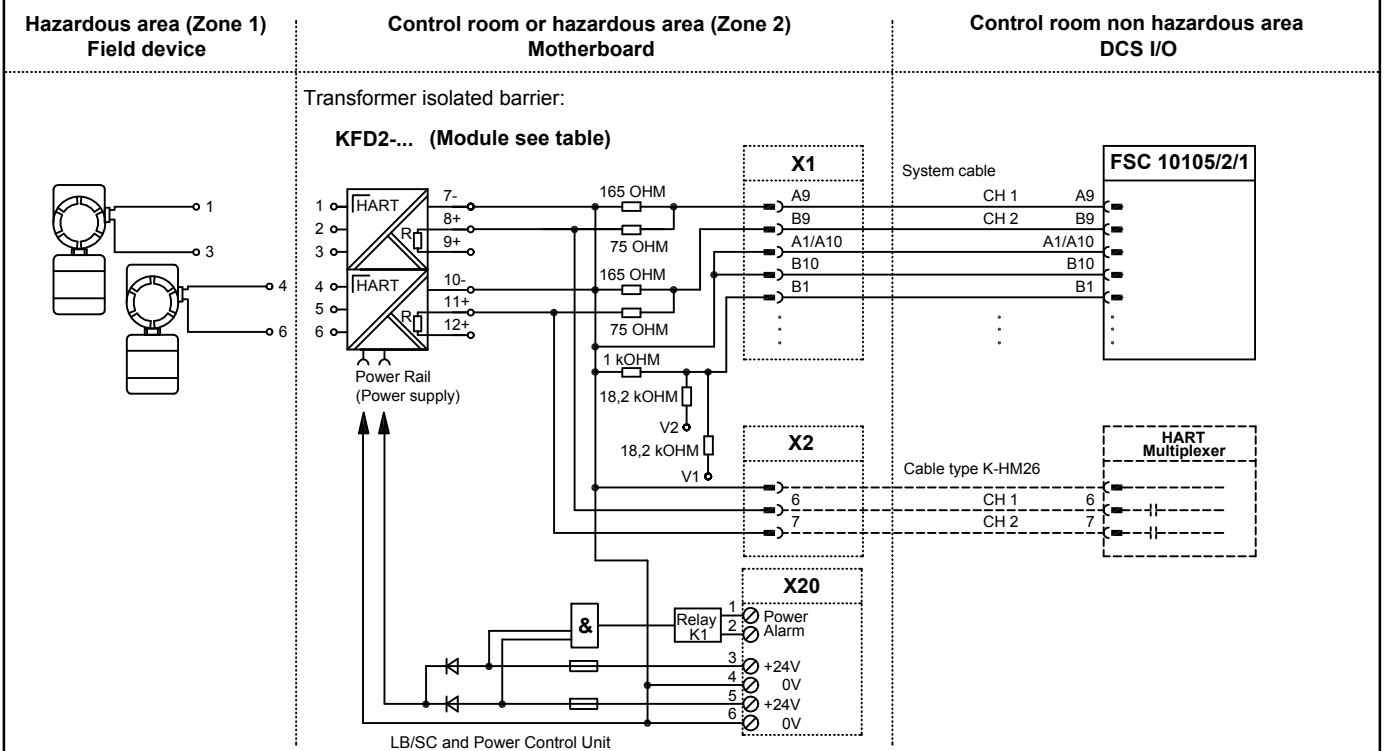
27.11.01		vB	vB	vB/SB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP		<b>Nr. 36-7424</b>			
Up date: 09.09.03		Replaces: xxxxxx/ 36-xxxx		Sheet 2	
MB-16U5L		Scale: - : -		of 3	



Notes:



### LOOP-DIAGRAM (2-channel modules)



Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFAI-1620mD-119995	AI	KFD2-STC4-Ex2	SIC-C-12	yes	

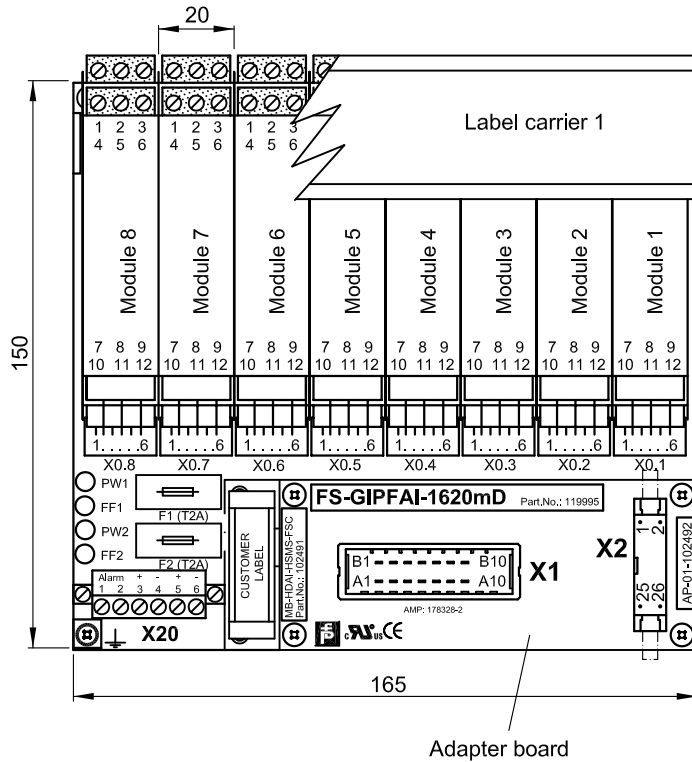
26.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. <b>36-6199</b>			
Up date: xx.xx.xx	Replaces: xxxxxx / 36-xxxx		Sheet 2	
Scale: 1 : 5		of 3		

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PEPPERL+FUCHS  
Mannheim-Schönau


APPLICATION FOR  
HONEYWELL SMS



Name	Note
X1	20 pin system connector male AMP: 178328-2
X2	26 pin male HART connector
---	---
---	---
KFD0-LC1-8M	Label carrier 1 (option, to order separate)
X0.1 .... 8	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: FS-GIPFAI-1620mD-119995		
Basic components:	Description	
<b>8 pieces:</b>	<b>KFD2-STC4-Ex2 (AI)</b>	KF-Module type (function)
<b>1 piece:</b>	<b>MB-HDAI-HSMS-FSC-102491</b>	Motherboard without modules
<b>composed by:</b>		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-01-102492	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1 (optional)
8 pieces:	FSY-K-120L450-Y98836	Cable tree connection KF-Module-Motherboard
For standard FTA-terminated system: FSC 10105/2/1		
Interconnection cable: (SIC-C-12)		

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Input 16 channels <b>FS-GIPFAI-1620mD-119995</b>	08.12.99	SB	SB	SB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Sb/Bro			<b>Nr. 36-7162</b>	
		Up date: 17.05.05	Replaces: XXXXX / 36-XXXX			Sheet 1	
		MB-8U2-J2	Scale: 1 : 2			of 2	

Field	Module	FSY-	X0.	Y1		X2	X1	Ch.	Module and cable types
			4 5 6	1 2 3	R1 R21 R2 R22	6 7	A9 B9	1 2	<b>AI Module type:</b> KFD2-STC4-Ex2 <b>FSY- Cable type:</b> FSY-K120L450-Y98836 KF-Module terminal no.:
			4 5 6	28 29 30	R3 R23 R4 R24	8 9	A8 B8	3 4	
			4 5 6	7 8 9	R5 R25 R6 R26	10 11	A7 B7	5 6	
			4 5 6	10 11 12	R7 R27 R8 R28	12 13	A6 B6	7 8	
			4 5 6	13 14 15	R9 R29 R10 R30	16 17	A5 B5	9 10	
			4 5 6	16 17 18	R11 R31 R12 R32	18 19	A4 B4	11 12	
			4 5 6	19 20 21	R13 R33 R14 R34	20 21	A3 B3	13 14	<u>Loop for channel 1 and 2</u> P+F 
			4 5 6	22 23 24	R15 R35 R16 R36	22 23	A2 B2	15 16	
			49 ... 51 52 ... 54 55 56 57 58 59 60	1 ... 5 14, 15 24 ... 26	R18 (18K2) R19 (18K2)	A1 A10 B10 B1			
(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2									

R1 ... R16: Precision resistor 165 OHM 0,1%  
 R21 ... R36: Precision resistor 75 OHM 0,1%

08.12.99	SB	SB	SB		
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nbr. <b>36-7162</b>				
Up date: 17.05.05	Replaces: XXXXX / 36-XXXX			Sheet 2	
Scale:			of 2		

