

PROCESS AUTOMATION



KF-Modulecarrier taylor made for DCS

Foxboro FBM200

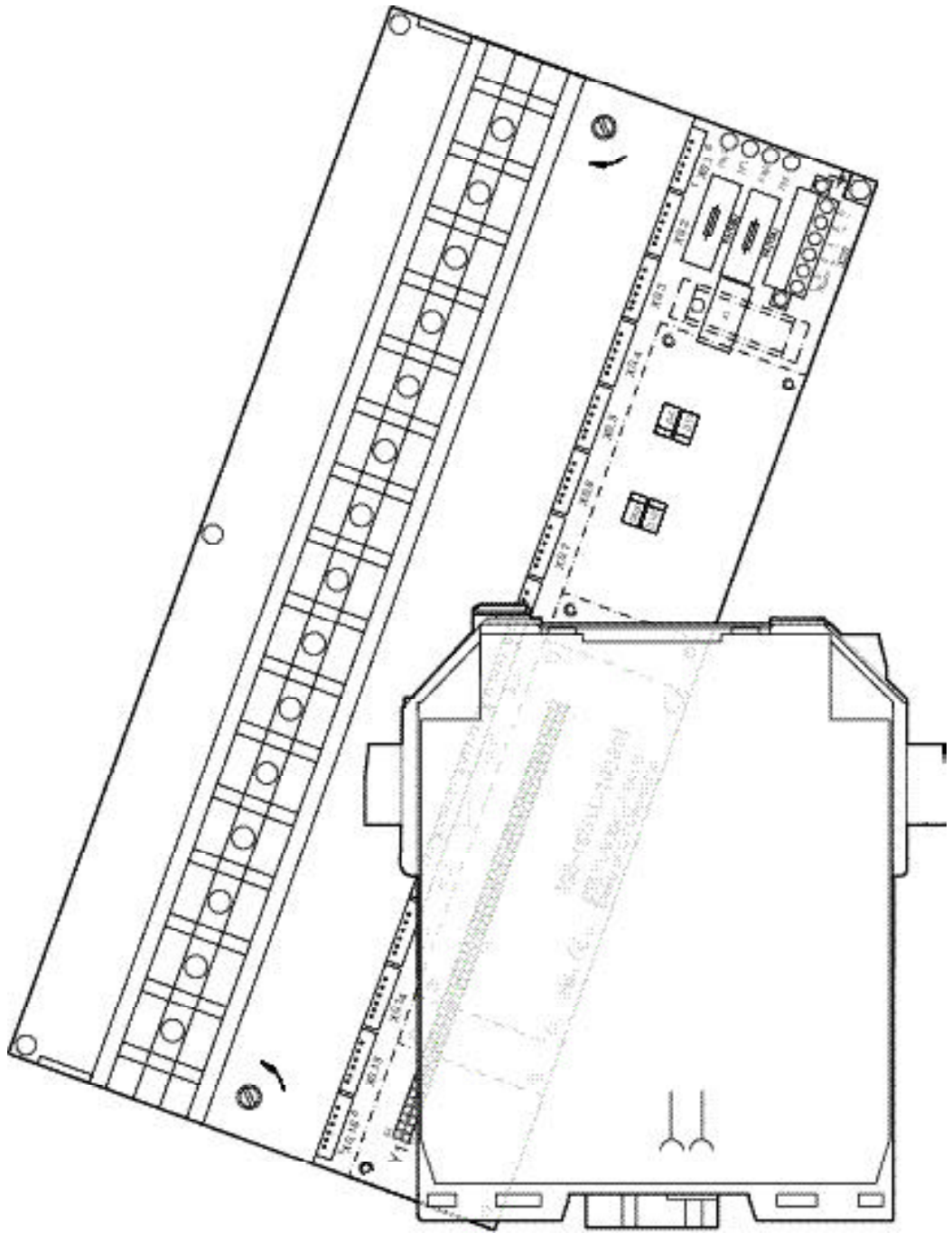


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Notes:

1. General Description ISTA Motherboard

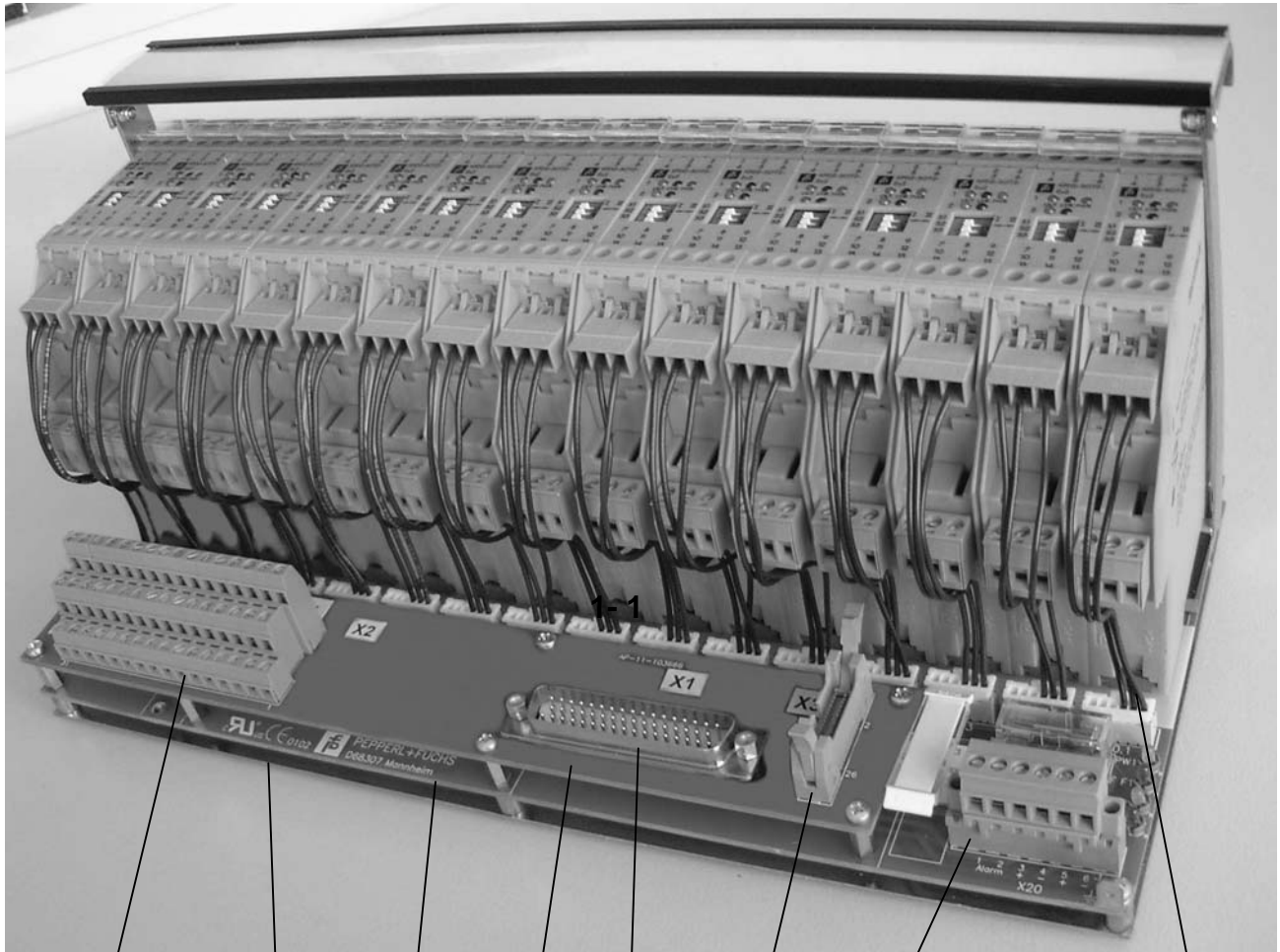
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Notes:

System description Motherboard

The standard motherboard is designed for 4, 8, 16 or 32 KF 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.



Optional second connector for redundant connection to PLC

Adapter

Customer specified system plug to PLC

Main printed circuit board


Connector for HART communication

Metal base plate with brackets for mounting on DIN rail

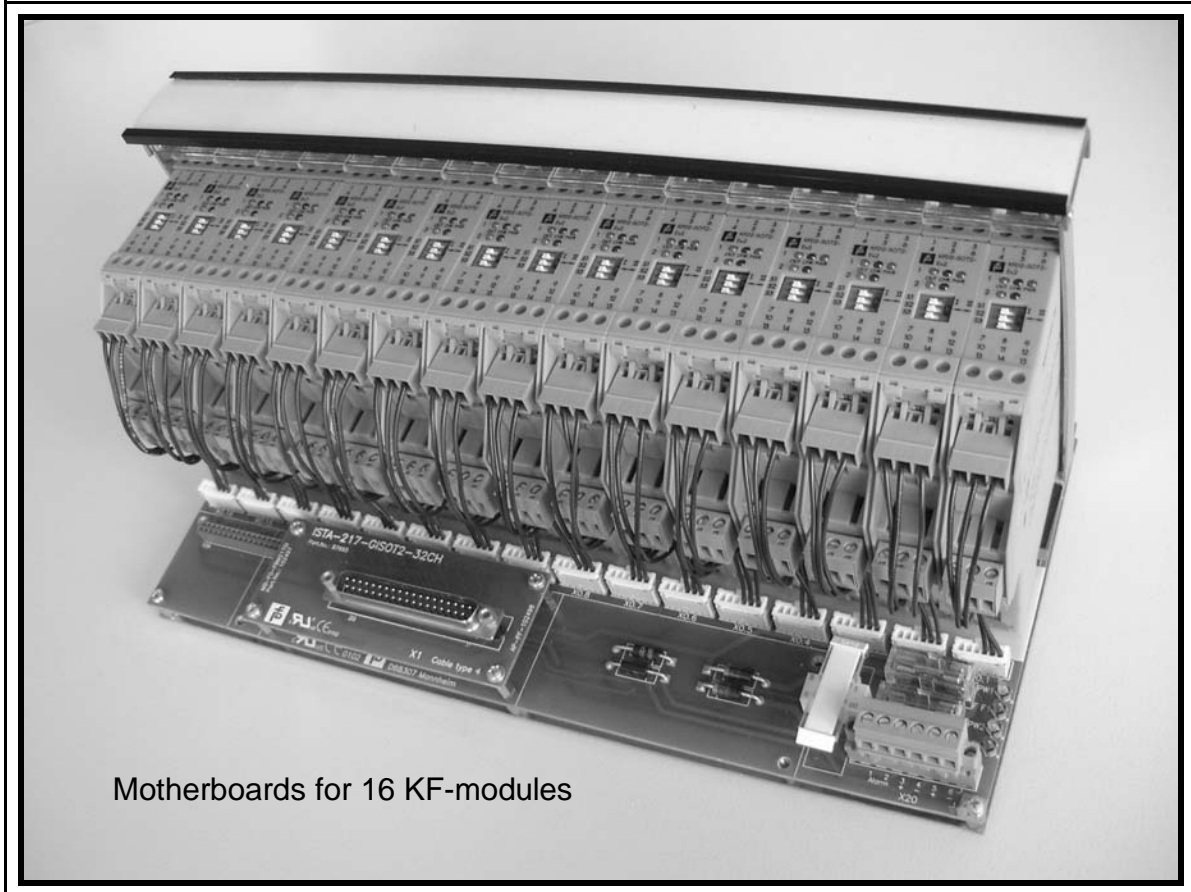
Terminal strip (removable) for redundant power supply and message contact for monitoring the power, optional breakage and short circuit monitoring.

Cable connector (FSY) between the modules and the PCB

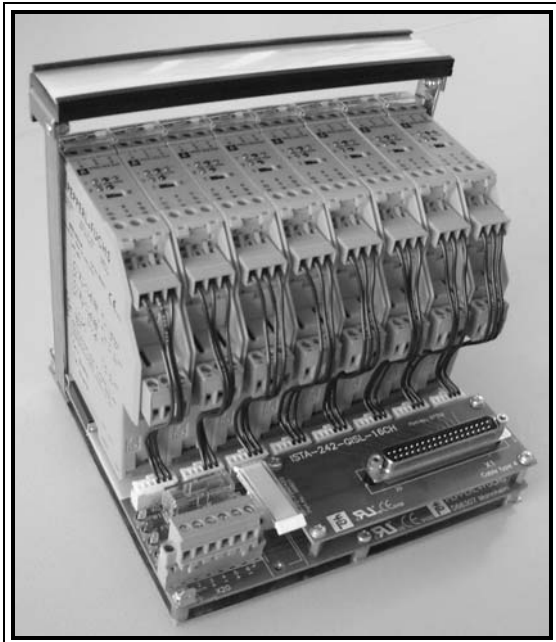
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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard for 16 modules General description	23.02.01		vB	vB	Sb/vB	
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	Nr. 36-6227				
			Up date: xx.xx.xx	Replaces: xxxxxx / 36-xxxx			Sheet 1	
			Scale:				of 1	

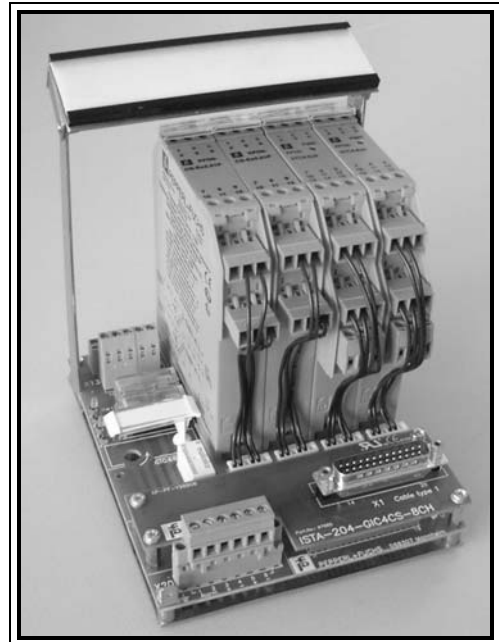
Sample Foxboro Motherboards with KF-modules



Motherboards for 16 KF-modules




Motherboards for 8 KF-modules

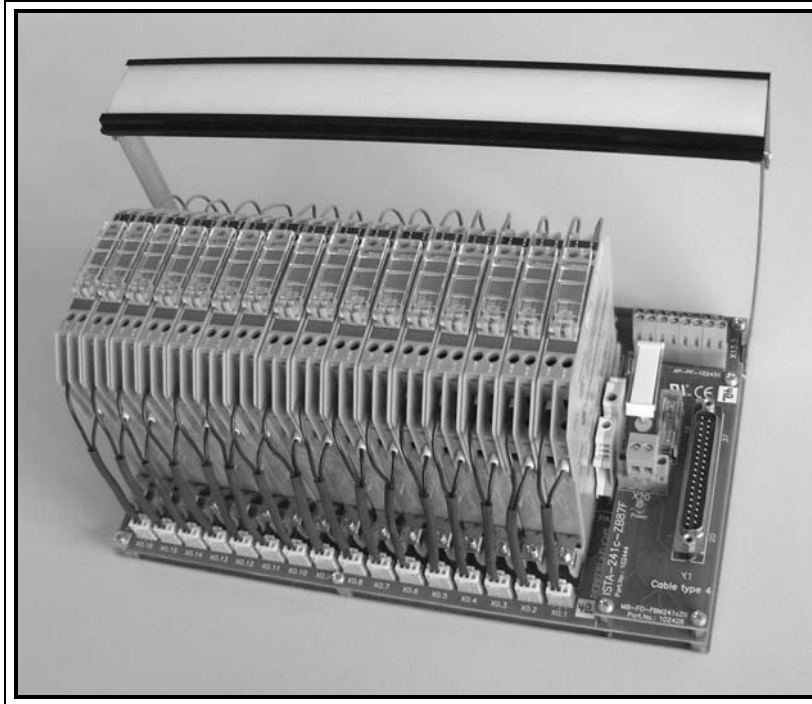


Motherboards for 4 KF-modules

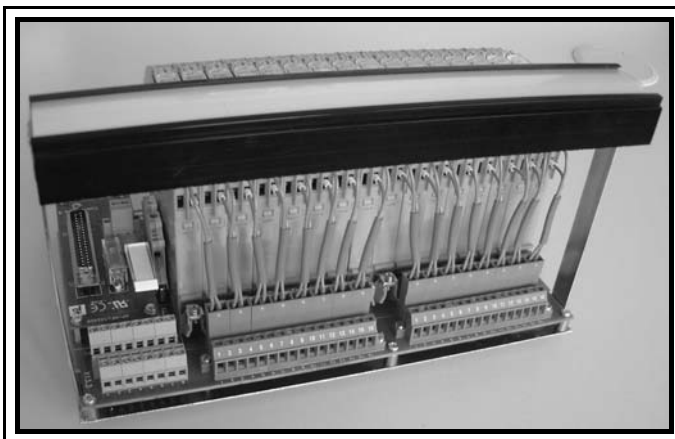
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	PEPPERL+FUCHS Mannheim-Schönau	Motherboards with modules	23.02.01	vB	vB	Sb/vB	
			Date	S	TZ	Off. in ch.	contr. techn.
			Dept.: PA-VP		Nr. 36-6228		
			Up date: - / - xx.xx.xx		Replaces: xxxxxx / 36-xxxx		Sheet 1
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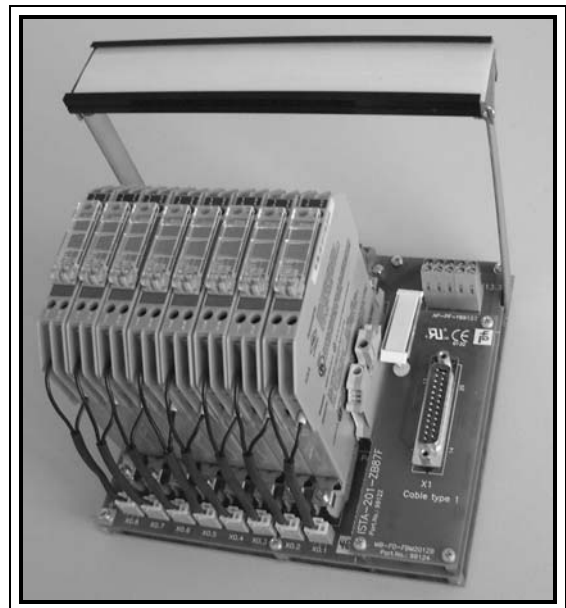
Sample Foxboro Motherboards with zener barriers