**PEPPERL+FUCHS**  
 Mannheim-Schönau

Motherboard unit  
 Analog Input  
 16 channels  
**FS-GIPFAI-1620mD-119995**

Notes:

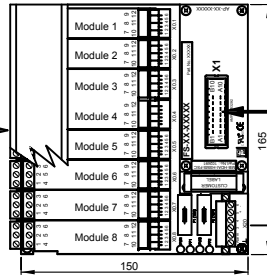
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Converter, positioner  
(4 ... 20 mA)



System cable \*1)

FSC  
10105/2/1

Power supply 24 VDC (redundant)  
Alarm (dry contact NC)

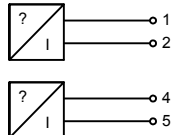
\*1) ... \*2) see table

### LOOP-DIAGRAM (2-channel modules)

Hazardous area (Zone 1)  
Field device

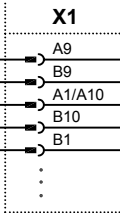
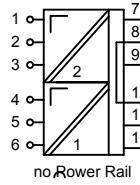
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O

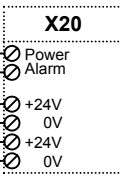
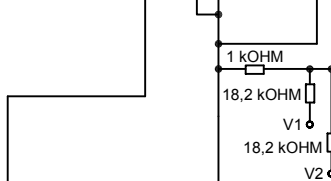
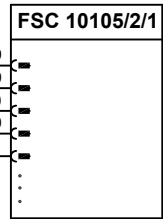


Transformer isolated barrier:

KFD2-... (Module see table)



System cable



LB/SC and Power Control Unit

Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFFIRE-1624D-122064	AI	KFD2-CS-Ex2.51P	SIC-C-12	no	

26.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm

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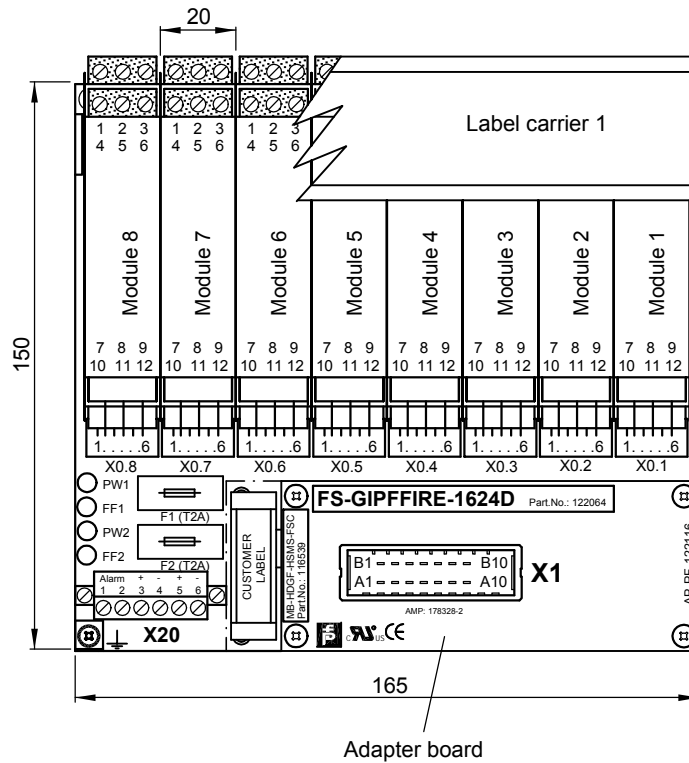


PEPPERL+FUCHS  
Mannheim-Schönau

APPLICATION FOR  
HONEYWELL SMS

Dept.: PA - VP	No. <b>36-6199A</b>
Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx
	Scale: 1 : 5
	Sheet 3 of 3




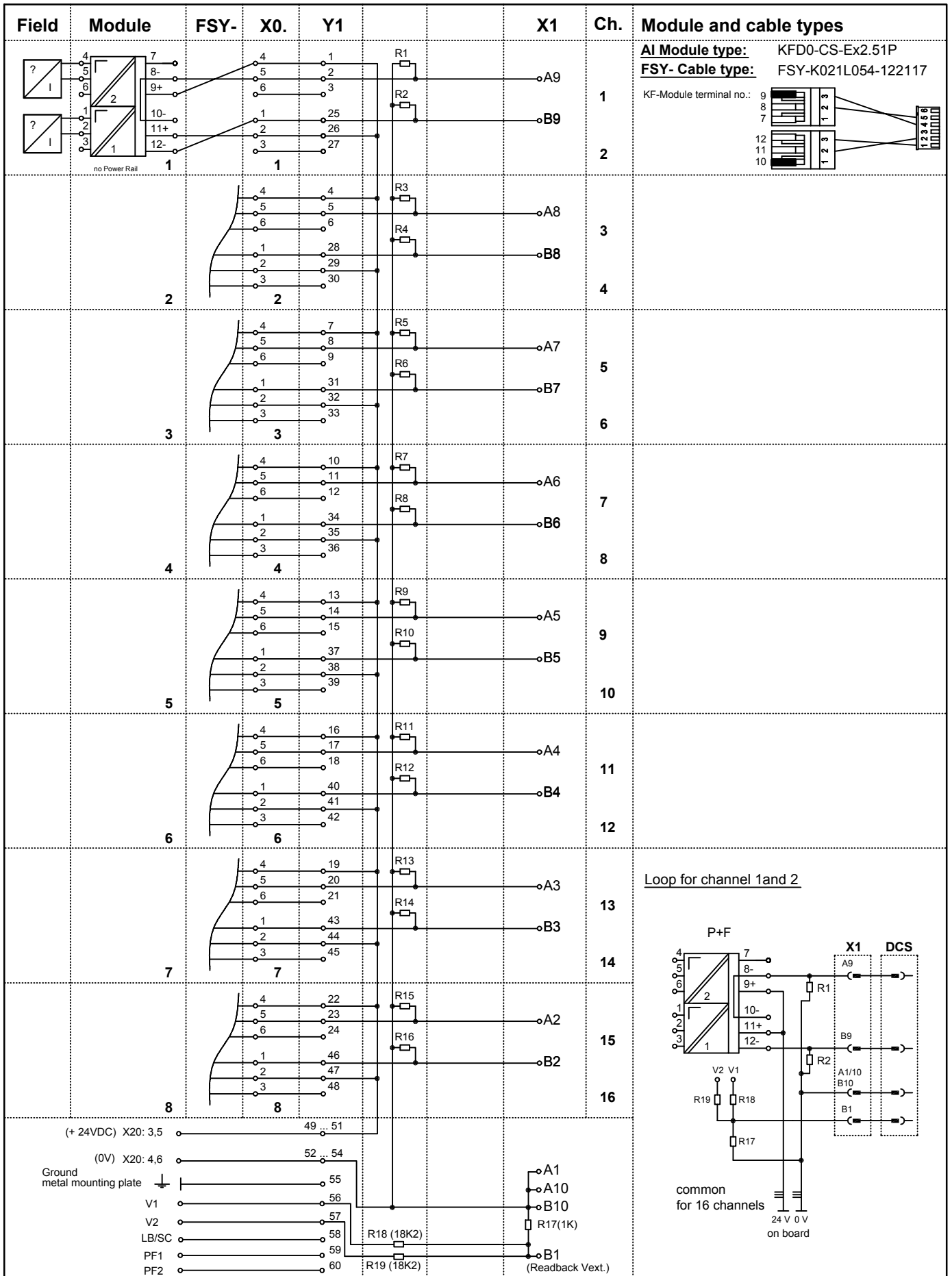


Name	Note
X1	20 pin system connector male AMP: 178328-2
----	----
----	----
----	----
KFD0-LC1-8M	Label carrier 1 (option, to order separate)
X0.1 .... 8	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