Motherboards for 16 zener barriers



Motherboards for 16 zener barriers (rear view)




Motherboards for 8 zener barriers



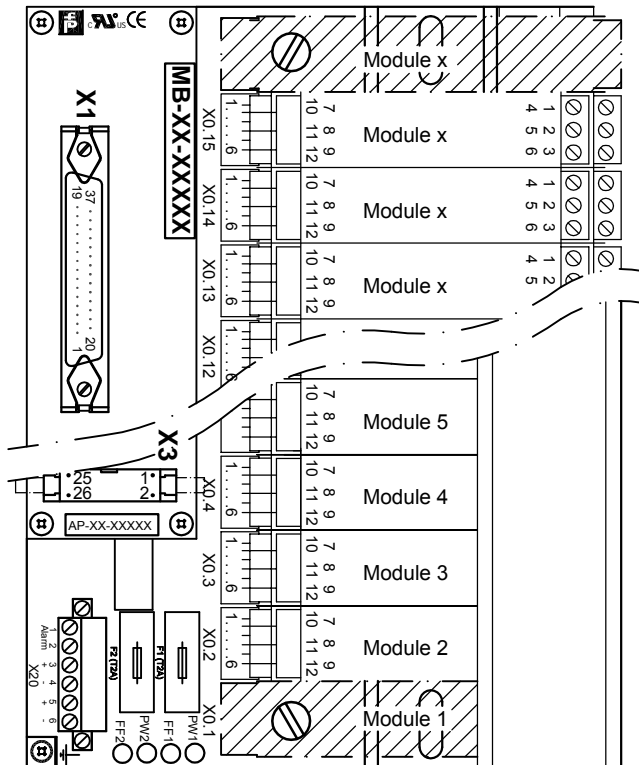
zener barriers with FSY cables

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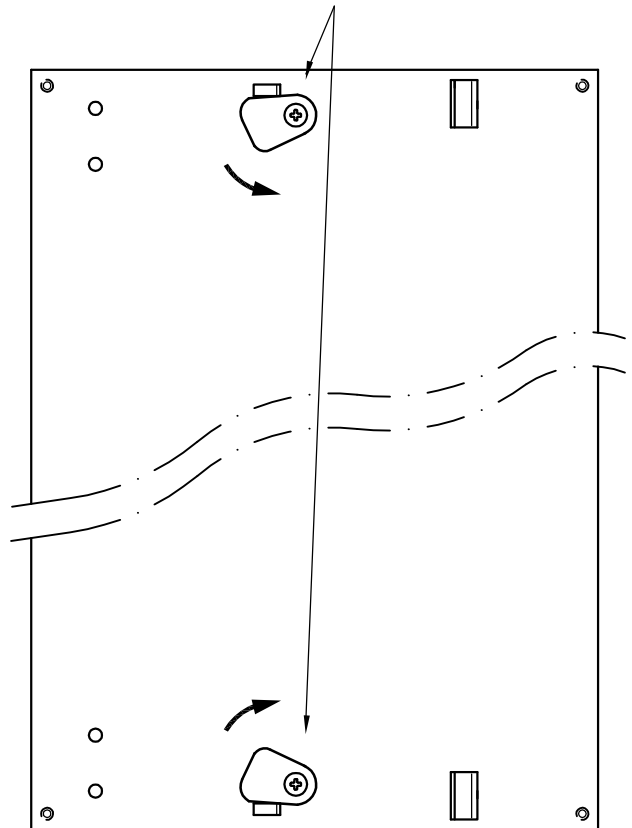
	PEPPERL+FUCHS Mannheim-Schönau	Motherboards with zener barriers	23.02.01		vB	vB	Sb/vB	
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	Nr. 36-6229				
			Up date: xx.xx.xx	Replaces: xxxxxx / 36-xxxx			Sheet 1	
			Scale:				of 1	

Installations instructions

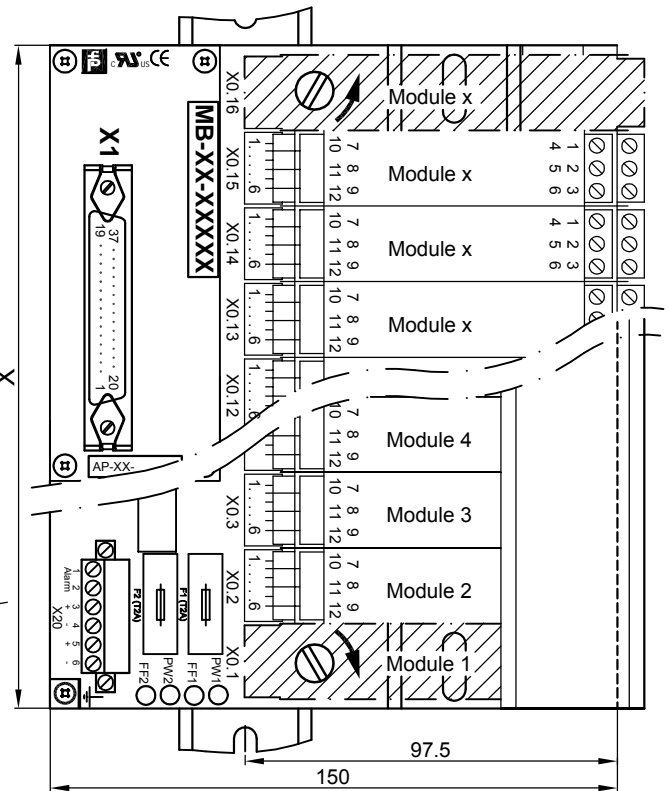
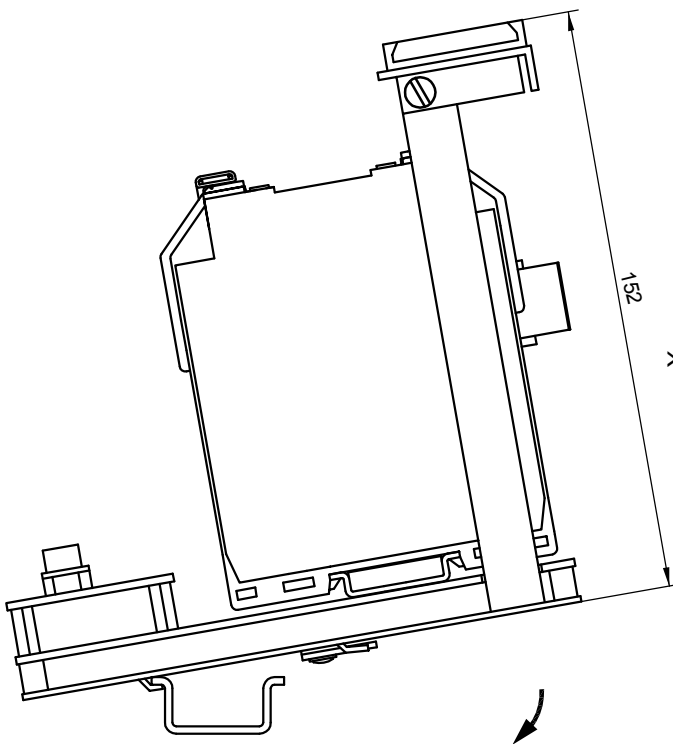
1. Take away first and last module.
Operate the screw to fix the board on to the DIN rail.



2. Turn the part as shown 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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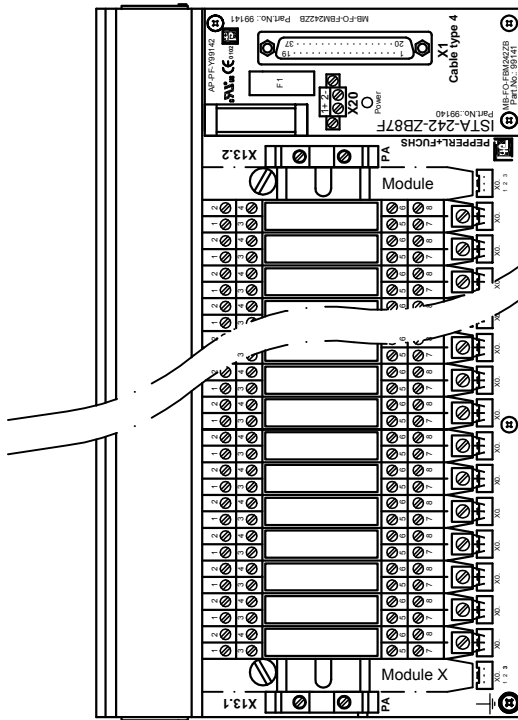
PEPPERL+FUCHS
Mannheim-Schönau

Installations instructions
for Motherboards installed
in vertical position

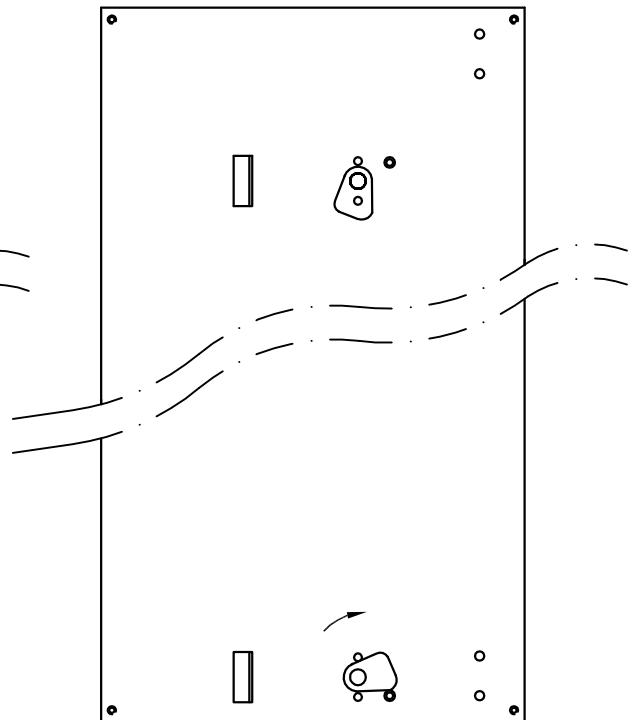
07.09.01	KT	vB	Sb/vB	
Date	S	TD	Off. in ch.	contr. Norm
Dept.: PA-VP	Sch/Bro		No. 36-9159A1	
Up date: 02.02.04	Replaces:		xxxxxx / 36-xxxx	Sheet 1
Scale:			-	of 1

Installations instructions

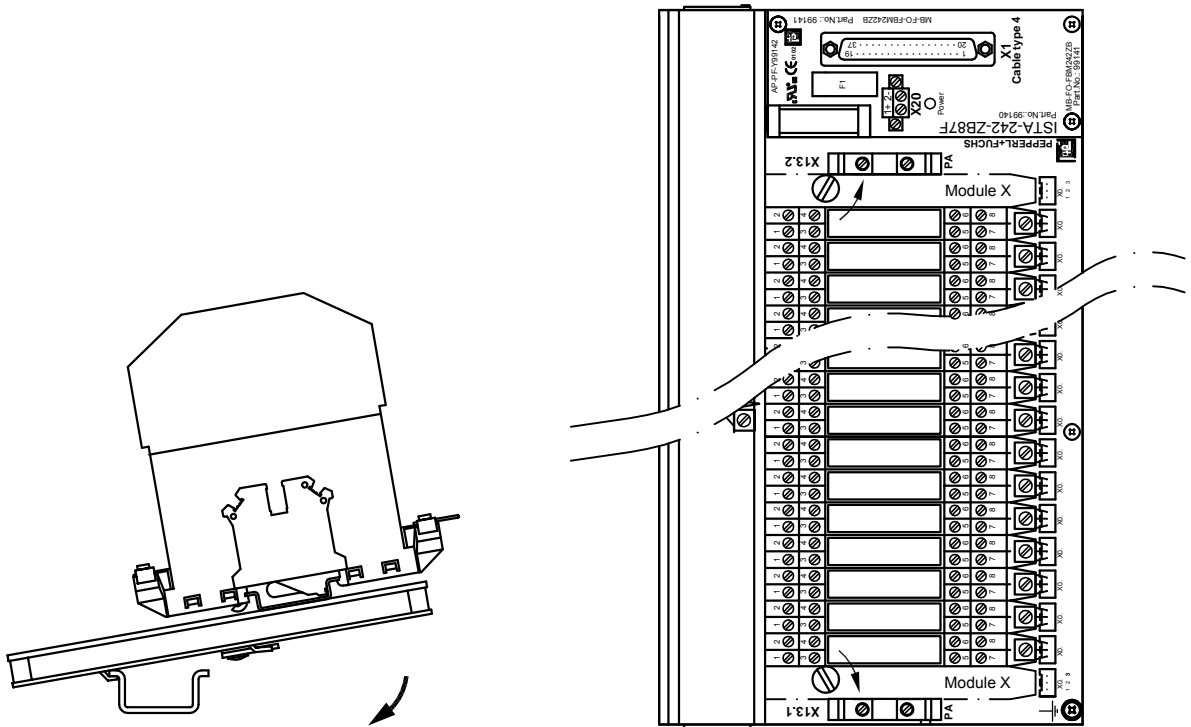
1. Take away Module 1 and 16



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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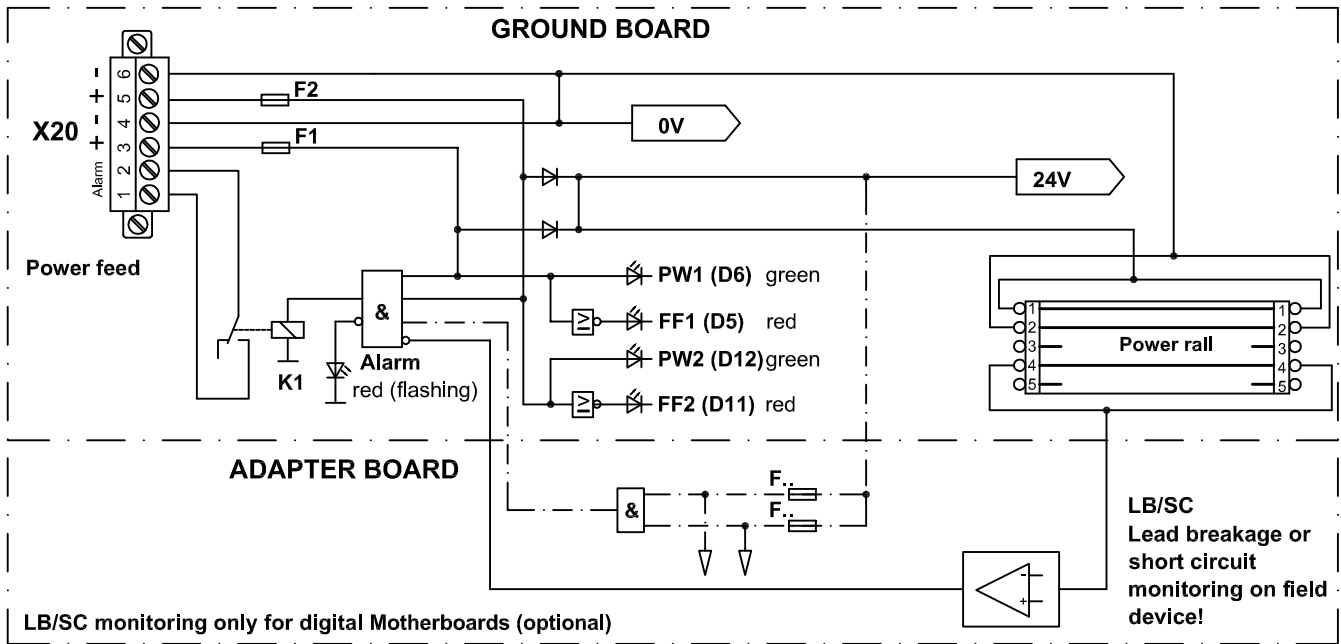