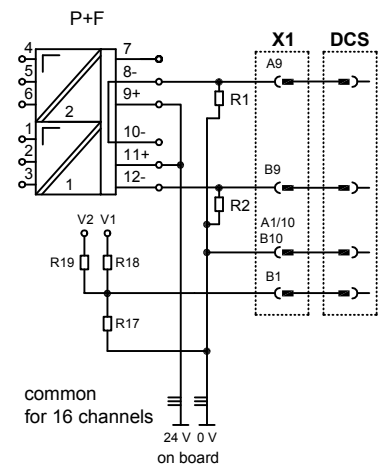
Ordering information: FS-GIPFFIRE-1624D-122064			
Basic components:		Description	Part.No.:
8 pieces:	<b>KFD0-CS-Ex2.51P (AI)</b>	KF-Module type (function)	71984
1 piece:	<b>MB-HDGF-HSMS-FSC-116539</b>	Motherboard without modules	116539
composed by:			
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier	97680
1 piece:	AP-PF-122116	Adapter board	122116
1 piece:	KFD0-LC1-8M	Label carrier 1 (optional)	99143
8 pieces:	FSY-K021L054-122117	Cable tree connection KF-Module-Motherboard	122117
For standard FTA-terminated system: FSC 10105/2/1 Interconnection cable: (SIC-C-12)			

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Input 16 channels <b>FS-GIPFFIRE-1624D-122064</b>	27.11.01	vB	vB	SB/vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.:	PA-VP	<b>Nr. 36-7425</b>			
		Up date:	10.09.03	Replaces:	XXXXX / 36-XXXX	Sheet 1	
		MB-8U2-J2	Scale:	1 : 2		of 2	



Loop for channel 1and 2



27.11.01		vB	vB	SB/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm



Motherboard unit  
 Analog Input  
 16 channels  
**FS-GIPFFIRE-1624D-122064**

Dept.: PA-VP	<b>Nr. 36-7425</b>
Up date: 07.10.02	Replaces: XXXXX / 36-XXXX
Scale:	Sheet 2 of 2

Notes:

## 5. FSC 10201/2/1 Application

### Or SDO-0824 (Safety Manager I/O card)

(8 channels or 2 x 8 channels AO)

Page

#### Motherboard FS-GIPFDO-1624 ..... 5- 1

**Part No.:** 119994  
**Function:** Digital Output  
**Channels:** 2 x 8  
**KF- Module:** KFD2-SD-Ex1.48 (1 channel)  
(replaced by KFD2-SD2-Ex1.1045)  
**Simplified schematic:** drawing no. 36-6200-1  
**Wiring Diagram:** drawing no. 36-7493

#### Motherboard FS-GIPFDOH-1624 ..... 5- 5

**Part No.:** 122063  
**Function:** Digital Output  
**Channels:** 2 x 8  
**KF- Module:** KFD2-SD-Ex1.48-90A (1 channel)  
(replaced by KFD2-SD2-Ex1.1045)  
**Simplified schematic:** drawing no. 36-6200-1  
**Wiring Diagram:** drawing no. 36-7499

#### Motherboard FS-GIPFDO-0824D ..... 5- 9

**Part No.:** 119993  
**Function:** Digital Output  
**Channels:** 8  
**KF- Module:** KFD2-SL2-Ex2 (2 channels)  
**Simplified schematic:** drawing no. 36-6200-2  
**Wiring Diagram:** drawing no. 36-7368

Notes:

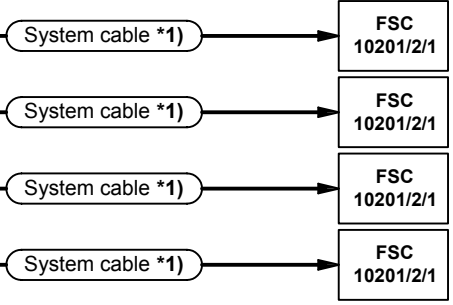
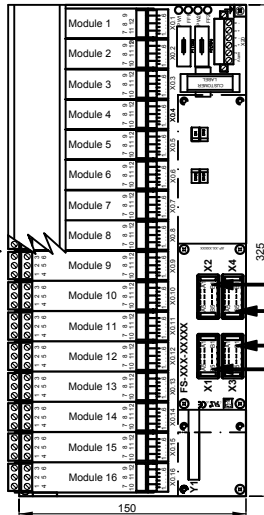
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Valves



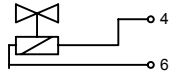
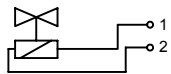
\*1) ... \*2) see table

#### LOOP-DIAGRAM (1-channel modules)

Hazardous area (Zone 1)  
Field device

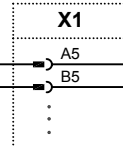
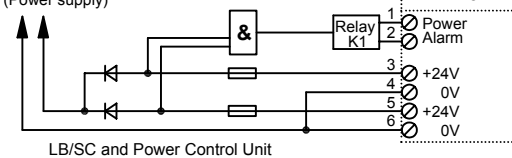
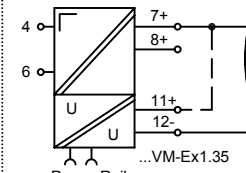
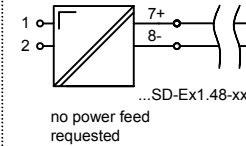
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O

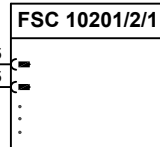


Transformer isolated barrier:

**KFD2-... (Module see table)**



System cable  
CH 1



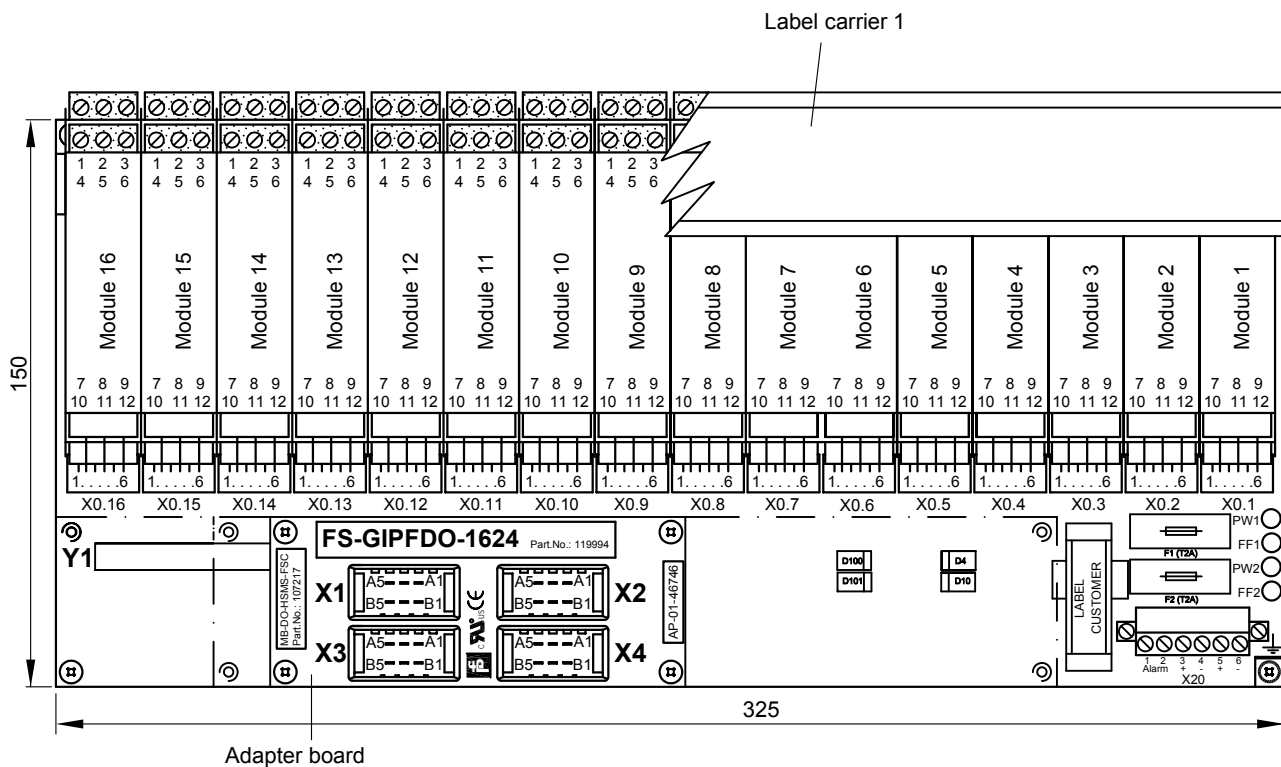
Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFDO-1624-119994	DO	KFD2-SD-Ex1.48	4 x SIC-C-02	---	
FS-GIPFDOH-1624-122063	DO	KFD2-SD-Ex1.48-90A	4 x SIC-C-02	---	
MB-AD-HSMS-FSC-127685	DO	KFD2-VM-Ex1.35	2 x SIC-C-02	---	

13.03.03		KT	Sb	Sb	
Date	S	TD	Off. in ch.	contr. techn.	contr. Norm

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APPLICATION FOR  
**HONEYWELL SMS**

Dept.: PA - VP	No. <b>36-6200A</b>
Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx
Scale: 1 : 5	Sheet 1 of 2




Name	Note
X1, X2, X3, X4	10 pin system connector male AMP: 178328-2
----	----
----	----
----	----
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information:		FS-GIPFDO-1624-119994	
Basic components:	Description	Part.No.:	
<b>16 pieces:</b>	<b>(*) KFD2-SD-Ex1.48 (DO)</b>	KF-Module type (function)	72044
<b>1 piece:</b>	<b>MB-DO-HSMS-FSC-107217</b>	Motherboard without modules	107217
<b>composed by:</b>			
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier	103681
1 piece:	AP-01-46746	Adapter board	46746
1 piece:	KFD0-LC1-16M	Label carrier 1 (optional)	99144
16 pieces:	FSY-L540-107218	Cable tree connection KF-Module-Motherboard	107218
For standard FTA-terminated system: FSC 10201/2/1 Interconnection cable: (2 x SIC-C-02)			

(\*) KFD2-SD-Ex1.48 no more available, replaced by KFD2-SD2-EX1.1045

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Output 2 x 8 channels <b>FS-GIPFDO-1624-119994</b>	05.09.02	KT	vB	vB/Sb		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. <b>36-7493A</b>				
		Up date: 18.04.08	vB	Replaces: xxxxxx / 36-xxxx		Sheet 1	
	MB-16U5L	Scale:	1 : 2	of	3		

Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.	Module and cable types
			4 5 6	1 2 3	B5 A5				1	<b>DO Module type:</b> KFD2-SD-Ex1.48 <b>FSY- Cable type:</b> FSY-L540-107218  KF-Module terminal no.:
			4 5 6	4 5 6	B4 A4				2	<b>DO Module type:</b> KFD0-SD2-Ex1.1045 <b>FSY- Cable type:</b> FSY-L540-107218  KF-Module terminal no.:
			4 5 6	7 8 9	B3 A3				3	
			4 5 6	10 11 12	B2 A2				4	
			4 5 6	13 14 15	B5 A5				5	
			4 5 6	16 17 18	B4 A4				6	
			4 5 6	19 20 21	B3 A3				7	
			4 5 6	22 23 24	B2 A2				8	

	Motherboard unit		05.09.02	KT	vB	vB/Sb	
	Digital Output		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
	2 x 8 channels		Dept.: PA-VP	Nr. <b>36-7493A</b>			
	<b>FS-GIPFDO-1624-119994</b>		Up date: 18.04.08	Replaces: XXXXX / 36-XXXX		Sheet 2	
		MB-16U5L	Scale:		of 3		

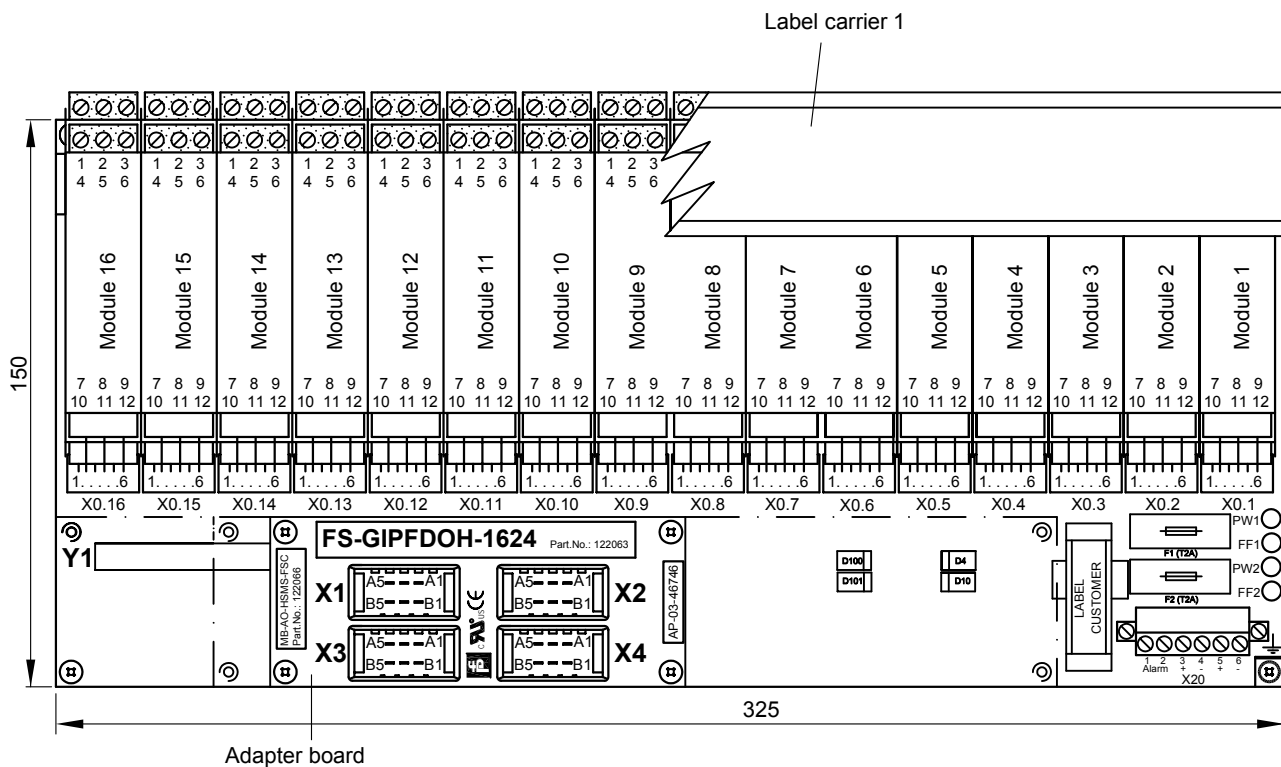


Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.	
	9		4 5 6	25 26 27			B5 A5		1	
	10		4 5 6	28 29 30			B4 A4		2	
	11		4 5 6	31 32 33			B3 A3		3	
	12		4 5 6	34 35 36			B2 A2		4	
	13		4 5 6	37 38 39			B5 A5		5	
	14		4 5 6	40 41 42			B4 A4		6	
	15		4 5 6	43 44 45			B3 A3		7	
	16		4 5 6	46 47 48			B2 A2		8	
				49 ... 51						<p>Loop for channel 1</p>
				52 ... 54						
				55						
				56						
				57						
				58						
				59						
				60						

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	Date		05.09.02	KT	vB	vB/Sb	
	Date		S	TZ	Off. in ch.	contr. techn.	contr. Norm
	Dept.:		PA-VP		Nr. <b>36-7493A</b>		
	Up date:		18.04.08		Replaces: xxxxx / 36-xxxx		Sheet 3
MB-16U5L		Scale:		of 3			


Motherboard unit  
Digital Output  
2 x 8 channels  
**FS-GIPFDO-1624-119994**


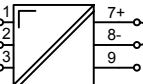
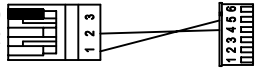


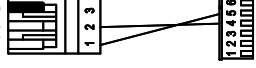



Name	Note
X1, X2, X3, X4	10 pin system connector male AMP: 178328-2
----	----
----	----
----	----
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: FS-GIPFDOH-1624-122063			
Basic components:		Description	Part.No.:
16 pieces:	(*) KFD2-SD-Ex1.48-90A (DO)	KF-Module type (function)	72046
1 piece:	MB-DO-HSMS-FSC-122066	Motherboard without modules	122066
composed by:			
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier	103681
1 piece:	AP-03-46746	Adapter board	46746
1 piece:	KFD0-LC1-16M	Label carrier 1 (optional)	99144
16 pieces:	FSY-L540-107218	Cable tree connection KF-Module-Motherboard	107218
(*) KFD2-SD-Ex1.48-90A no more available, replaced by KFD2-SD-EX1.1045			
For standard FTA-terminated system: FSC 10201/2/1			
Interconnection cable: (2 x SIC-C-02)			

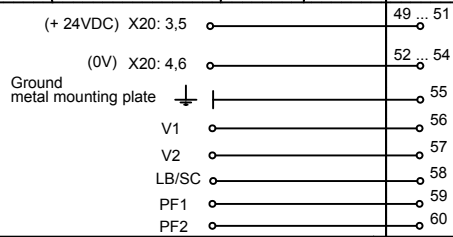
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	<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Output 2 x 8 channels <b>FS-GIPFDOH-1624-122063</b>	19.09.02	KT	vB	vB/Sb	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	<b>Nr. 36-7499a</b>				
		Up date: 14.07.08	vB	Replaces: xxxxxx / 36-xxxx		Sheet 1	
		MB-16U5L	Scale:	1 : 2		of 3	