PEPPERL+FUCHS
Mannheim-Schönau

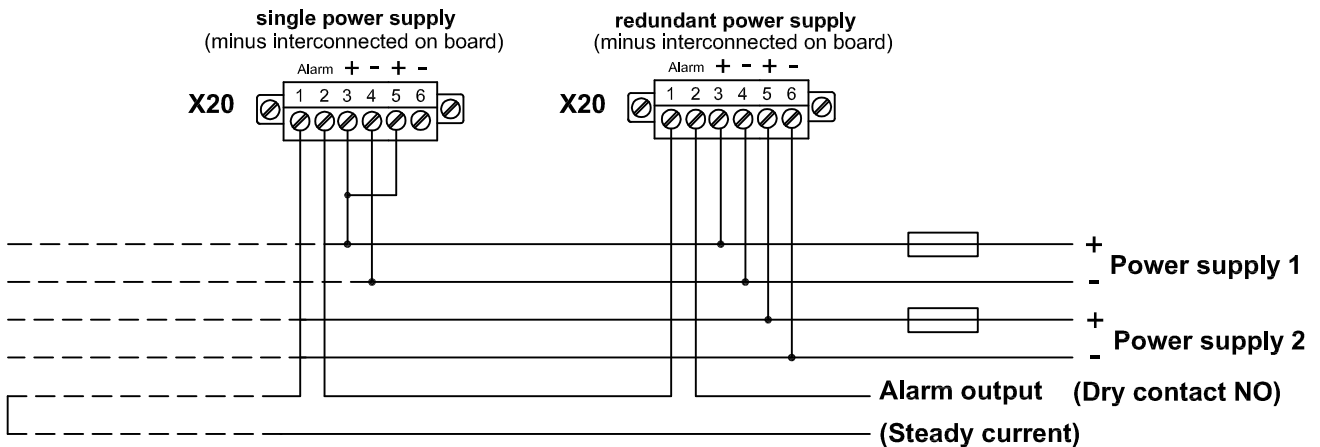
Installations instructions
for Z-Motherboards
in vertical position

11.01.00		Dn	vB	Sb/vB	
Date	S	TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP			No. 36-9151		
Up date: 24.03.04			Replaces:	-	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

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

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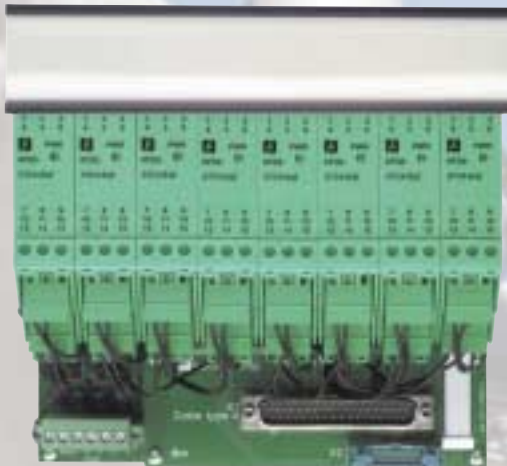
Intrinsic Safety Termination Assemblies with Galvanic Isolators for Use with I/A Series[®] Fieldbus Modules



Features

- Reduced engineering and installation costs
- Galvanic isolators for intrinsic safety
- Connects easily to FBM Series with standard Foxboro cables
- Modules mount on a motherboard backplane
- Power Rail supplies 24 VDC
- Redundant power supply connections
- LED indication for loss of power
- Replace isolators without disturbing field wiring

Pepperl+Fuchs, a leading developer of intrinsic safety products, has teamed with Foxboro[®] to produce a line of termination assemblies for Foxboro's new, DIN rail mounted FBM Subsystem Series. These intrinsic safety termination assemblies, or ISTAs, consist of intrinsic safety barriers mounted on a specially built backplane. ISTAs make intrinsic safety simple: just connect the termination assembly to the FBM baseplate with a standard Foxboro cable.



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Intrinsic Safety Termination Assemblies With Galvanic Isolators

Foxboro	P+F Motherboard	Description
<ul style="list-style-type: none"> • I/O card number • Signal type 	<ul style="list-style-type: none"> • Order name • Part No. • Drawing No. 	<ul style="list-style-type: none"> • Module • Motherboard • Dimensions
FBM201 FBM214 FBM216 (8 AI)	<ul style="list-style-type: none"> • ISTA-201/214/216-GIUT-8CH-188695 • Part No. 188695 • Replacement for Part No. 102501 • Drawing No. 36-7717 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-UT-Ex1, single channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-201/214/216-GISTC4-8CH-188693 • Part No. 188693 • Replacement for Part No. 97682 • Drawing No. 36-7716 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-STC4-Ex2, dual channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 4 modules (8 channels) • 1 D-SUB 25 pin, male system connector • 1 HART 26 pin, male connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 125x150x150 mm
	<ul style="list-style-type: none"> • ISTA-201/214/216-GISTC8-8CH-190089 • Part No. 190089 • Replacement for Part No. 116523 • Drawing No. 36-7730 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-STC4-Ex1, single channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 channels) • 1 D-SUB 25 pin, male system connector • 1 HART 26 pin, male connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM204 FBM205 (4 AI + 4 AO)	<ul style="list-style-type: none"> • ISTA-204-GIC4SCD-8CH-116544 • Part No. 116544 • Drawing No. 36-7429 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-STC4-Ex1, single channel, (AI) • type KFD2-SCD-Ex1.LK, single channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (4 + 4 channels) • 1 D-SUB 25 pin, male system connector • 2 HART 26 pin, male connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM207b (16 DI)	<ul style="list-style-type: none"> • ISTA-207b-GISR2-16CH-98824 • Part No. 98824 • Drawing No. 36-7099 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SR2-Ex2.2S, dual channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-207b-GISOT2-16CH--98825 • Part No. 98825 • Drawing No. 36-7100 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SOT2-Ex2, dual channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (168 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM211 (16 AI)	<ul style="list-style-type: none"> • ISTA-211-GIUT-16CH-102504 • Part No. 102504 • Drawing No. 36-7170 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-UT-Ex1, single channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 modules (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-211-GISTC4-16CH-97690 • Part No. 97690 • Drawing No. 36-7108 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-STC4-Ex2, dual channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM215 FBM218 FBM237 (8 AO)	<ul style="list-style-type: none"> • ISTA-215/218/237-GISCD-8CH-190071 • Part No. 190071 • Replacement for Part No. 97697 • Drawing No. 36-7720 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SCD-Ex1.LK, single channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 channels) • 1 D-SUB 25 pin, female system connector • 2 HART 26 pin, male connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-215/218/237-GICD-8CH-188699 • Part No. 188699 • Replacement for Part No. 97696 • Drawing No. 36-7718 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-CD-Ex1.32, single channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-215/218/237-GICS-8CH-190068 • Part No. 190068 • Replace for Part No. 97698 • Drawing No. 36-7118 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-CS-Ex2.51, dual channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 4 modules (8 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 125x150x150 mm
To be continued		

Intrinsic Safety Termination Assemblies With Galvanic Isolators

Foxboro <ul style="list-style-type: none"> • I/O card number • Signal type 	P+F Motherboard <ul style="list-style-type: none"> • Order name • Part No. • Drawing No. 	Description <ul style="list-style-type: none"> • Module • Motherboard • Dimensions
Continue FBM215 FBM218 FBM237 (8 AO)	<ul style="list-style-type: none"> • ISTA-215/218/237-GISCD2-8CH-190860 • Part No. 190860 • Replacement for Part No. 122122 • Drawing No. 36-7735 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SCD2-Ex2.LK, dual channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 4 modules (8 channels) • 1 D-SUB 25 pin, female system connector • 2 HART 26 pin, male connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM217 (32 DI)	<ul style="list-style-type: none"> • ISTA-217-GISOT2-32CH-97693 • Part No. 97693 • Drawing No. 36-7105 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SR2-Ex2.2S, dual channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 modules (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-217-GISOT2-32CH-97695 • Part No. 97695 • Drawing No. 36-7109 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SOT2-Ex2, dual channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 modules (32 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM241c (8 DI + 8 DO)	<ul style="list-style-type: none"> • ISTA-241c-GISR2SL-16CH-97699 • Part No. 97699 • Drawing No. 36-7119 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SR2-Ex2.2S, dual channel, (DI) • type KFD2-SL2-Ex2.B, dual channel, (DO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 + 8 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
	<ul style="list-style-type: none"> • ISTA-241c-GISOT2SL-16CH-98830 • Part No. 98830 • Drawing No. 36-7120 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SOT2-Ex2, dual channel, (DI) • type KFD2-SL2-Ex2.B, dual channel, (DO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (8 + 8 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm
FBM242 (16 DO)	<ul style="list-style-type: none"> • ISTA-242-GISD-16CH-97703 • Part No. 97703 • Drawing No. 36-7106 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SD-Ex1.48-90A, single channel, (DO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 modules (16 channels) • 1 D-SUB 37pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 325x150x150 mm
	<ul style="list-style-type: none"> • ISTA-242-GISL-16CH-97702 • Part No. 97702 • Drawing No. 36-7102 	<u>Module:</u> <ul style="list-style-type: none"> • type KFD2-SL2-Ex2.B, dual channel, (DO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 modules (16 channels) • 1 D-SUB 27 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 165x150x150 mm

Intrinsic Safety Termination Assemblies with Zener Barriers for Use with I/A Series[®] Fieldbus Modules



Pepperl+Fuchs, a leading developer of intrinsic safety products, has teamed with Foxboro[®] to produce a line of termination assemblies for Foxboro's new, DIN rail mounted FBM Subsystem Series. These intrinsic safety termination assemblies, or ISTAs, consist of intrinsic safety isolators mounted on a specially built backplane. ISTAs make intrinsic safety simple: just connect the termination assembly to the FBM baseplate with a standard Foxboro cable.

Features

- Reduced engineering and installation costs
- Pre-fused zener barriers for high-level analog and discrete I/O
- Barriers mount on a motherboard backplane
- Circuit disconnect for each channel
- Connects easily to FBM Series with standard Foxboro cables
- Redundant power supply connections for discrete outputs
- Replace barriers without disturbing field wiring



Foxboro and I/A Series are registered trademarks of The Foxboro Company.

Intrinsic Safety Termination Assemblies With Zener Barriers

Foxboro	P+F Motherboard	Description
<ul style="list-style-type: none"> • I/O card number • Signal type 	<ul style="list-style-type: none"> • Order name • Part No. • Drawing No. 	<ul style="list-style-type: none"> • Zener Barrier • Motherboard • Dimensions
FBM201 FBM214 FBM216 (8 AI)	<ul style="list-style-type: none"> • ISTA-201/214/216-ZB87F-190095 • Part No. 190095 • Replacement for Part No. 99122 • Drawing No. 36-7732 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 zener barriers (8 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM204 FBM205 (4 AI + 4 AO)	<ul style="list-style-type: none"> • ISTA-204-ZB87F-99134 • Part No. 99134 • Drawing No. 36-7135 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (AI) • type ZF787.F, single channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 zener barriers (4 + 4 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM207b (16 DI)	<ul style="list-style-type: none"> • ISTA-207b-ZB87F-99130 • Part No. 99130 • Drawing No. 36-7134 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 zener barriers (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM211 (16 AI)	<ul style="list-style-type: none"> • ISTA-211-ZB87F-102440 • Part No. 102440 • Drawing No. 36-7207 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (AI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 zener barriers (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM215 FBM218 FBM237 (8 AO)	<ul style="list-style-type: none"> • ISTA-215/218/217-ZB87F-199099 • Part No. 199099 • Replacement for Part No. 99137 • Drawing No. 36-7734 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (AO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 8 zener barriers (8 channels) • 1 D-SUB 25 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM217 (32 DI)	<ul style="list-style-type: none"> • ISTA-217-ZB87F-102443 • Part No. 102443 • Drawing No. 36-7209 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 32 zener barriers (32 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM241c (8 DI + 8 DO)	<ul style="list-style-type: none"> • ISTA-241C-ZB87F-102444 • Part No. 102444 • Drawing No. 36-7210 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (DI) • type ZF787.F, single channel, (DO) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 zener barriers (8 + 8 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm
FBM242 (16 DO)	<ul style="list-style-type: none"> • ISTA-242-ZB87F-99140 • Part No. 99140 • Drawing No. 36-7137 	<u>Zener Barrier:</u> <ul style="list-style-type: none"> • type ZF787.F, single channel, (DI) <u>Motherboard:</u> <ul style="list-style-type: none"> • 16 zener barriers (16 channels) • 1 D-SUB 37 pin, male system connector <u>Dimensions (wxhxd) :</u> <ul style="list-style-type: none"> • 170x160x160 mm

Notes:

2. FBM201 / FBM214 / FBM216 Application

(8 channels AI current 4 ... 20 mA)

Page

Motherboard ISTA-201/214/216-GIUT-8CH 2- 1

Part No.: 188695
Function: Analog Input
Channels: 8
System cable: Cable type 1
KF- Module (single channel): KFD2-UT-Ex1 (temperature)
Simplified schematic: drawing no. 36-6175_1
Wiring Diagram: drawing no. 36-7717

Motherboard ISTA-201/214/216-GISTC4-8CH..... 2- 5

Part No.: 188693
Function: Analog Input + HART
Channels: 8
System cable: Cable type 1
KF- Module (dual channel): KFD2-STC4-Ex2
Simplified schematic: drawing no. 36-6175_2
Wiring Diagram: drawing no. 36-7716

Motherboard ISTA-201/214/216-ZB87F 2- 9

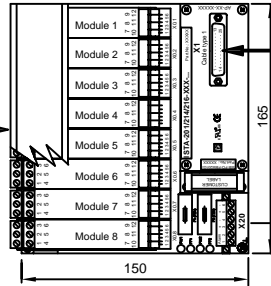
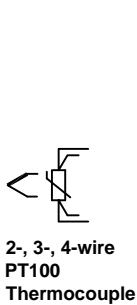
Part No.: 190095
Function: Analog Input
Channels: 8
System cable: Cable type 1
Zener Barrier (single channel): ZF787.F
Simplified schematic: drawing no. 36-6204
Wiring Diagram: drawing no. 36-7732

Notes:

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

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

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



Cable type 1

**FBM201
FBM214
FBM216**

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

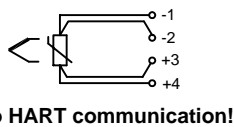
*1) see table

LOOP-DIAGRAM (single channel modules)

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

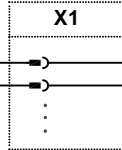
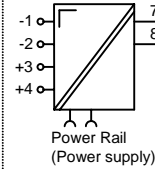
**Control room or hazardous area (Zone 2)
Motherboard**

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

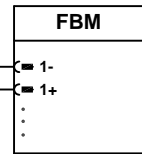


Transformer isolated barrier:

KFD2-... (Module see table)

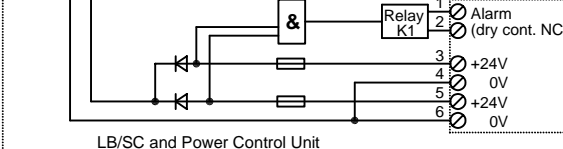


Cable type 1

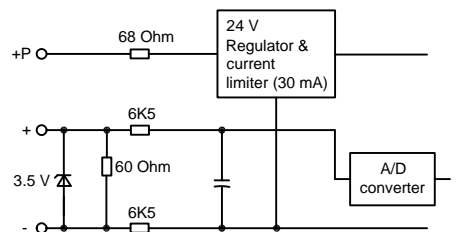


No HART communication!