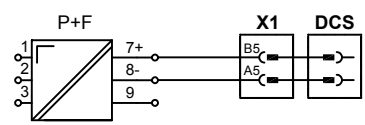
Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.	Module and cable types
			4 5 6	1 2 3	B5 A5				1	<b>DO Module type:</b> KFD2-SD-EX1.48-90A <b>FSY- Cable type:</b> FSY-L540-107218  KF-Module terminal no.: 
			4 5 6	4 5 6	B4 A4				2	<b>DO Module type:</b> KFD0-SD2-Ex1.1045 <b>FSY- Cable type:</b> FSY-L540-107218  KF-Module terminal no.: 
			4 5 6	7 8 9	B3 A3				3	
			4 5 6	10 11 12	B2 A2				4	
			4 5 6	13 14 15	B5 A5				5	
			4 5 6	16 17 18	B4 A4				6	
			4 5 6	19 20 21	B3 A3				7	
			4 5 6	22 23 24	B2 A2				8	

	Motherboard unit		19.09.02	KT	vB	vB/Sb	
	Digital Output		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
	2 x 8 channels		Dept.: PA-VP	Nr. <b>36-7499a</b>			
	<b>FS-GIPDOH-1624-122063</b>		Up date: 14.07.08	Replaces: XXXXX / 36-XXXX		Sheet 2	
		MB-16U5L	Scale:		of 3		

Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.
	9		4 5 6 1 2 3	25 26 27 85 86 87			B5 A5		1
	10		4 5 6 1 2 3	28 29 30 88 89 90			B4 A4		2
	11		4 5 6 1 2 3	31 32 33 91 92 93			B3 A3		3
	12		4 5 6 1 2 3	34 35 36 94 95 96			B2 A2		4
	13		4 5 6 1 2 3	37 38 39 97 98 99			B5 A5		5
	14		4 5 6 1 2 3	40 41 42 100 101 102			B4 A4		6
	15		4 5 6 1 2 3	43 44 45 103 104 105			B3 A3		7
	16		4 5 6 1 2 3	46 47 48 106 107 108			B2 A2		8



Loop for channel 1



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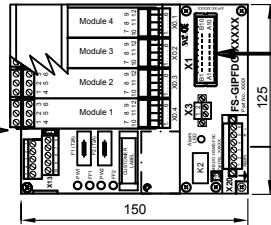
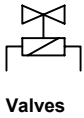
	Motherboard unit Digital Output 2 x 8 channels <b>FS-GIPDOH-1624-122063</b>		19.09.02	KT	vB	vB/Sb	
	Date	S TZ	Off.	in ch.	contr.	techn.	contr. Norm
	Dept.: PA-VP	Nr. <b>36-7499a</b>		Replaces:		Sheet 3	
	Up date: 14.07.08	xxxxx / 36-xxxx		Scale:		of 3	

Notes:

Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



System cable \*1)

FSC 10201/2/1

Power supply 24 VDC (redundant)  
Alarm (dry contact NC)

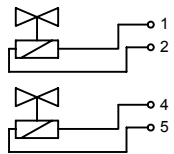
\*1) ... \*2) see table

### LOOP-DIAGRAM (2-channel modules)

Hazardous area (Zone 1)  
Field device

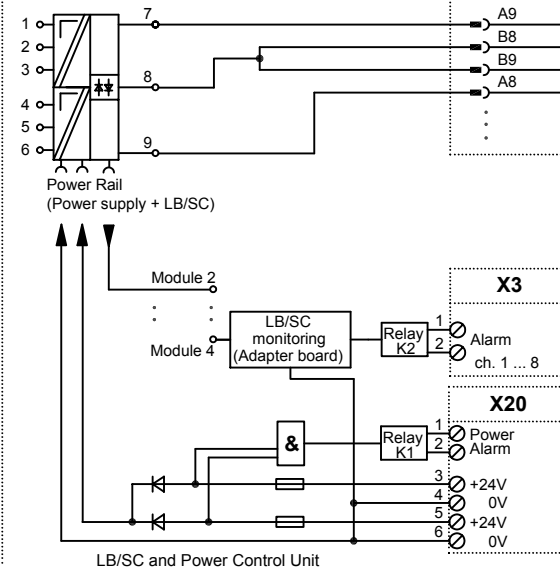
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Transformer isolated barrier:

KFD2-... (Module see table)



Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFDO-0824D-119993	DO	KFD2-SL2-Ex2	SIC-C-12	---	LB/SC monitoring

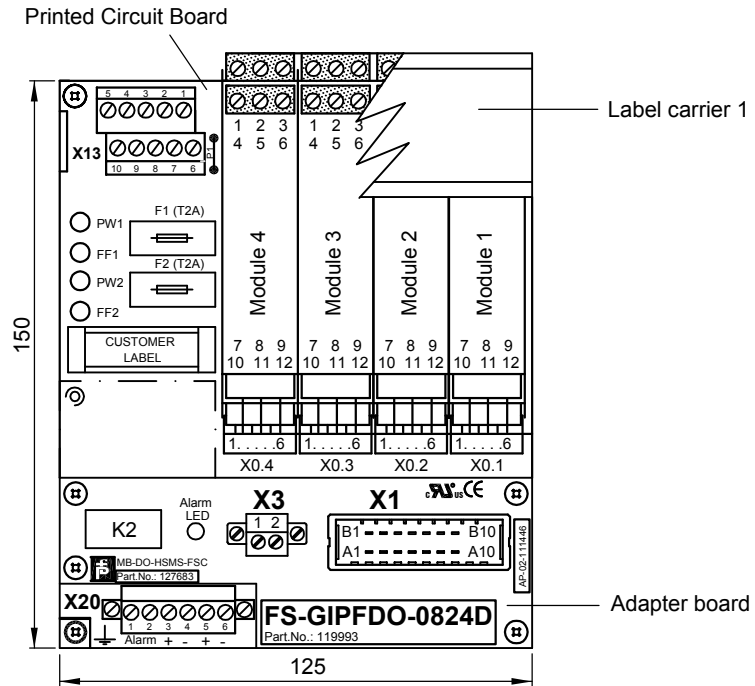
18.03.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm

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APPLICATION FOR  
HONEYWELL SMS


Dept.: PA - VP	No. <b>36-6200A</b>
vB Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx
Scale: 1 : 5	Sheet 2 of 2