LB/SC and Power Control Unit

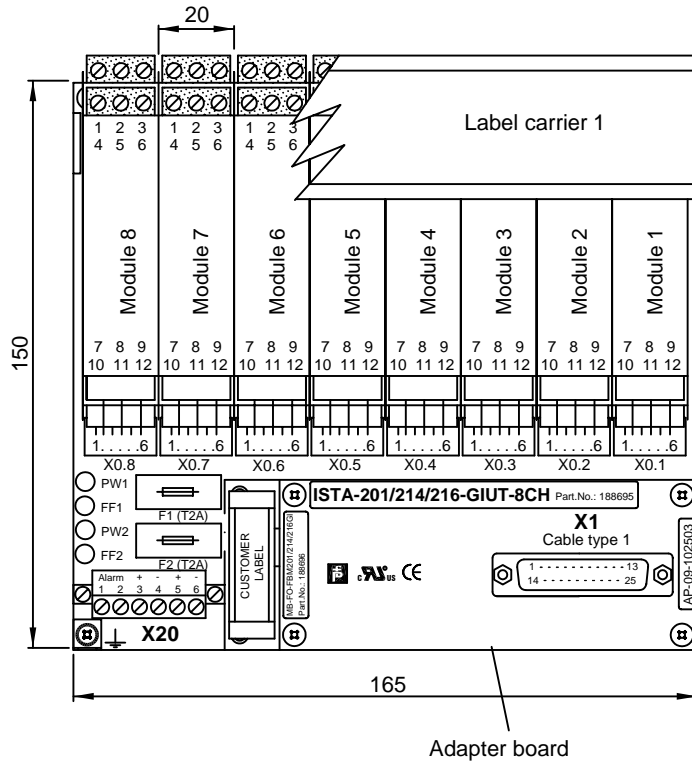


Simplified Input circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-201/214/216-GIUT-8CH-188695	AI, RTD/TC	KFD2-UT-Ex1	---	


07.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6175B1			
Doe/Bro	Replaces:			
Up date: 04.09.06	xxxxxx / 36-xxxx		Sheet 1	
Scale: 1 : 5		of 1		



Name	Note
X1	25 pin male system connector D-SUB
---	---
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: ISTA-201/214/216-GIUT-8CH-188695		
Basic components:	Description	
8 pieces:	KFD2-UT-Ex1 (RTD/TC)	KF-Module type (function)
1 piece:	MB-FO-FBM201/214/216GI-188696	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-09-102503	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
8 pieces:	FSY-L450-Y98833	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input 8 channels ISTA-201/214/216-GIUT-8CH	25.11.05	Bro	vB/Hi	Hi/vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	Nr. 36-7717			
			Up date: xx.xx.xx	Replaces: 102501/102502 / 36-7167		Sheet 1	
		MB-8U2	Scale:	1 : 2		of 2	

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
	1		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 123 	<ul style="list-style-type: none"> 1312 	1- 1+	AI Module type: KFD2-UT-Ex1 FSY- Cable type: FSY-L450-98833 KF-Module terminal no.:
	2		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 282930 	<ul style="list-style-type: none"> 2423 	2- 2+	
	3		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 789 	<ul style="list-style-type: none"> 109 	3- 3+	
	4		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 101112 	<ul style="list-style-type: none"> 2120 	4- 4+	
	5		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 131415 	<ul style="list-style-type: none"> 76 	5- 5+	
	6		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 161718 	<ul style="list-style-type: none"> 1817 	6- 6+	
	7		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 192021 	<ul style="list-style-type: none"> 43 	7- 7+	
	8		<ul style="list-style-type: none"> 456 	<ul style="list-style-type: none"> 222324 	<ul style="list-style-type: none"> 1514 	8- 8+	Loop for channel 1
		(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2	<ul style="list-style-type: none"> 49515254555657585960 	<ul style="list-style-type: none"> 2 n.c.5 n.c.8 n.c.11 n.c.16 n.c.19 n.c.22 n.c.25 n.c.1 ShieldShell 			

25.11.05	Bro	vB/Hi	Hi/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7717			
Up date: xx.xx.xx	Replaces: 102501/102502 / 36-7167		Sheet 2	
MB-8U2	Scale:		of 2	

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Analog Input
8 channels
ISTA-201/214/216-GIUT-8CH

Notes:

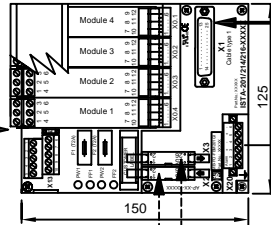
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



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



Cable type 1

FBM201
FBM214
FBM216

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

Cable type K-HM26 *1)

HART-Multiplexer

Cable type K-HM26 from second motherboard (X3)

*1) see table

LOOP-DIAGRAM (dual channel modules)

Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

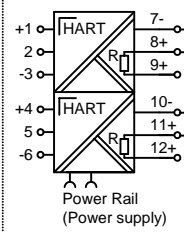
Control room non hazardous area
DCS I/O



+1
-3
+4
-6

Transformer isolated barrier:

KFD2-... (Module see table)



Power Rail (Power supply)

X1

X3

X2

X20

Cable type 1

FBM
CH 1
CH 2

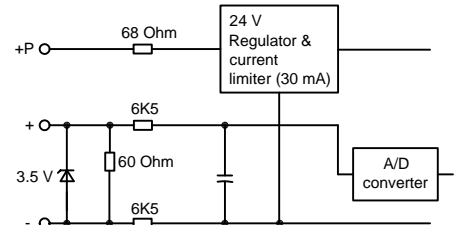
Cable type K-HM26

HART Multiplexer
CH 1
CH 2
CH 8

Cable type K-HM26

CH 1 from second motherboard (X3)

Simplified Input circuit FBM:

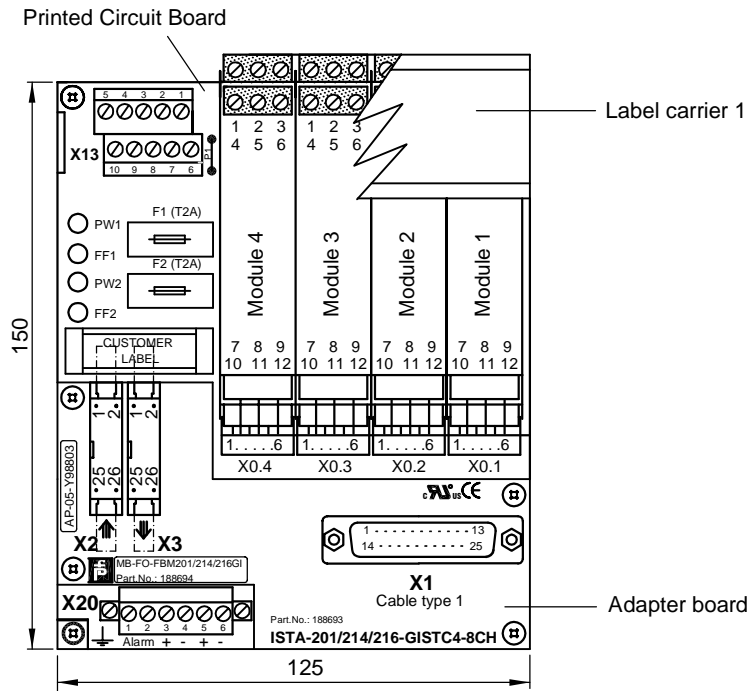


LB/SC and Power Control Unit

Motherboard	Signal	Module	HART communication *1)	Option
ISTA-201/214/216-GISTC4-8CH-188693	AI, current	KFD2-STC4-Ex2	yes	

10.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6175A2			
Doe/Bro	Replaces:			
Up date: 04.09.06	xxxxxx / 36-xxxx		Sheet 1	
		Scale: 1 : 5	of 1	

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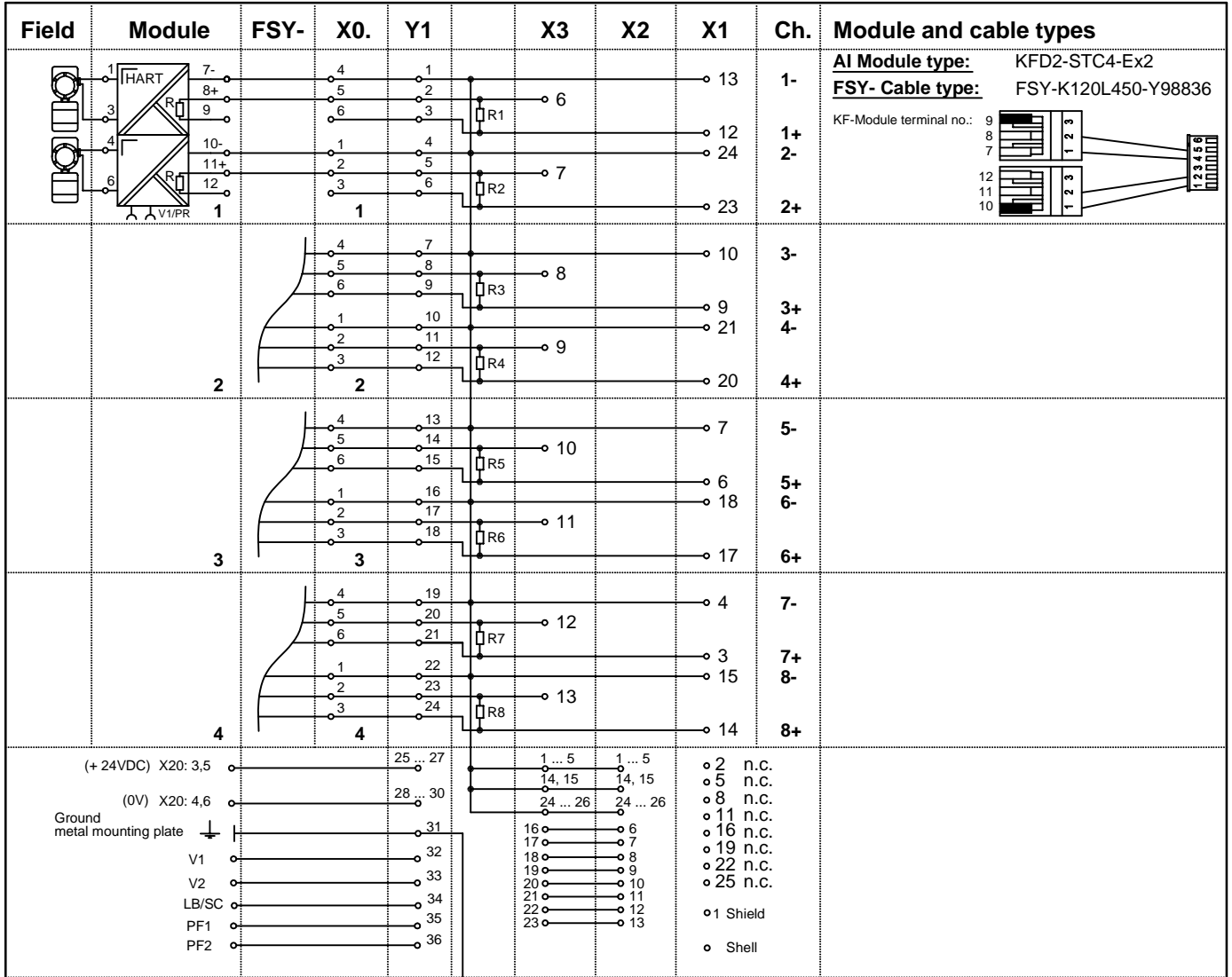
Name	Note
X1	25 pin male system connector D-SUB
X2, X3	26 pin HART connector male
X13	10 pin shielding block terminal for IS cables
X0.1 4	6 pin male terminals for cable tree FSY....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: ISTA-201/214/216-GISTC4-8CH-188693

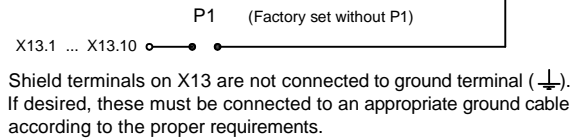
Basic components:	Description
4 pieces: KFD2-STC4-Ex2 (AI)	KF-Module type (function)
1 piece: MB-FO-FBM201/214/216GI-188694	Motherboard without modules
composed by:	
1 piece: MB-4U1-98838	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-05-Y98803	Adapter board
1 piece: KFD0-LC1-4M-99110	Label carrier 1
4 pieces: FSY-L450K120-Y98836	Cable tree connection KF-Module-Motherboard

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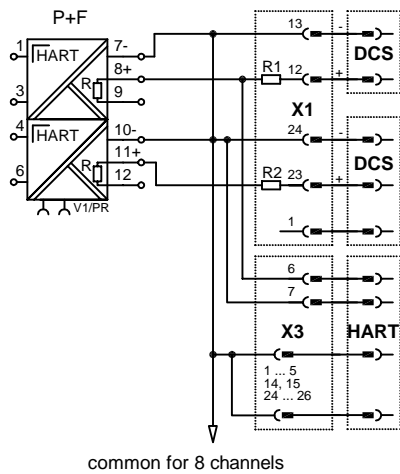
PF	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input - HART 8 channels ISTA-201/214/216-GISTC4-8CH	25.11.05	Bro	vB/Hi	Hi/vB
			Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7716			
		Up date: -:- xx.xx.xx	Replaces: 97682/97704 / 36-7093		Sheet 1	
		MB-4U1	Scale:	1 : 2		of 2



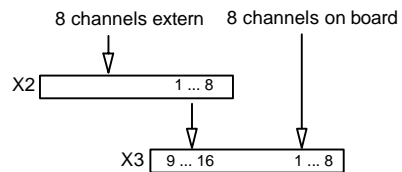
Shielding



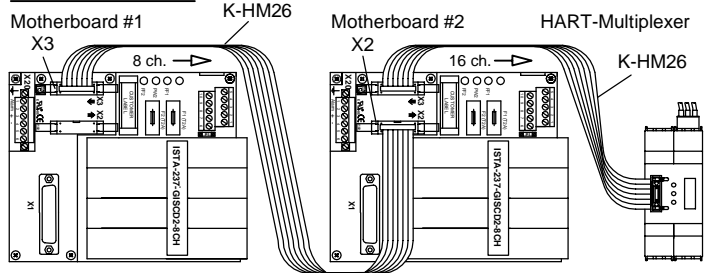
Loop for channel 1 and 2



Channels distribution:



HART connection:



R1 ... R8 : Precision resistor 250 OHM

25.11.05	Bro	vB/Hi	Hi/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7716			
Up date: - / - / xx.xx.xx	Replaces: 97682/97704 / 36-7093		Sheet 2	
MB-4U1	Scale:		of 2	

Notes:

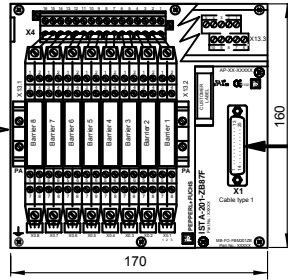
**Hazardous area (Zone 1)
Field device**

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

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



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



Cable type 1

**FBM201
FBM214
FBM216**

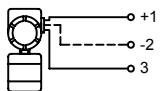
*1) see table

LOOP-DIAGRAM

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

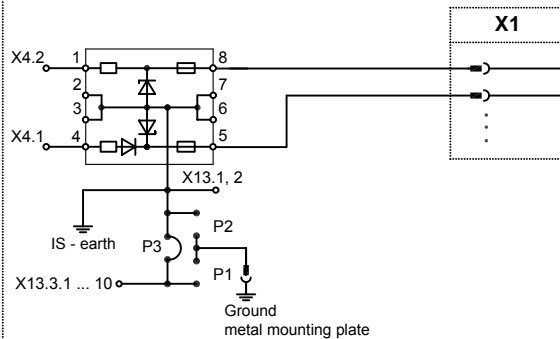
**Control room or hazardous area (Zone 2)
Motherboard**

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

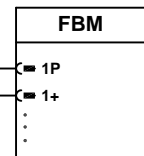


Transformer isolated barrier:

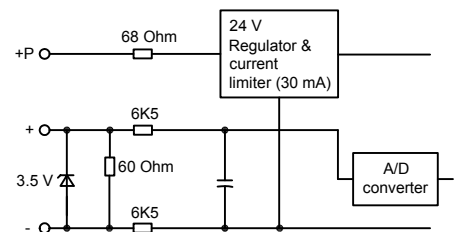
ZF... (Zener barrier see table)



Cable type 1



Simplified Input circuit FBM:



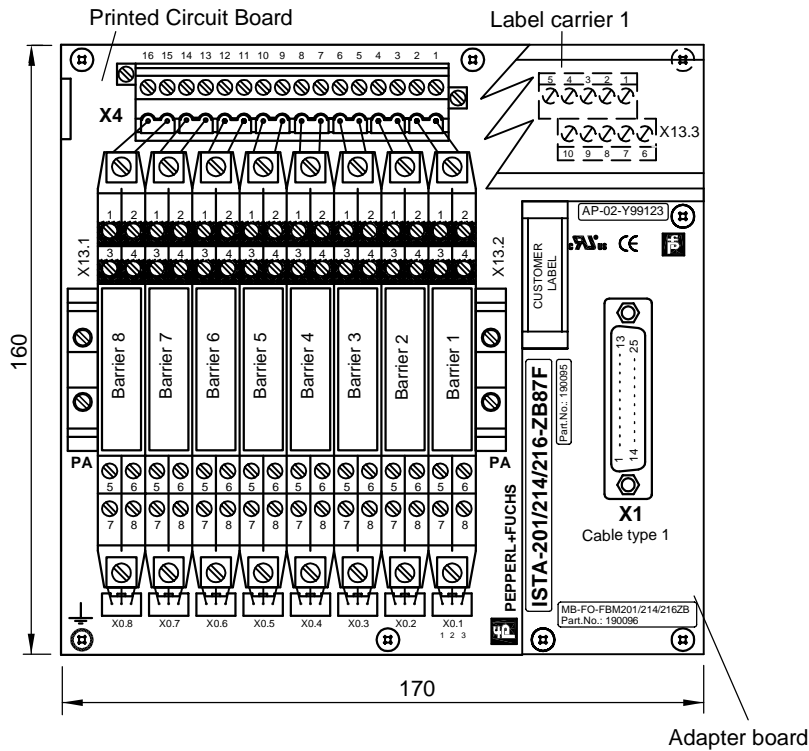
Motherboard	Signal	Module	HART communication *1)	Option
ISTA-201/214/216-ZB87F-190095	AI, current	ZF787.F	---	

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

PEPPERL+FUCHS
Mannheim-Schönau

**APPLICATION FOR
FOXBORO FBM200**


Dept.: PA - VP	No. 36-6204B
Up date: vB 11.05.07	Replaces: xxxxxx / 36-xxxx
Scale: 1 : 5	Sheet 1 of 1



Name	Note
X1	25 pin male system connector D-SUB
----	----
X4	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 10	10 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 8	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information: ISTA-201/214/216-ZB87F-190095	
Basic components:	Description
8 pieces: ZF787.F (AI)	Zener Barrier (function)
1 piece: MB-FO-FBM201/214/216ZB-190096	Motherboard without Zener barriers
composed by:	
1 piece: MB-UZ8-Y99128	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece: AP-02-Y99123	Adapter board
1 piece: KFD0-LC1-8Z-99125	Label carrier 1
8 pieces: FSU-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
8 pieces: FSU-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

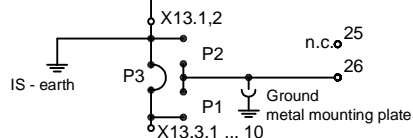
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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input 8 channels ISTA-201/214/216-ZB87F	10.01.06	Bro	vB/Hi	Hi/vB		
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm	
		Dept.: PA-VP	Nr. 36-7732		Replaces: 99122/99124 / 36-7128		Sheet 1
		Up date: xx.xx.xx	MB-UZ8	Scale:	1 : 2	of 2	

Field	X4	FSY-B-...	Zener barrier	X13.1 X13.2	FSY-S-...	X0	Y1	X1	Ch.	Barrier and cable tree types
	2					2	1	25	1P	AI Barrier type: ZF787.F FSY- Cable type: FSY-B-1L2K-99157 FSY-S-1L2K-99158
	1					1	2	12	1+	
	4					2	4	11	2P	
	3					1	5	23	2+	
	6					2	7	22	3P	
	5					1	8	9	3+	
	8					2	10	8	4P	
	7					1	11	20	4+	
	10					2	13	19	5P	
	9					1	14	6	5+	
	12					2	16	5	6P	
	11					1	17	17	6+	
	14					2	19	16	7P	
	13					1	20	3	7+	
	16					2	22	2	8P	Loop typical
	15					1	23	14	8+	

Shielding / Earthing

Factory set: P3
 P1, P2, P3: Link



- o 4 n.c.
- o 7 n.c.
- o 10 n.c.
- o 13 n.c.
- o 15 n.c.
- o 18 n.c.
- o 21 n.c.
- o 24 n.c.
- o 1 Shield
- o Shell

10.01.06	Bro	vB/Hi	Hi/vB
Date	S TZ	Off. in ch.	contr. techn. contr. Norm
Dept.: PA-VP	Nr. 36-7732		
Update: xx.xx.xx	Replaces: 99122/99124 / 36-7128		Sheet 2
MB-UZ8	Scale:	of 2	



Motherboard unit
 Analog Input
 8 channels
ISTA-201/214/216-ZB87F

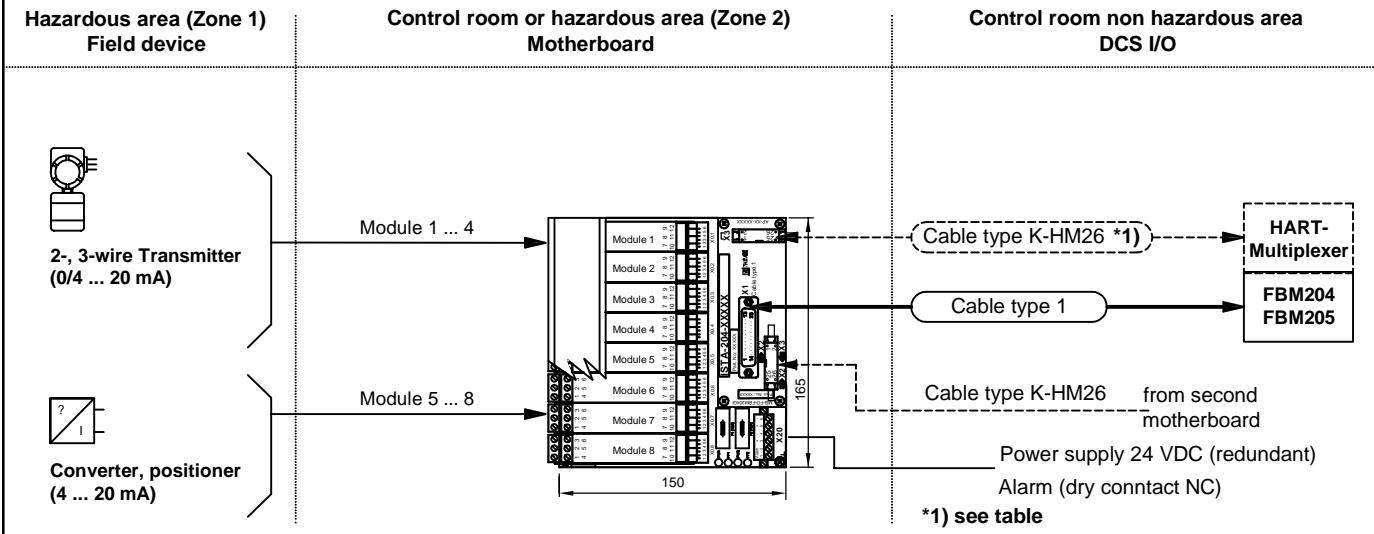
Notes:

3. FBM204 / FBM205 Application

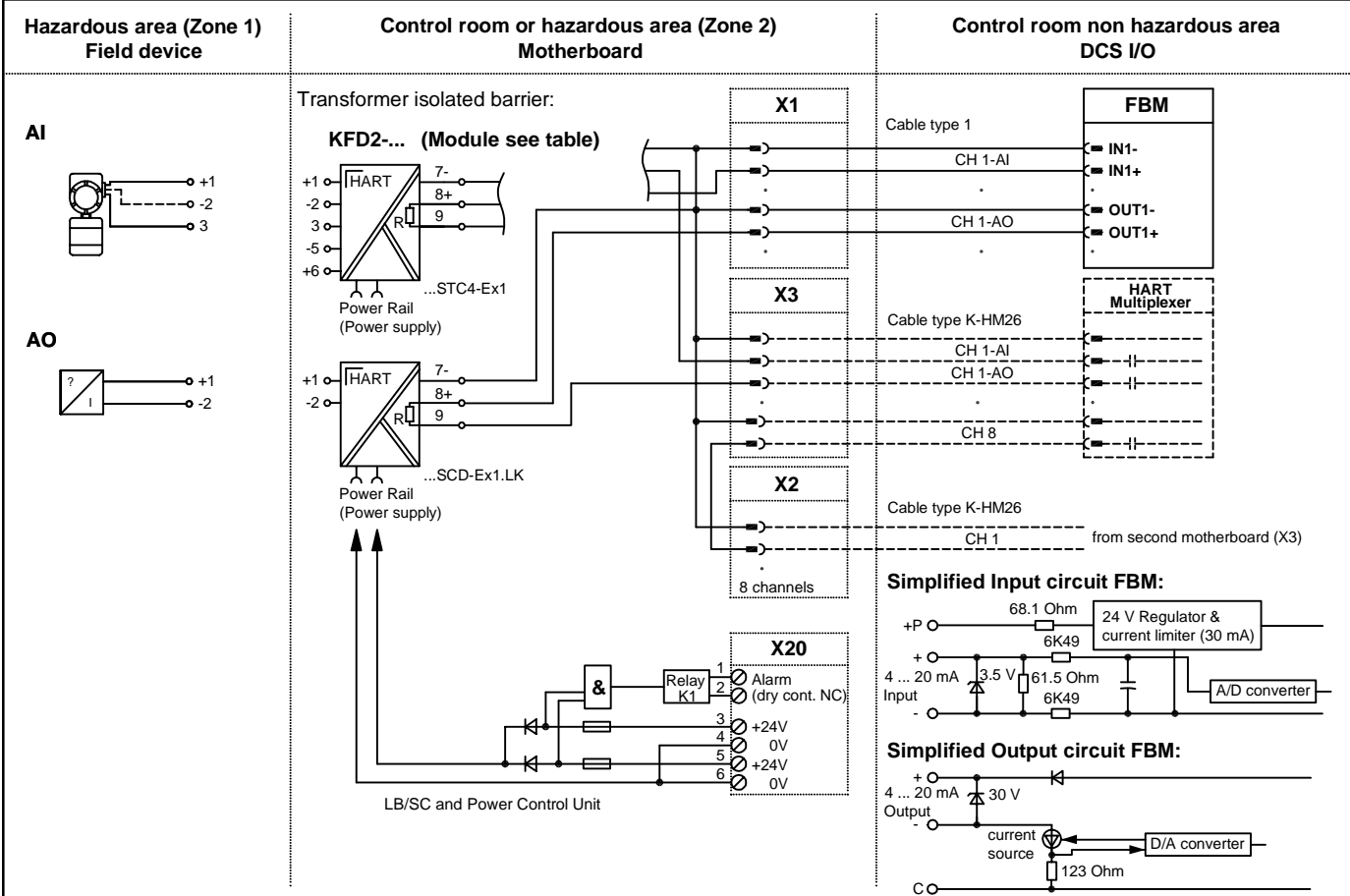
(4 channels AI + 4 channels AO current 0/4 ... 20 mA)

	Page
Motherboard ISTA-204-GIC4SCD-8CH	3- 1
Part No.:	116544
Function:	Analog Input / Output
Channels:	4 AI + 4 AO
System cable:	Cable type 1
KF- Module (single channel):	KFD2-STC4-Ex1 (AI)
KF- Module (single channel):	KFD2-SCD-Ex1.LK (AO)
Simplified schematic:	drawing no. 36-6178_1
Wiring Diagram:	drawing no. 36-7429
Motherboard ISTA-204-ZB87F	3- 5
Part No.:	99134
Function:	Analog Input / Output
Channels:	4 AI + 4 AO
System cable:	Cable type 1
Zener Barrier (single channel):	ZF787.F (AI/AO)
Simplified schematic:	drawing no. 36-6206
Wiring Diagram:	drawing no. 36-7135

Notes:



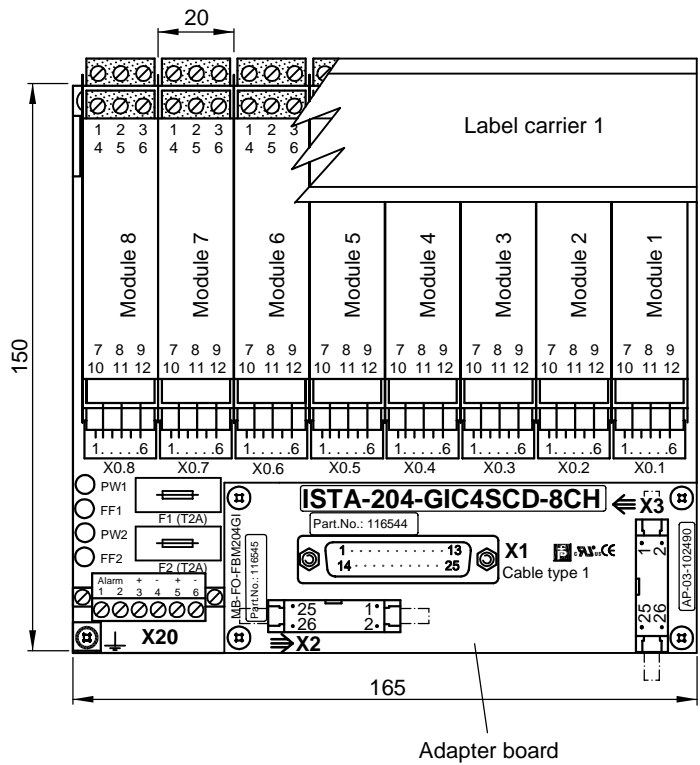
LOOP-DIAGRAM (single channel modules)



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-204-GIC4SCD-8CH-116544	AI/AO, current	KFD2-STC4-Ex1 / KFD2-SCD-Ex1.LK	yes	

10.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6178A1			
Up date: 30.03.04	Replaces: xxxxxx / 36-xxxx		Sheet 1	
Scale: 1 : 5		of 1		


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Name	Note
X1	25 pin male system connector D-SUB
X2, X3	26 pin male HART connector
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: ISTA-204-GIC4SCD-8CH-116544		
Basic components:		Description
4 pieces:	KFD2-STC4-Ex1 (AI)	KF-Module type (function)
4 pieces:	KFD2-SCD-Ex1.LK (AO)	KF-Module type (function)
1 piece:	MB-FO-FBM204GI-116545	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-03-102490	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
4 pieces:	FSY-L456-98837	Cable tree connection KF-Module-Motherboard
4 pieces:	FSY-L465-105253	Cable tree connection KF-Module-Motherboard
For application with FBM204 / FBM205		

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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input / Output - HART 4AI + 4AO channels ISTA-204-GIC4SCD-8CH	05.12.01	KT	SB	SB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. 36-7429			
		Up date: 19.04.04	Replaces: vB/Bro	xxxxx / 36-xxxx	Sheet 1	
	MB-8U2	Scale:	1 : 2	of 2		

Field	Module	FSY-	X0.	Y1	X3	X2	X1	Ch.	Module and cable types
		7- 8+ 9+	4 5 6	1 2 3	6		7 6	IN1- IN1+	AI Module type: KFD2-STC4-Ex1 FSY- Cable type: FSY-L456-98837 KF-Module terminal no.:
			4 5 6	4 5 6	7		18 17	IN2- IN2+	Loop for AI
			4 5 6	7 8 9	8		4 3	IN3- IN3+	
			4 5 6	10 11 12	9		15 14	IN4- IN4+	
		7- 8+ 9+	4 5 6	13 14 15	10		13 12	OUT1- OUT1+	AO Module type: KFD2-SCD-Ex1.LK FSY- Cable type: FSY-L465-105253 KF-Module terminal no.:
			4 5 6	16 17 18	11		24 23	OUT2- OUT2+	Loop for AO
			4 5 6	19 20 21	12		10 9	OUT3- OUT3+	
			4 5 6	22 23 24	13		21 20	OUT4- OUT4+	
			49...51 52...54	1...5 14, 15 24...26	1...5 14, 15 24...26		2 5 8 11 16 19 22 25		Channels distribution:
			55 56 57 58 59 60	16 17 18 19 20 21 22 23	6 7 8 9 10 11 12 13		02 n.c. 05 n.c. 08 n.c. 11 n.c. 16 n.c. 19 n.c. 22 n.c. 25 n.c. 01 Shield 0 Shell		

	PEPPERL+FUCHS		Mannheim-Schönau		Motherboard unit Analog Input / Output - HART 4AI + 4AO channels ISTA-204-GIC4SCD-8CH	05.12.01	KT	vB	Sb/vB	
	Date	S	TZ	Off. in ch.		contr. techn.	contr. Norm			
	Dept.:	PA-VP		vB/Br		Nr. 36-7429		Replaces:		Sheet 2
Up date:	19.04.04		xxxxx / 36-xxxx		Scale:				of 2	

Notes:

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

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

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



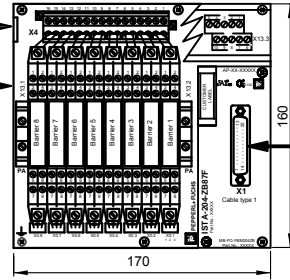
**2-wire Transmitter
(0/4 ... 20 mA)**



**Converter, positioner
(4 ... 20 mA)**

Zener barrier 1 ... 4

Zener barrier 5 ... 8



Cable type 1

**FBM204
FBM205**

*1) see table

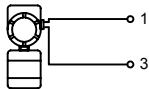
LOOP-DIAGRAM

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

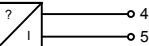
**Control room or hazardous area (Zone 2)
Motherboard**