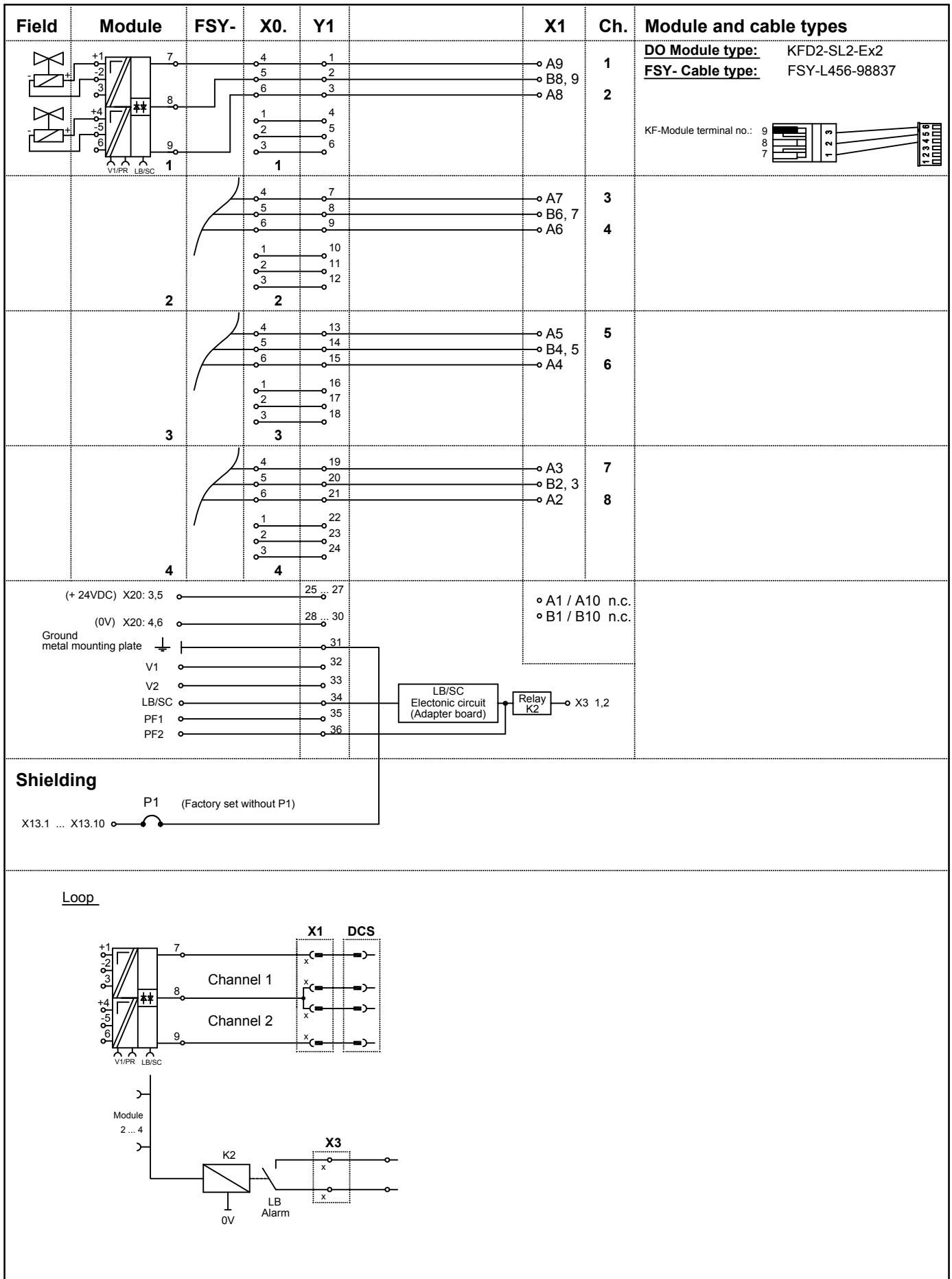


Name	Note
X1	20 pin system connector male AMP: 178328-2
X3	2 pin screw terminals (LB-Alarm)
K2	relay
X0.1 .... 4	6 pin male terminals for cable tree FSY....
X20.3 .... 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure
PR-03	Power Rail with 3 conductors

Ordering information: FS-GIPFDO-0824D-119993			
Basic components:		Description	Part.No.:
4 pieces:	KFD2-SL2-Ex2 (DO)	KF-Module type (function)	39267
1 piece:	MB-DO-HSMS-FSC-127683	Motherboard without modules	127683
composed by:			
1 piece:	MB-4U1-98838	Motherboard without modules, adapter board, FSY cable tree and Label carrier	98838
1 piece:	AP-02-111446	Adapter board	111446
1 piece:	KFD0-LC1-4M	Label carrier 1 (optional)	99110
4 pieces:	FSY-L456-98837	Cable tree connection KF-Module-Motherboard	98837
For standard FTA-terminated system: FSC 10201/2/1 (DO) with system cable 1 x SIC-C-12			

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Digital Output 8 channels <b>FS-GIPFDO-0824D-119993</b>	06.11.01		KT	vB	Sb/vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm	
		Dept.: PA-VP		<b>Nr. 36-7368A</b>				
		Up date: Sch/Bro 23.01.04		Replaces: 127700 / 36-7566			Sheet 1	
MB-4U1		Scale: 1 : 2			of 2			



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**PEPPERL+FUCHS**  
Mannheim-Schönau

Motherboard unit  
Digital Output  
8 channels  
**FS-GIPFDO-0824D-119993**

06.11.01		KT	Sb	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP			Nr. <b>36-7368A</b>		
Up date: Sch/Bro 23.01.04			Replaces: 127700 / 36-7566		Sheet 2
			Scale:		of 2



Notes:

## 6. FSC 10205/2/1 Application

Or SAO-0220 (Safety Manager I/O card)  
(2 x 8 channels AO)

	Page
<b>Motherboard FS-GIPFAO-1620m</b> .....	6- 1
<b>Part No.:</b>	192288
<b>Function:</b>	Analog Output
<b>Channels:</b>	2 x 8
<b>KF- Module:</b>	KFD2-CD-Ex1.32 (1 channel)
<b>Simplified schematic:</b>	drawing no. 36-6203-1
<b>Wiring Diagram:</b>	drawing no. 36-7748
<b>Motherboard FS-GIPFAO-1620mD</b> .....	6- 5
<b>Part No.:</b>	119998
<b>Function:</b>	Analog Output + HART
<b>Channels:</b>	2 x 8
<b>KF- Module:</b>	KFD2-SCD2-Ex2.LK (2 channels)
<b>Simplified schematic:</b>	drawing no. 36-6203-2
<b>Wiring Diagram:</b>	drawing no. 36-7414

Notes:

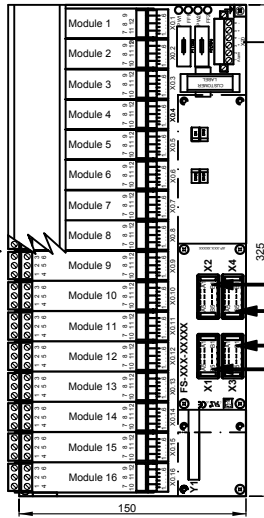
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

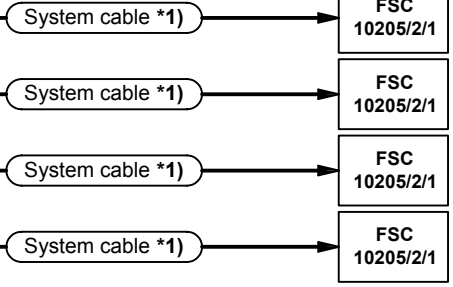
Control room non hazardous area  
DCS I/O



Converter, positioner  
(4 ... 20 mA)



Power supply 24 VDC (redundant)  
Alarm (dry contact NC)



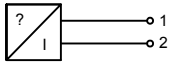
\*1) ... \*2) see table

#### LOOP-DIAGRAM (1-channel modules)

Hazardous area (Zone 1)  
Field device

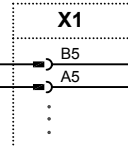
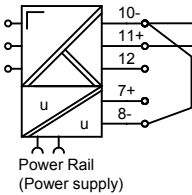
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O

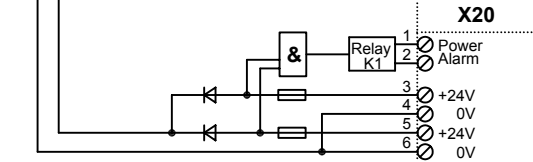
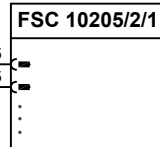


Transformer isolated barrier:

KFD2-... (Module see table)