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

AI

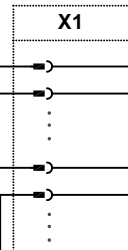
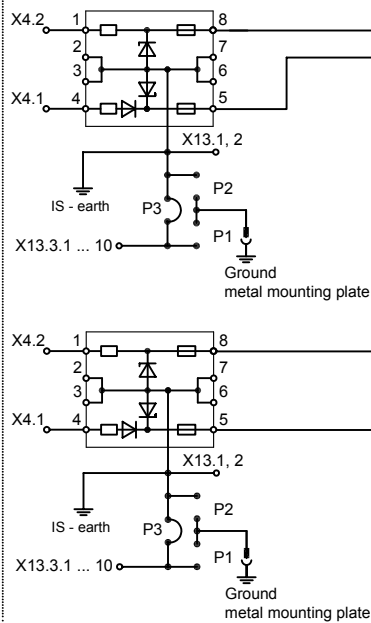


AO

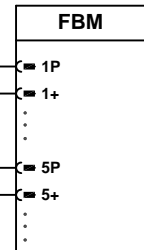


Transformer isolated barrier:

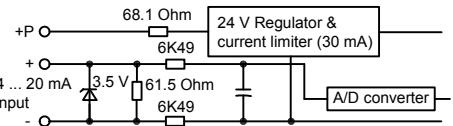
ZF... (Zener barrier see table)



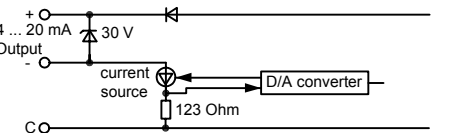
Cable type 1



Simplified Input circuit FBM:



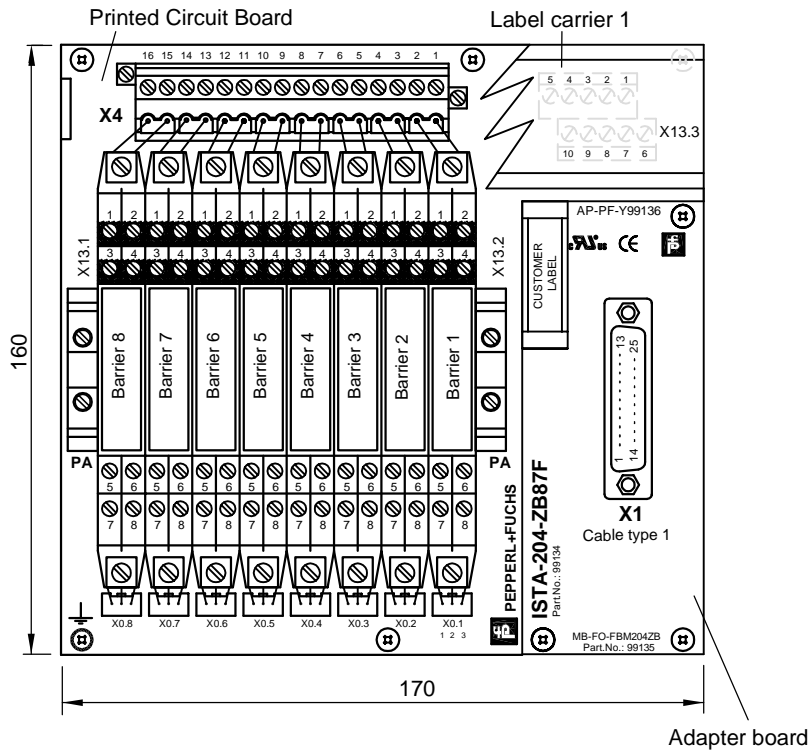
Simplified Output circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-204-ZB87F-99134	AI/AO, current	ZF787.F	---	

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


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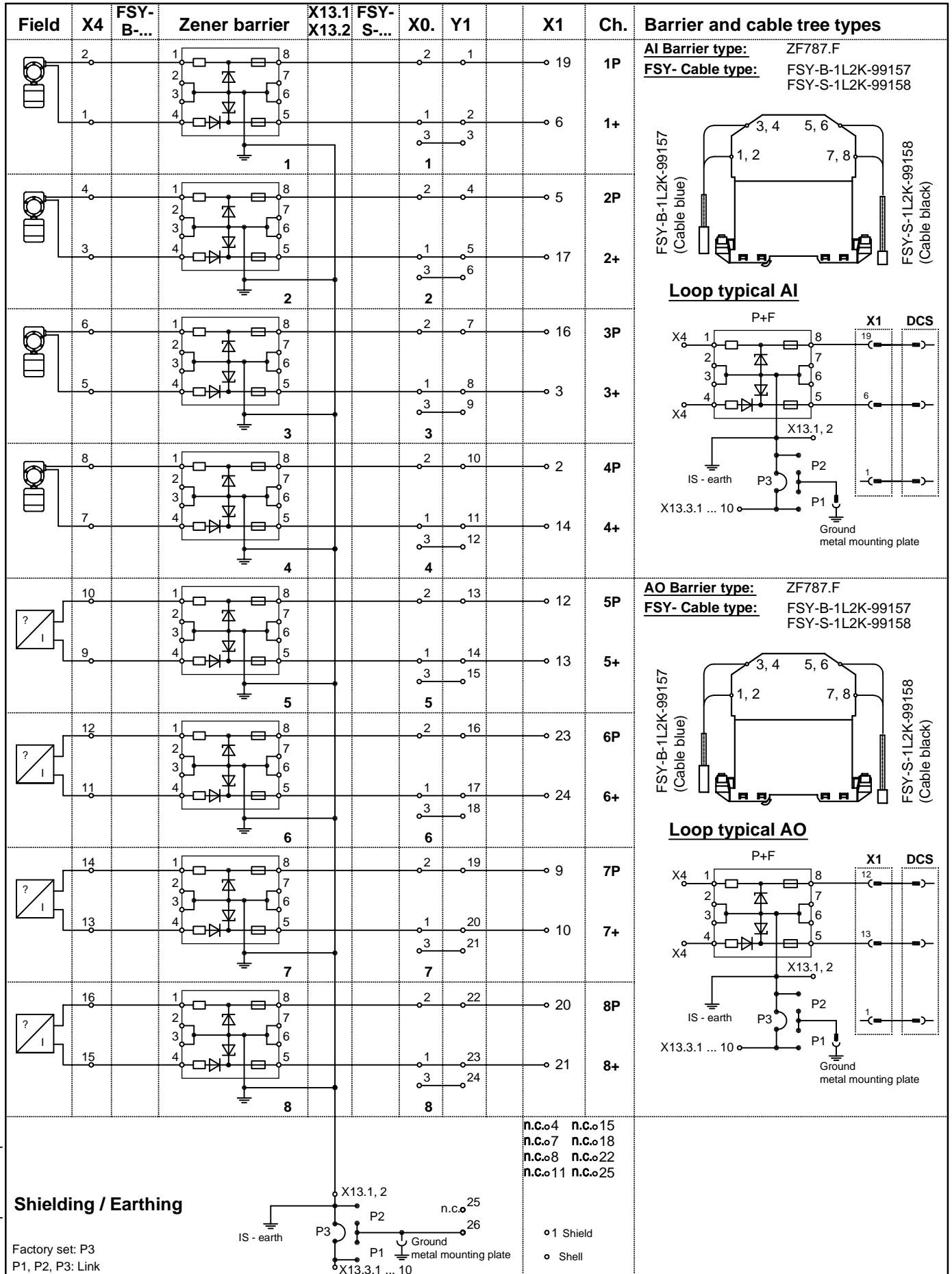


Name	Note
X1	25 pin male system connector D-SUB
----	----
X4	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 10	10 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 8	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information:		ISTA-204-ZB87F-99134
Basic components:		Description
4 pieces:	ZF787.F (AO)	Zener Barrier (function)
4 pieces:	ZF787.F (AI)	Zener Barrier (function)
1 piece:	MB-FO-FBM204ZB-99135	Motherboard without Zener barriers
composed by:		
1 piece:	MB-UZ8-Y99128	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece:	AP-PF-Y99136	Adapter board
1 piece:	KFD0-LC1-8Z-99125	Label carrier 1
8 pieces:	FSY-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
8 pieces:	FSY-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard
For application with FBM204 / FBM205		

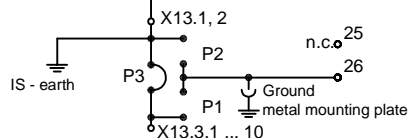
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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input / Output 4AI + 4AO channels ISTA-204-ZB87F	25.10.99	vB	vB	SB/vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Up date: vB/Bro 19.04.04		Nr. 36-7135		
		MB-UZ8	Replaces: xxxxxx / 36-xxxx		Sheet 1		
		Scale: 1 : 2		of 2			



Shielding / Earthing

Factory set: P3
 P1, P2, P3: Link



- 1 Shield
- Shell

n.c.o.4 n.c.o.15
 n.c.o.7 n.c.o.18
 n.c.o.8 n.c.o.22
 n.c.o.11 n.c.o.25

02.11.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7135				
Update: vB/Bro 19.04.04	Replaces: xxxxx / 36-xxxx			Sheet 2	
MB-UZ8	Scale:			of 2	



Motherboard unit
 Analog Input / Output
 4AI + 4AO channels
ISTA-204-ZB87F

Notes:

4. FBM207b Application

(16 channels DI)

	Page
Motherboard ISTA-207b-GISR-16CH	4- 1
Part No.:	98824
Function:	Digital Input
Channels:	16
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SR2-Ex2.2S
Simplified schematic:	drawing no. 36-6180
Wiring Diagram:	drawing no. 36-7099
Motherboard ISTA-207b-GISOT2-16CH	4- 4
Part No.:	98825
Function:	Digital Input
Channels:	16
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SOT2-Ex2
Simplified schematic:	drawing no. 36-6180
Wiring Diagram:	drawing no. 36-7100
Motherboard ISTA-207b-ZB87F	4- 7
Part No.:	99130
Function:	Digital Input
Channels:	16
System cable:	Cable type 4
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6207
Wiring Diagram:	drawing no. 36-7134

Notes:

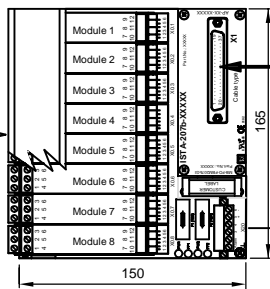
Hazardous area (Zone 1)
Field device

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



Cable type 4

FBM207b

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

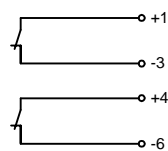
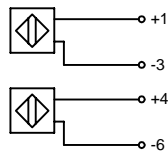
*1) see table

LOOP-DIAGRAM (dual channel modules)

Hazardous area (Zone 1)
Field device

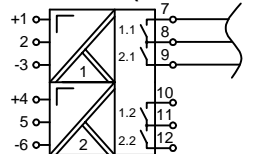
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

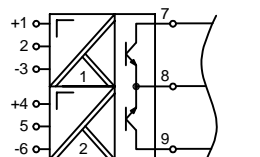


Transformer isolated barrier:

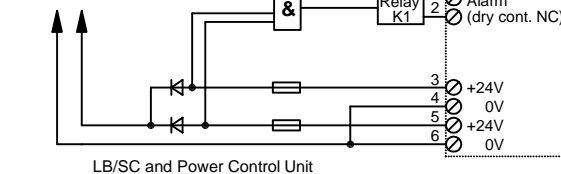
KFD2-... (Module see table)



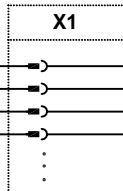
Power Rail
(Power supply+ LB/SC)



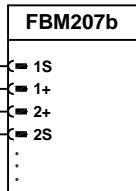
Power Rail
(Power supply+ LB/SC)



LB/SC and Power Control Unit

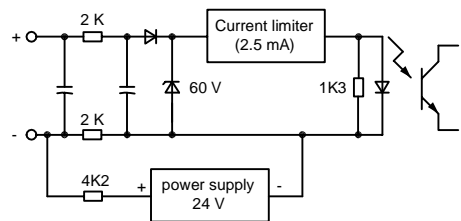


Cable type 4



FBM207b

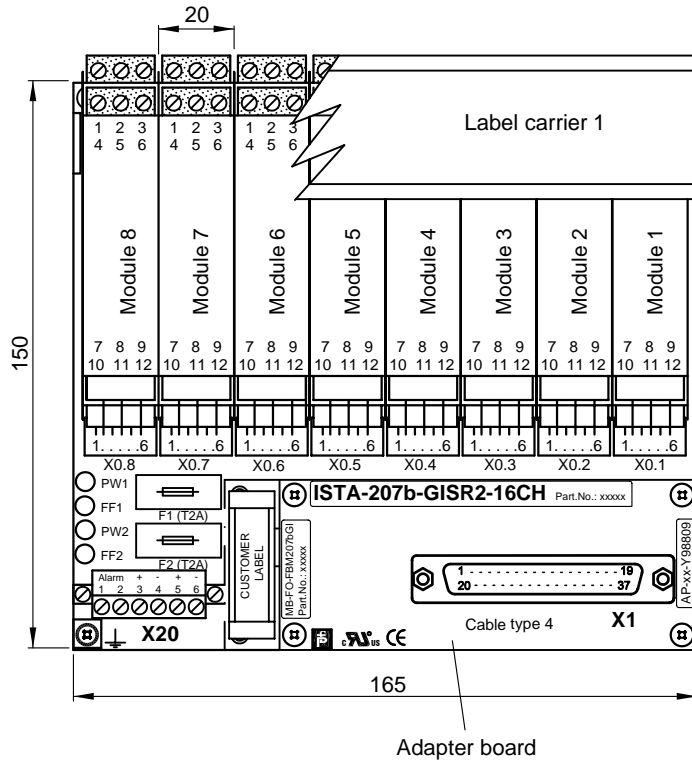
Simplified Input circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-207b-GISR2-16CH-98824	DI	KFD2-SR2-Ex2.2S	---	
ISTA-207b-GISOT2-16CH-98825	DI	KFD2-SOT2-Ex2	---	

11.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6180			
Up date: vB/Bro 19.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 1 of 1	
	Scale:	1 : 5		


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Name	Note
X1	37 pin male system connector D-SUB
---	---
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:	ISTA-207b-GISR2-16CH-98824	ISTA-207b-GISR2-16CH-192283	Description
Basic components:			
8 pieces:	KFD2-SR2-Ex2.2S (DI)	KFD2-SR2-2.2S (DI)	KF-Module type (function)
1 piece:	MB-FO-FBM207bGI-98790	MB-FO-FBM207bGI-192282	Motherboard without modules
composed by:			
1 piece:	MB-8U2-Y97680	MB-8U2-Y97680	Basis Motherboard (*)
1 piece:	AP-01-Y98809	AP-02-Y98809	Adapter board
1 piece:	KFD0-LC1-8M-99143	KFD0-LC1-8M-99143	Label carrier 1
8 pieces:	FSY-L456-Y98837	FSY-L456-Y98837	FSY-Cable tree
(*) Basis Motherboard without modules, adapter board and FSY cable tree (connection between Motherboard and Modules)			

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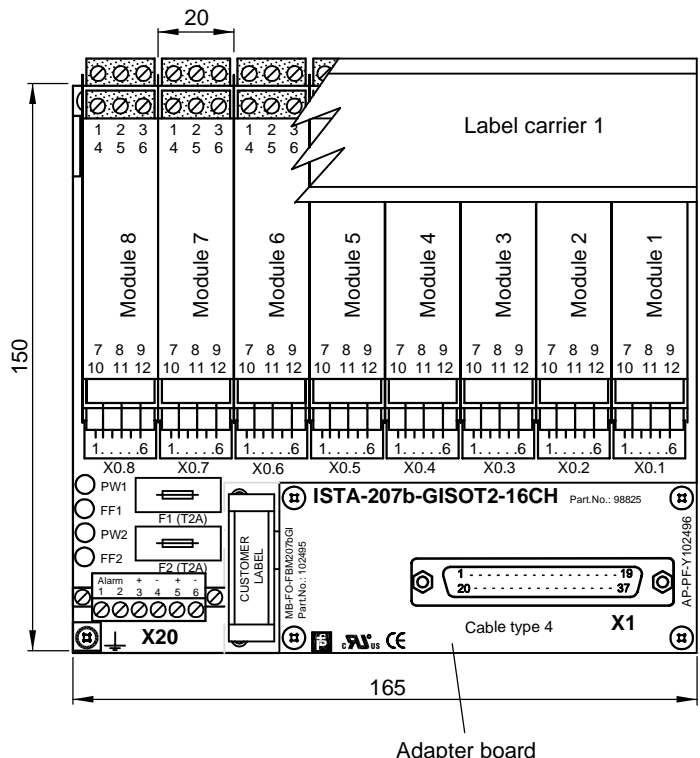
	Motherboard unit Digital Input 16 channels ISTA-207b-GISR2-16CH	03.11.99	vB	vB	vB
		Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7099A		
		vB/Bro Up date: 28.03.06	Replaces: xxxxxx / 36-xxxx		Sheet 1
		MB-8U2	Scale:	1 : 2	of 2