System cable  
CH 1

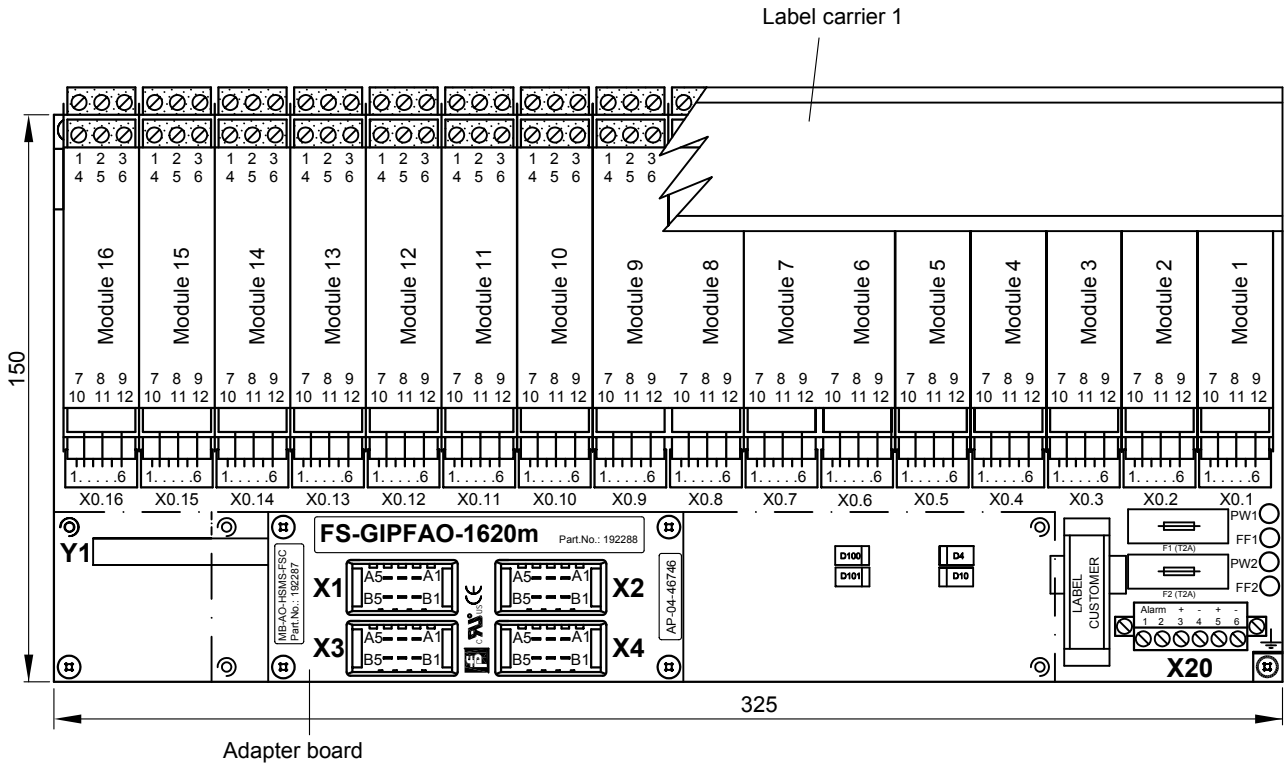


LB/SC and Power Control Unit

Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFAO-1620m-192288	AO	KFD2-CD-Ex1.32	4 x SIC-C-03	no	

18.03.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm


	<b>APPLICATION FOR HONEYWELL SMS</b>		Dept.: PA - VP	No. <b>36-6203A</b>		
			Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx		Sheet 1
				Scale: 1 : 5	of 2	

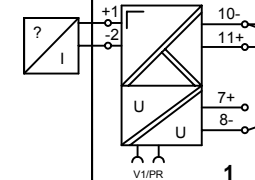
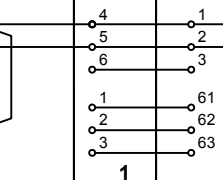
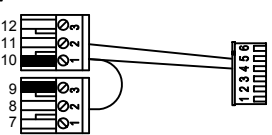
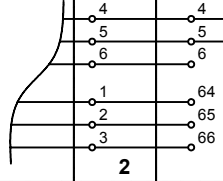
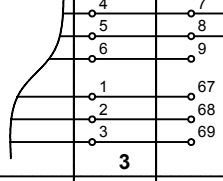
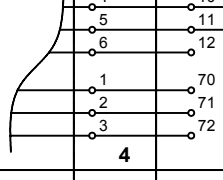
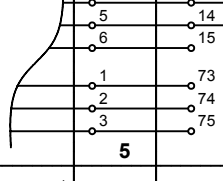
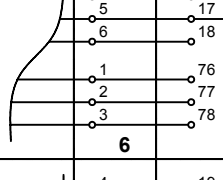
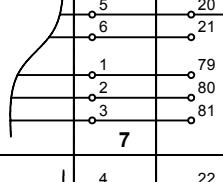
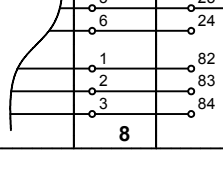


Name	Note
X1, X2, X3, X4	10 pin system connector male AMP: 178328-2
----	----
----	----
----	----
KFD0-LC1-16M	Label carrier 1 (option, to order separate)
X0.1 .... 16	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: FS-GIPFAO-1620m-192288	
Basic components:	Description
<b>16 pieces:</b>	<b>KFD2-CD-Ex1.32 (AO)</b> KF-Module type (function)
<b>1 piece:</b>	<b>MB-AO-HSMS-FSC-192287</b> Motherboard without modules
<b>composed by:</b>	
1 piece:	MB-16U5L-103681 Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-04-46746 Adapter board
1 piece:	KFD0-LC1-16M-99144 Label carrier 1 (optional)
16 pieces:	FSY-L040K450-192289 Cable tree connection KF-Module-Motherboard
For standard FTA-terminated system: FSC 10205/2/1 Interconnection cable: (4 x SIC-C-03)	

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	<b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Output 2 x 8 channels <b>FS-GIPFAO-1620m-192288</b>	12.04.06	Bro	vB/Hi	Hi/vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	<b>Nr. 36-7748A</b>				
		vB Up date: 09.05.07	Replaces: 119997-107215 / 36-7494		Sheet 1		
		MB-16U5L	Scale:	1 : 2		of 3	

Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.	Module and cable types
	1								1	<b>AO Module type:</b> KFD2-CD-Ex1.32 <b>FSY- Cable type:</b> FSY-L040K450-192289 KF-Module terminal no.: 
	2								2	
	3								3	
	4								4	
	5								5	
	6								6	
	7								7	
	8								8	

		12.04.06		Bro	vB/Hi	Hi/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm		
Dept.: PA-VP			Nr. <b>36-7748A</b>				
Up date: 09.05.07		vB			Replaces: 119997-107215 / 36-7494		Sheet 2
MB-16U5L		Scale:			of 3		



**PEPPERL+FUCHS**  
Mannheim-Schönau

Motherboard unit  
Analog Output  
2 x 8 channels  
**FS-GIPFAO-1620m-192288**

Field	Module	FSY-	X0.	Y1	X1	X2	X3	X4	Ch.	
	9								1	
	10								2	
	11								3	
	12								4	
	13								5	
	14								6	
	15								7	
	16								8	
										<p>Loop for channel 1</p>
										<p>(+ 24VDC) X20: 3,5    49 ... 51</p> <p>(0V) X20: 4,6        52 ... 54</p> <p>Ground metal mounting plate ↓ 55</p> <p>V1                      56</p> <p>V2                      57</p> <p>LB/SC                 58</p> <p>PF1                     59</p> <p>PF2                     60</p>

12.04.06		Bro	vB/Hi	Hi/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB		Nr. <b>36-7748A</b>		
Up date: 09.05.07	119997-107215 / 36-7494		Sheet 3		
MB-16U5L	Scale:		of 3		

**PEPPERL+FUCHS**  
Mannheim-Schönau

Motherboard unit  
Analog Output  
2 x 8 channels  
**FS-GIPFAO-1620m-192288**

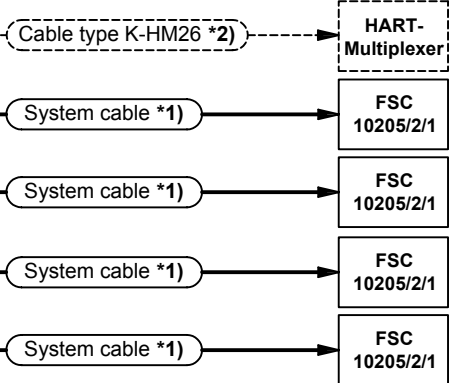
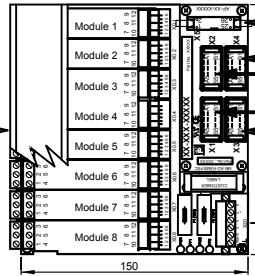
Hazardous area (Zone 1)  
Field device

Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Converter, positioner  
(4 ... 20 mA)



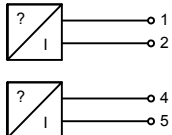
\*1) ... \*2) see table

#### LOOP-DIAGRAM (2-channel modules)

Hazardous area (Zone 1)  
Field device

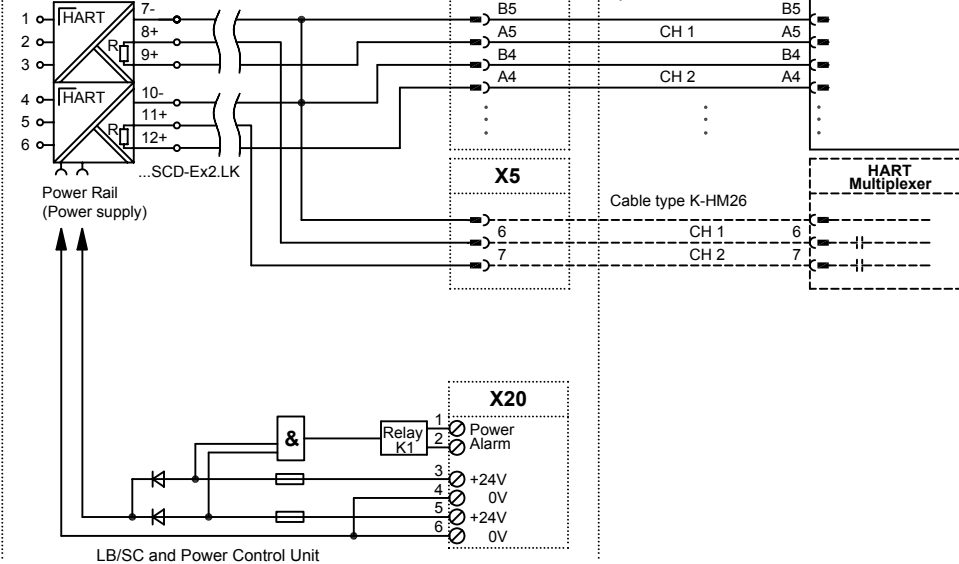
Control room or hazardous area (Zone 2)  
Motherboard

Control room non hazardous area  
DCS I/O



Transformer isolated barrier:

KFD2-... (Module see table)

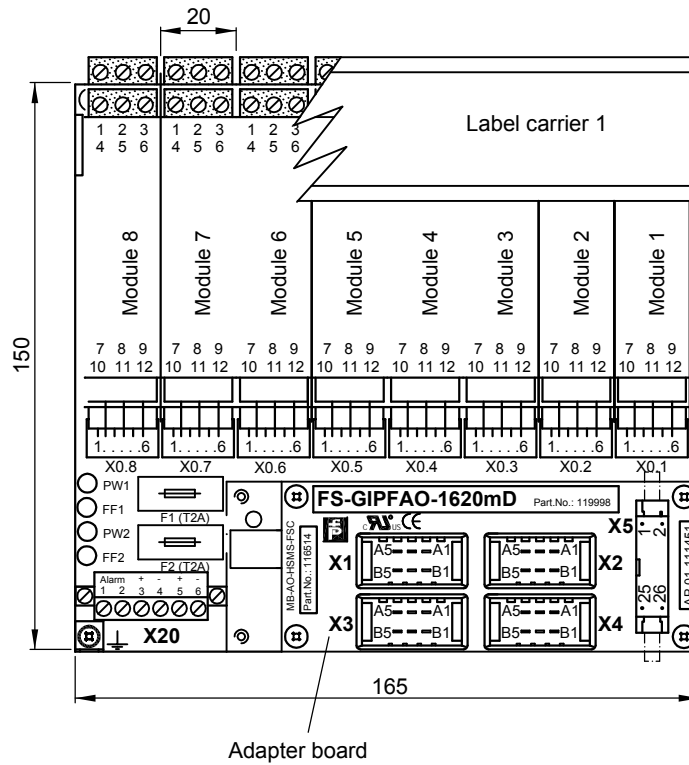


Motherboard	Signal	Module	System cable *1)	HART communication *2)	Option
FS-GIPFAO-1620mD-119998	AO	KFD2-SCD2-Ex2.LK	4 x SIC-C-03	yes	
MB-AO-HSMS-FSC-111450	AO	KFD2-SCD2-Ex2.LK	4 x SIC-C-03	yes	

18.03.03		KT	Sb	Sb	
Date	S	TD	Off. in ch.	contr. techn.	contr. Norm

	<b>APPLICATION FOR HONEYWELL SMS</b>		Dept.: PA - VP	No. <b>36-6203A</b>		
			Up date: 18.02.08	Replaces: xxxxxx / 36-xxxx		Sheet 2
				Scale: 1 : 5	of 2	






Name	Note
X1, X2, X3, X4	10 pin system connector male AMP D3100-D : 178325-2
X5	26 pin male HART connector
----	----
----	----
KFD0-LC1-8M	Label carrier 1 (option, to order separate)
X0.1 ..... 8	6 pin male terminals for cable tree FSY-.....
X20.3.....6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

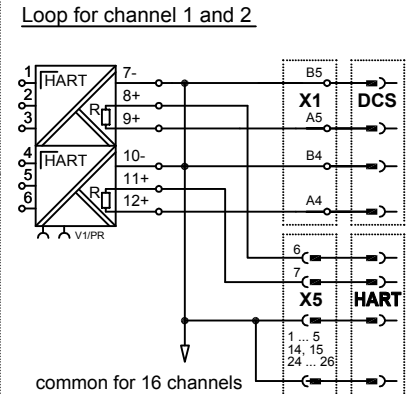
Ordering information: FS-GIPFAO-1620mD-119998		
Basic components:	Description	
8 pieces:	<b>KFD2-SCD2-Ex2.LK (AO)</b>	KF-Module type (function)
1 piece:	<b>MB-AO-HSMS-FSC-116514</b>	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-01-111451	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1 (optional)
8 pieces:	FSY-K-123L456-99154	Cable tree connection KF-Module-Motherboard
For standard FTA-terminated system: FSC 10205/2/1 Interconnection cable: (4 x SIC-C-03)		

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 <b>PEPPERL+FUCHS</b> Mannheim-Schönau	Motherboard unit Analog Output - HART 2 x 8 channels <b>FS-GIPFAO-1620mD-119998</b>	27.11.01	vB	vB/Sb	vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. <b>36-7414</b>				
		Up date: 26.02.05	Replaces: XXXXX / 36-XXXX			Sheet 1	
		MB-8U2	Scale: 1 : 2		of 2		

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Field	Module	FSY-	X0.	Y1	X5	X1	X2	X3	X4	Ch.	Module and cable types
	1		4	1		B5				1	<b>AO Module type:</b> KFD2-SCD2-Ex2.LK <b>FSY- Cable type:</b> FSY-K123L456-99154 KF-Module terminal no.: 9, 8, 7, 12, 11, 10
	2		5	2		A5				2	
	3		6	3		B4				3	
	4		1	25		A4				4	
	5		2	26						5	
	6		3	27						6	
	7		4	4		B3				7	
	8		5	5		A3				8	
	9		6	6		B2				9	
	10		1	28		A2				10	
	11		2	29						11	
	12		3	30						12	
	13		4	7		B5				13	
	14		5	8		A5				14	
	15		6	9		B4				15	
	16		1	31		A4				16	
		2	32								
		3	33								
		4	10		B3						
		5	11		A3						
		6	12		B2						
		1	34		A2						
		2	35								
		3	36								
		4	13		B5						
		5	14		A5						
		6	15		B4						
		1	37		A4						
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		3	39								
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		3	45								
		4	22		B3						
		5	23		A3						
		6	24		B2						
		1	46		A2						
		2	47								
		3	48								
		49 ... 51		1 ... 5							
		52 ... 54		14, 15							
		55		24 ... 26							
		56									
		57									
		58									
		59									
		60									

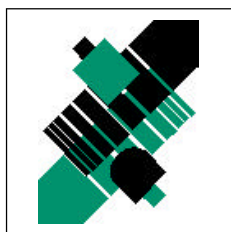


27.11.01		vB	vB	vB/Sb	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP		Nr. <b>36-7414</b>			
Up date: 25.02.05		Replaces: xxxxxx / 36-xxxx		Sheet 2	
		Scale: - : -		of 2	

**PEPPERL+FUCHS**  
 Mannheim-Schönau

Motherboard unit  
 Analog Output - HART  
 2 x 8 channels  
**FS-GIPFAO-1620mD-119998**

# One Company, Two Divisions



## Factory Automation Division



## Process Automation Division

### Product Range

- Digital and analogue sensors
- in different technologies
  - Inductive and capacitive sensors
  - Magnetic sensors
  - Ultrasonic sensors
  - Photoelectric sensors
- Incremental and absolute rotary encoders
- Counters and control equipment
- Identification Systems
- AS-Interface

### Areas of Application

- Machine engineering
- Conveyor or transport
- Packaging and bottling
- Automotive industry

### Service Area

Worldwide sales, customer service and consultation via competent and reliable Pepperl+Fuchs associates ensure that you can contact us wherever or whenever you need us. We have subsidiaries worldwide for your convenience.

### Product Range

- Signal conditioners
- Intrinsically safe interface modules
- Remote Process Interface (RPI)
- Intrinsically safe field bus solutions
- Level control sensors
- Process measuring and control systems engineering at the interface level
- Intrinsic safety training

### Areas of Application

- Chemical industry
- Industrial and community sewage
- Oil, gas and petrochemical industry
- PLC and process control systems
- Engineering companies for process systems

<http://www.pepperl-fuchs.com>

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 **PEPPERL+FUCHS**