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
		1	1	1	18 36, 35 17	1S 1+, 2+ 2S	DI Module type: KFD2-SR2-Ex2.2S KFD2-SR2-2.2S FSY- Cable type: FSY-L456-98837 KF-Module terminal no.: 9 8 7
		2	2	2	16 34, 33 15	3S 3+, 4+ 4S	
		3	3	3	14 32, 31 13	5S 5+, 6+ 6S	
		4	4	4	12 30, 29 11	7S 7+, 8+ 8S	
		5	5	5	10 28, 27 9	9S 9+, 10+ 10S	
		6	6	6	8 26, 25 7	11S 11+, 10+ 12S	
		7	7	7	6 24, 23 5	13S 13+, 14+ 14S	
		8	8	8	4 22, 21 3	15S 15+, 16+ 16S	Loop for channels 1 and 2
					49... 51 52... 54 55 56 57 58 59 60		(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2
					02 n.c. 019 +24V (FBM) 020 n.c. 037 0V (FBM) 01 Shield 0 Shell		

30.09.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7099A		
Up date: 20.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 2		
MB-8U2	Scale:		of 2		

PEPPERL+FUCHS
Mannheim-Schönau


Motherboard unit
Digital Input
16 channels
ISTA-207b-GISR2-16CH



Name	Note
X1	37 pin male system connector D-SUB
---	---
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: ISTA-207b-GISOT2-16CH-98825		
Basic components:	Description	
8 pieces:	KFD2-SOT2-Ex2 (DI)	KF-Module type (function)
1 piece:	MB-FO-FBM207bGI-102495	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-Y102496	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
8 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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	Motherboard unit Digital Input 16 channels ISTA-207b-GISOT2-16CH	03.11.99	vB	vB	vB
		Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7100		
		vB/Bro Up date: 20.04.04	Replaces: xxxxxxx / 36-xxxx		Sheet 1
		MB-8U2	Scale:	1 : 2	of 2

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
		7 8 9	4 5 6 1 2 3	1 2 3 25 26 27	18 36, 35 17	1S 1+, 2+ 2S	DI Module type: KFD2-SOT2-Ex2 FSY- Cable type: FSY-L456-98837 KF-Module terminal no.:
		2	4 5 6 1 2 3	4 5 6 28 29 30	16 34, 33 15	3S 3+, 4+ 4S	
		3	4 5 6 1 2 3	7 8 9 31 32 33	14 32, 31 13	5S 5+, 6+ 6S	
		4	4 5 6 1 2 3	10 11 12 34 35 36	12 30, 29 11	7S 7+, 8+ 8S	
		5	4 5 6 1 2 3	13 14 15 37 38 39	10 28, 27 9	9S 9+, 10+ 10S	
		6	4 5 6 1 2 3	16 17 18 40 41 42	8 26, 25 7	11S 11+, 10+ 12S	
		7	4 5 6 1 2 3	19 20 21 43 44 45	6 24, 23 5	13S 13+, 14+ 14S	
		8	4 5 6 1 2 3	22 23 24 46 47 48	4 22, 21 3	15S 15+, 16+ 16S	Loop for channels 1 and 2
			(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2	49... 51 52... 54 55 56 57 58 59 60	o2 n.c. o19 +24V (FBM) o20 n.c. o37 0V (FBM) o1 Shield o Shell		

30.09.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7100		
Up date: 20.04.04	Replaces: xxxxx / 36-xxxx		Sheet 2		
MB-8U2	Scale:		of 2		

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Digital Input
16 channels
ISTA-207b-GISOT2-16CH

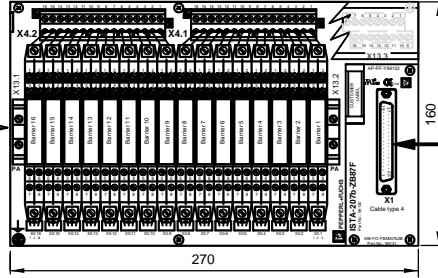
Notes:

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



Cable type 4

FBM207b

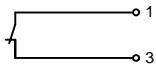
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

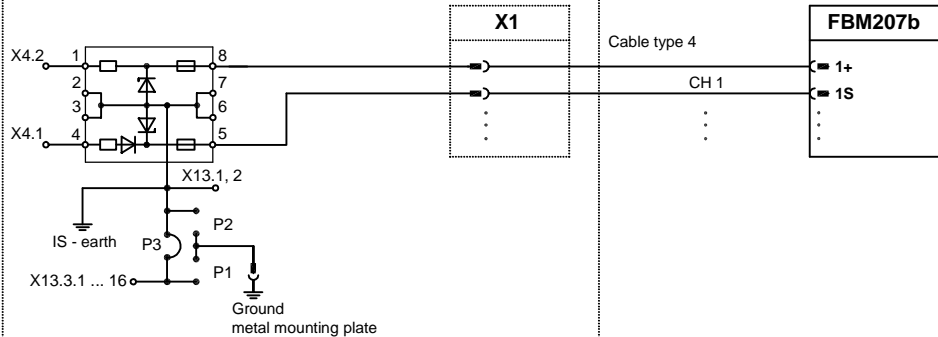
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

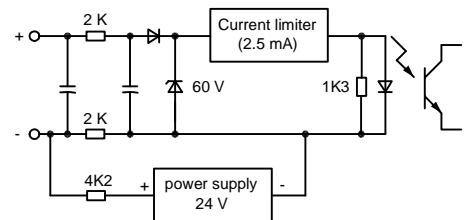


Transformer isolated barrier:

ZF... (Zener barrier see table)

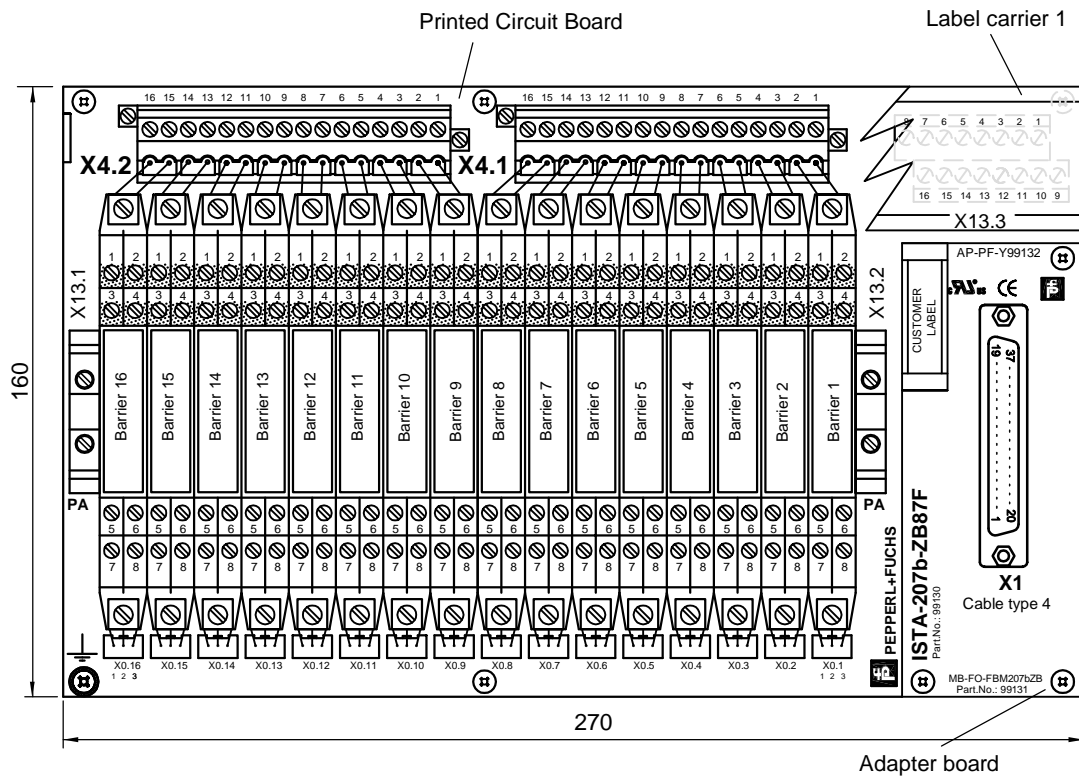


Simplified Input circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-207B-ZB87F-99130	DI	ZF787.F	---	

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

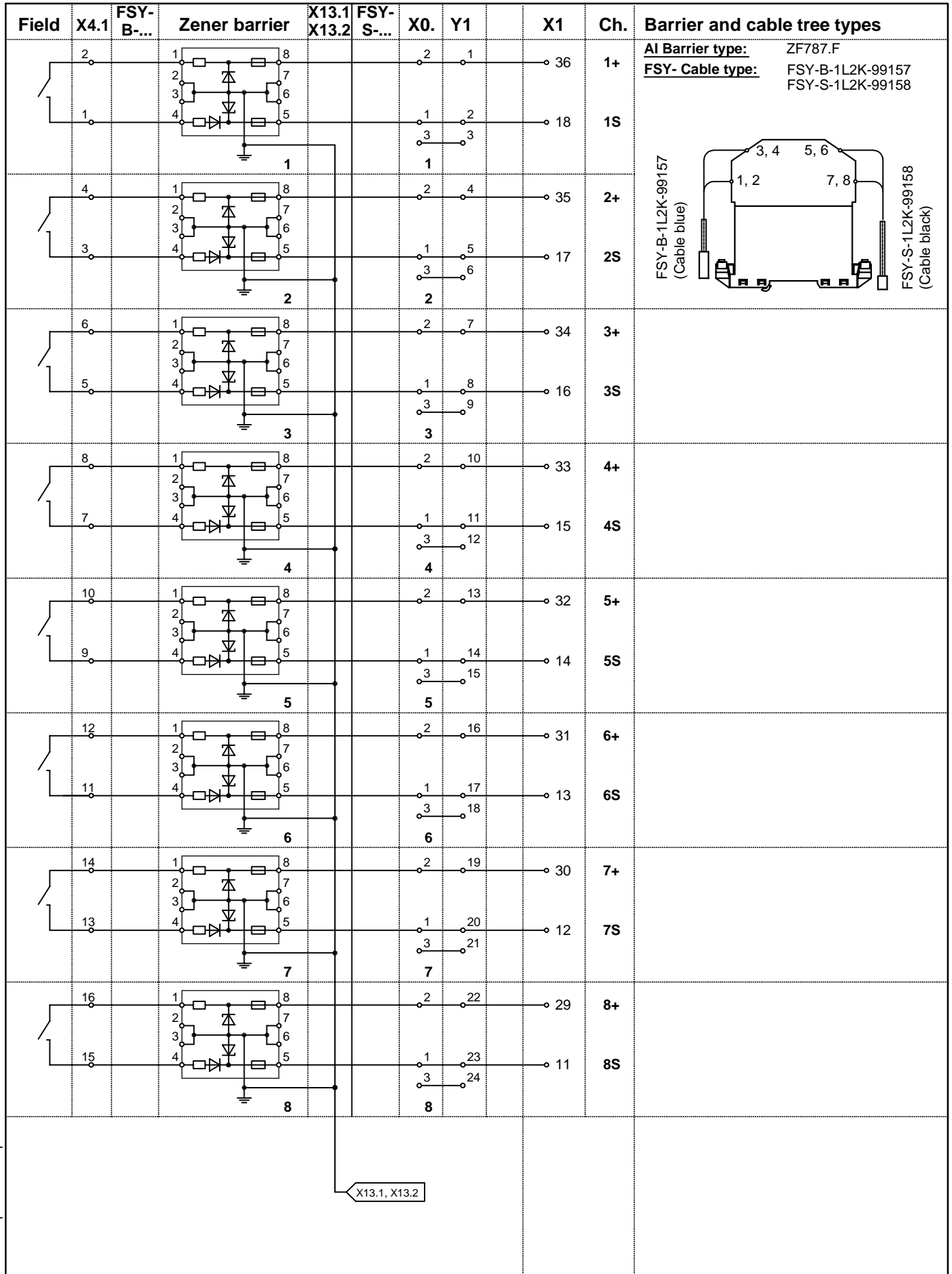


Name	Note
X1	37 pin male system connector D-SUB
----	----
X4.1, X4.2	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 16	16 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 16	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information:		ISTA-207b-ZB87F-99130
Basic components:		Description
16 pieces:	ZF787.F (DI)	Zener Barrier (function)
1 piece:	MB-FO-FBM207bZB-99131	Motherboard without Zener barriers
composed by:		
1 piece:	MB-UZ16-Y99129	Motherboard without Zener barriers, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-Y99132	Adapter board
1 piece:	KFD0-LC1-16Z-99133	Label carrier 1
16 pieces:	FSY-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
16 pieces:	FSY-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

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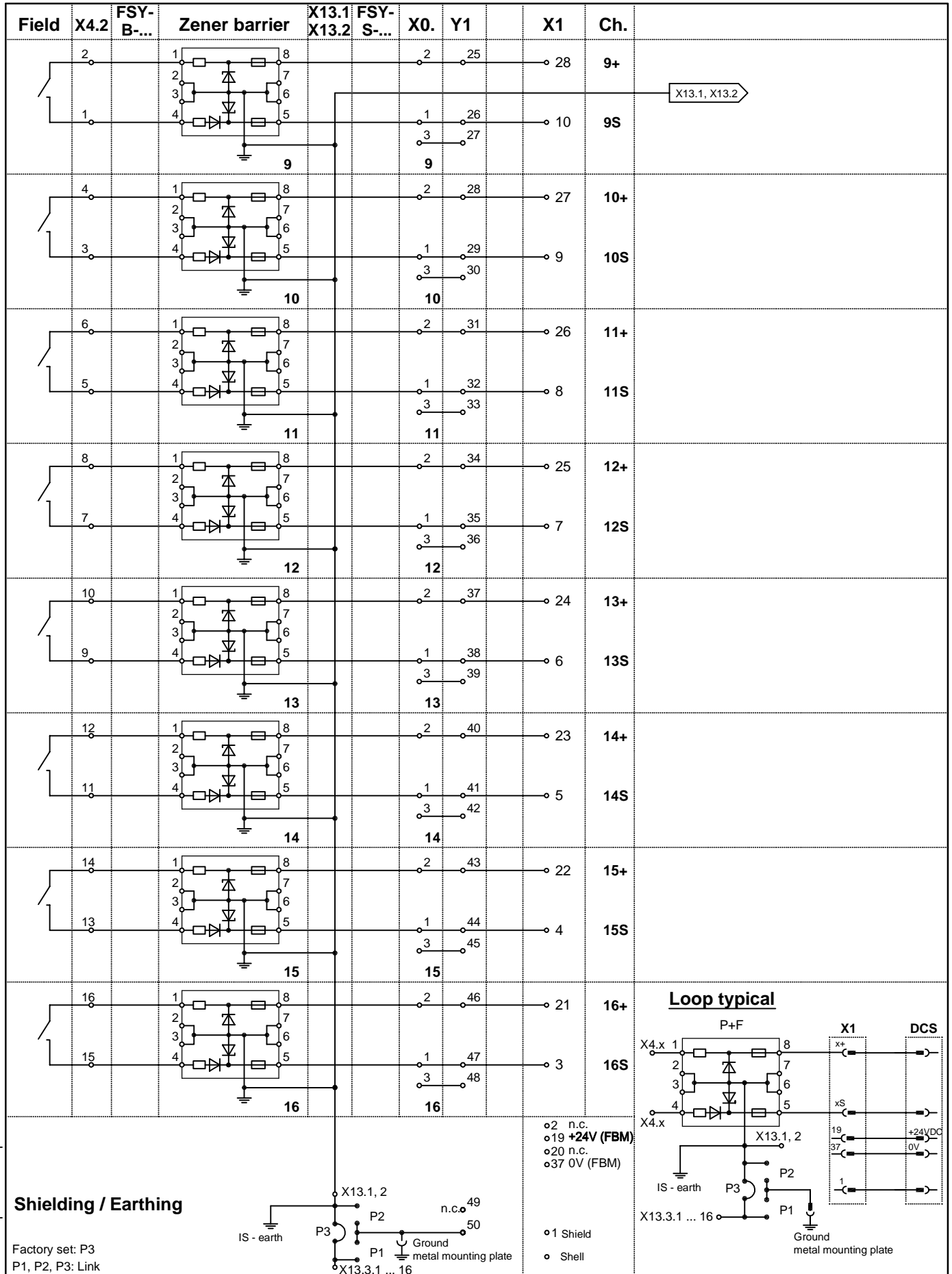
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input 16 channels ISTA-207b-ZB87F	27.10.99	vB	vB	SB/vB	
			Date	S	TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7134				
		Up date: 20.04.04	Replaces: vB/Bro xxxxx / 36-xxxx		Sheet 1		
		MB-UZ16	Scale:	1 : 2	of 3		



03.11.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7134				
Update: vB/Bro 20.04.04	Replaces: xxxxx / 36-xxxx			Sheet 2	
MB-UZ16	Scale:			of 3	

PEPPERL+FUCHS
 Mannheim-Schönau

Motherboard unit
 Digital Input
 16 channels
ISTA-207b-ZB87F



		03.11.99	vB	vB	Sb/vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	vB/Bro		Nr. 36-7134	
		Update: 20.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 3	
		MB-UZ16	Scale:		of 3	



Motherboard unit
 Digital Input
 16 channels
ISTA-207b-ZB87F

5. FBM211 Application

(16 channels AI current 4 ... 20 mA)

	Page
Motherboard ISTA-211-GIUT-16CH	5- 1
Part No.:	102504
Function:	Termocouple
Channels:	16
System cable:	Cable type 4
KF- Module (single channel):	KFD2-UT-Ex1 (temperature)
Simplified schematic:	drawing no. 36-6181A1
Wiring Diagram:	drawing no. 36-7170
Motherboard ISTA-211-GISTC4-16CH	5- 5
Part No.:	97690
Function:	Analog Input + HART
Channels:	16
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-STC4-Ex2
Simplified schematic:	drawing no. 36-6181_2
Wiring Diagram:	drawing no. 36-7108
Motherboard ISTA-211-ZB87F	5- 9
Part No.:	102440
Function:	Analog Input
Channels:	16
System cable:	Cable type 4
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6208
Wiring Diagram:	drawing no. 36-7207

Notes:

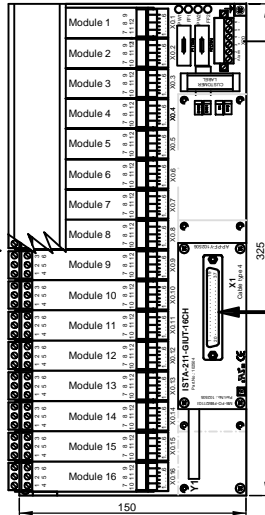
**Hazardous area (Zone 1)
Field device**

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

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



2-, 3-, 4-wire
PT100
Thermocouple



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

Cable type 4

FBM211

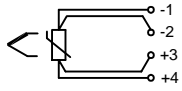
*1) see table

LOOP-DIAGRAM (single channel modules)

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

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

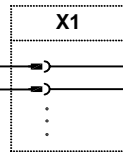
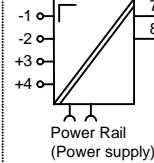
**Control room non hazardous area
DCS I/O**



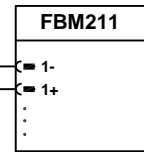
No HART-communication

Transformer isolated barrier:

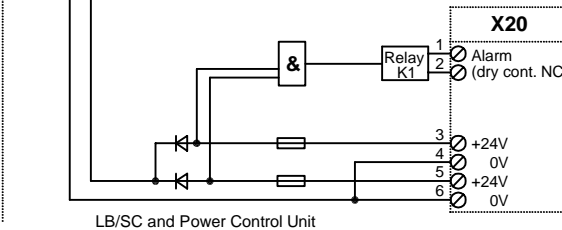
KFD2-... (Module see table)



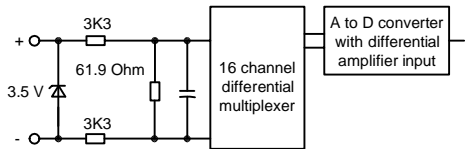
Cable type 4



FBM211



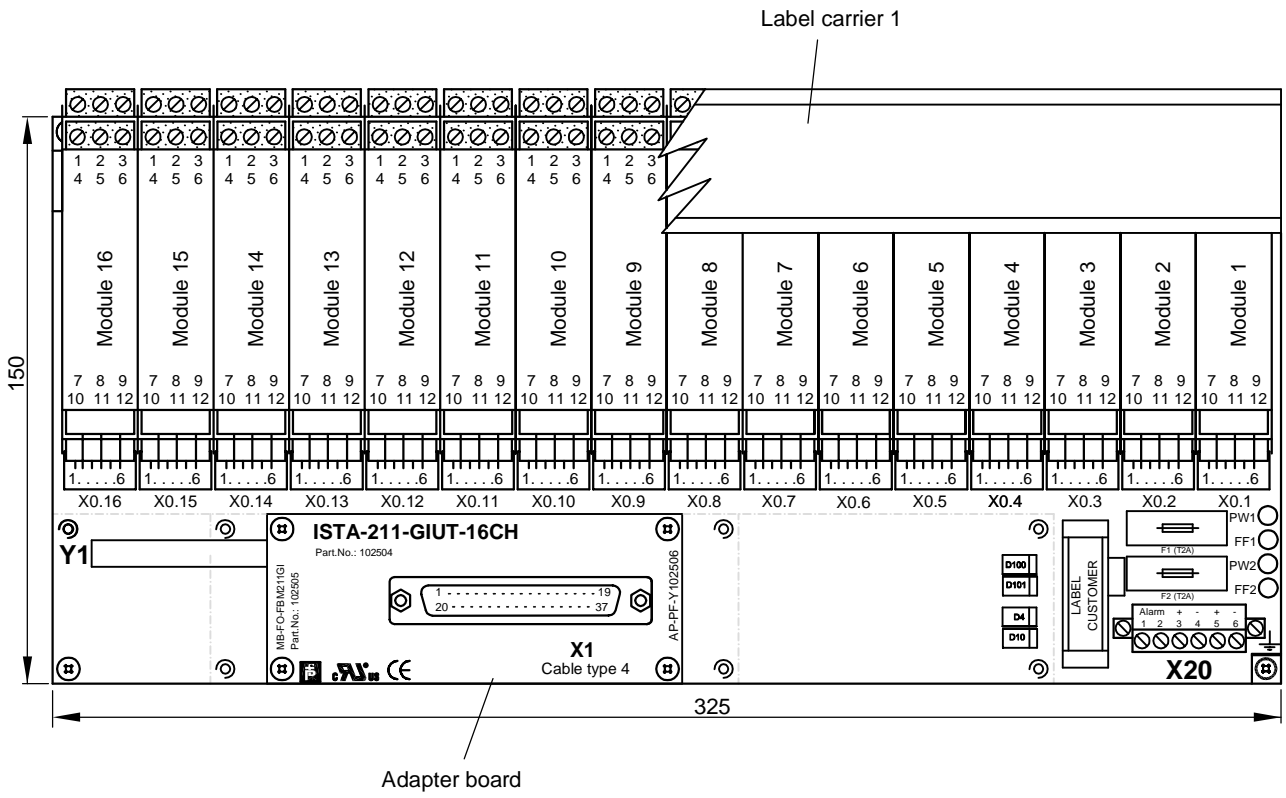
Simplified Input circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-211-GIUT-16CH-102504	AI, RTD/TC	KFD2-UT-Ex1	---	

11.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6181A1			
Up date: 20.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 1 of 1	
Scale: 1 : 5				


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Name	Note
X1	37 pin male system connector D-SUB
---	---
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: ISTA-211-GIUT-16CH-102504		
Basic components:	Description	
16 pieces:	KFD2-UT-Ex1 (TRD)	KF-Module type (function)
1 piece:	MB-FO-FBM21GI-102505	Motherboard without modules
composed by:		
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-Y102506	Adapter board
1 piece:	KFD0-LC1-16M-99144	Label carrier 1
16 pieces:	FSY-L450-Y98833	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Termocouple/RTD 16 channels ISTA-211-GIUT-16CH	31.01.99	Dn	vB	vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP		Nr. 36-7170		
			Up date: 21.04.04		Replaces: vB/Bro xxxxxx / 36-xxxx		Sheet 1
			MB-16U5L		Scale: 1 : 2		of 3

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
			4 5 6 1 2 3	1 2 3 61 62 63	36 18	1- 1+	AI Module type: KFD2-UT-Ex1 FSY- Cable type: FSY-L450-98833 KF-Module terminal no.: 9 8 7
	1		4 5 6 1 2 3	4 5 6 64 65 66	35 17	2- 2+	
	2		4 5 6 1 2 3	7 8 9 67 68 69	34 16	3- 3+	
	3		4 5 6 1 2 3	10 11 12 70 71 72	33 15	4- 4+	
	4		4 5 6 1 2 3	13 14 15 73 74 75	32 14	5- 5+	
	5		4 5 6 1 2 3	16 17 18 76 77 78	31 13	6- 6+	
	6		4 5 6 1 2 3	19 20 21 79 80 81	30 12	7- 7+	
	7		4 5 6 1 2 3	22 23 24 82 83 84	29 11	8- 8+	
	8						

				30.01.00		vB	vB	Sb/vB	
				Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit		Termocouple/RTD		16 channels		ISTA-211-GIUT-16CH	
		Dept.: PA-VP		Nr. 36-7170		Replaces: xxxxxx / 36-xxxx		Sheet 2	
		Up date: 21.04.04		Scale:		of 3			

Field	Module	FSY-	X0.	Y1	X1	Ch.
	9		4 5 6 1 2 3	25 26 27 85 86 87	28 10	9- 9+
	10		4 5 6 1 2 3	28 29 30 88 89 90	27 9	10- 10+
	11		4 5 6 1 2 3	31 32 33 91 92 93	26 8	11- 11+
	12		4 5 6 1 2 3	34 35 36 94 95 96	25 7	12- 12+
	13		4 5 6 1 2 3	37 38 39 97 98 99	24 6	13- 13+
	14		4 5 6 1 2 3	40 41 42 100 101 102	23 5	14- 14+
	15		4 5 6 1 2 3	43 44 45 103 104 105	22 4	15- 15+
	16		4 5 6 1 2 3	46 47 48 106 107 108	21 3	16- 16+
			(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2	49... 51 52... 54 55 56 57 58 59 60	<ul style="list-style-type: none"> o2 n.c. o19 +24V (FBM) o20 n.c. o37 0V (FBM) o1 Shield o Shell 	<p>Loop for channel 1</p>

30.01.00		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7170		
Up date: 21.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 3		
MB-16U5L	Scale:		of 3		

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Termocouple/RTD
16 channels
ISTA-211-GIUT-16CH

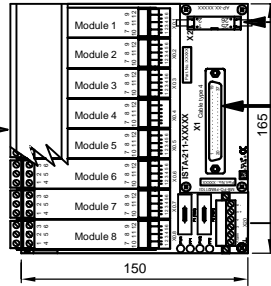
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



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



Cable type K-HM26 *1)

HART-Multiplexer

Cable type 4

FBM211

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

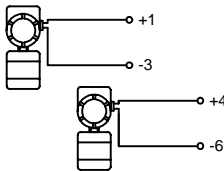
*1) see table

LOOP-DIAGRAM (dual channel modules)

Hazardous area (Zone 1)
Field device

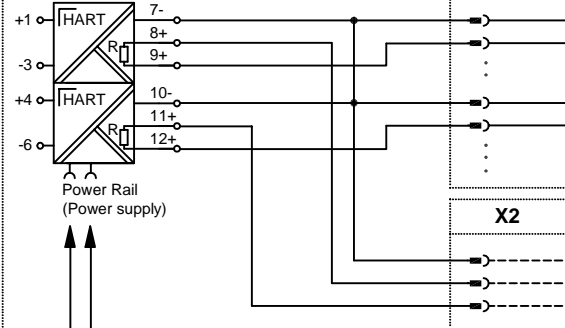
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Transformer isolated barrier:

KFD2-... (Module see table)



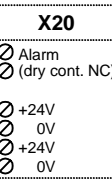
Cable type 4

FBM211

Cable type K-HM26

HART Multiplexer

Power Rail
(Power supply)



Simplified Input circuit FBM:

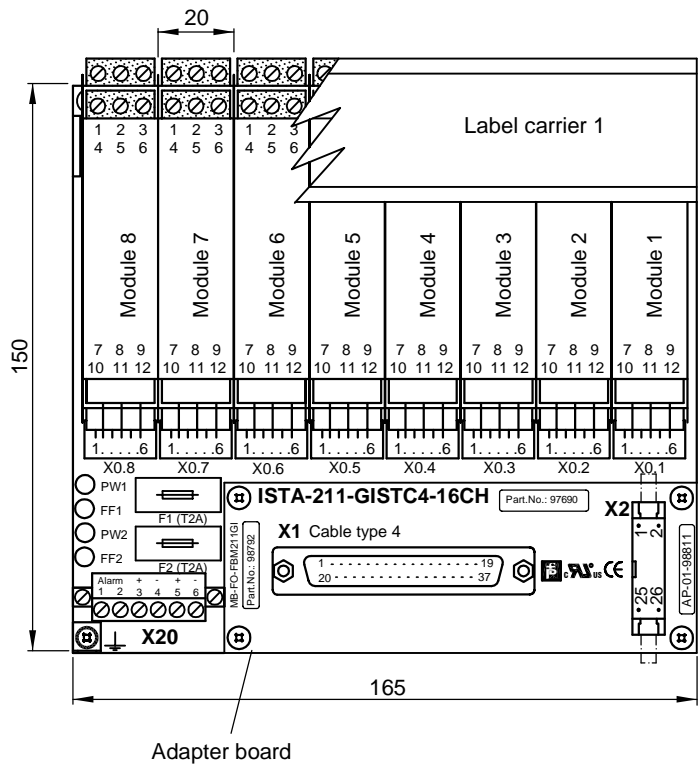
A to D converter
with differential
amplifier input

LB/SC and Power Control Unit

Motherboard	Signal	Module	HART communication *1)	Option
ISTA-211-GISTC4-16CH-97690	AI, current	KFD2-STC4-Ex2	yes	

11.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6181 2			
Up date: 21.04.04	vB/Bro	Replaces: xxxxxxx / 36-xxxx	Sheet 1 of 1	
	Scale:	1 : 5		


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Name	Note
X1	37 pin male system connector D-SUB
X2	26 pin male HART connector
----	----
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: ISTA-211-GISTC4-16CH-97690		
Basic components:	Description	
8 pieces:	KFD2-STC4-Ex2 (AI)	KF-Module type (function)
1 piece:	MB-FO-FBM211GI-98792	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-01-98811	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
8 pieces:	FSY-K123L456-99154	Cable tree connection KF-Module-Motherboard

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	Motherboard unit Analog Input - HART 16 channels ISTA-211-GISTC4-16CH	03.11.99	vB	vB	vB
		Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7108		
		vB/Bro Up date: 21.04.04	Replaces: xxxxx / 36-xxxx		Sheet 1
		MB-8U2	Scale:	1 : 2	of 2

Field	Module	FSY-	X0.	Y1	X2	X1	Ch.	Module and cable types
	1	7- 8+ 9+	4 5 6	1 2 3	6	36 18 35 17	1- 1+ 2- 2+	AI Module type: KFD2-STC4-Ex2 FSY- Cable type: FSY-K123L456-99154 KF-Module terminal no.:
	2		4 5 6	1 2 3	28 29 30	34 16 33 15	3- 3+ 4- 4+	
	3		4 5 6	1 2 3	7 8 9 31 32 33	32 14 31 13	5- 5+ 6- 6+	
	4		4 5 6	1 2 3	10 11 12 34 35 36	30 12 29 11	7- 7+ 8- 8+	
	5		4 5 6	1 2 3	13 14 15 37 38 39	28 10 27 9	9- 9+ 10- 10+	
	6		4 5 6	1 2 3	16 17 18 40 41 42	26 8 25 7	11- 11+ 12- 12+	
	7		4 5 6	1 2 3	19 20 21 43 44 45	24 6 23 5	13- 13+ 14- 14+	<u>Loop for two channels</u>
	8		4 5 6	1 2 3	22 23 24 46 47 48	22 4 23 3	15- 15+ 16- 16+	
(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2		49 ... 51 52 ... 54 55 56 57 58 59 60	1 ... 5 14, 15 24 ... 26	o2 n.c. o19 +24V (FBM) o20 n.c. o37 0V (FBM)	o1 Shield o Shell	common for 16 channels 		

	Motherboard unit Analog Input - HART 16 channels ISTA-211-GISTC4-16CH		28.10.99	Sb	vB	Sb/vB	
	Date	S TZ	Off. in ch.	contr. techn.	contr. Norm		
	Dept.: PA-VP	Nr. 36-7108		Replaces: xxxxxx / 36-xxxx	Sheet 2		
Up date: 21.04.04	Scale:				of 2		

Notes:

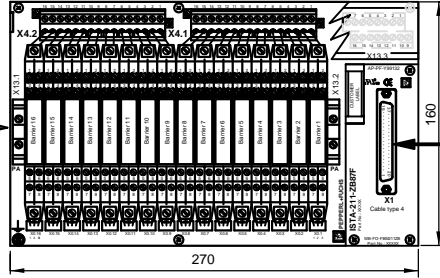
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



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



Cable type 4

FBM211

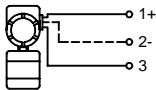
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

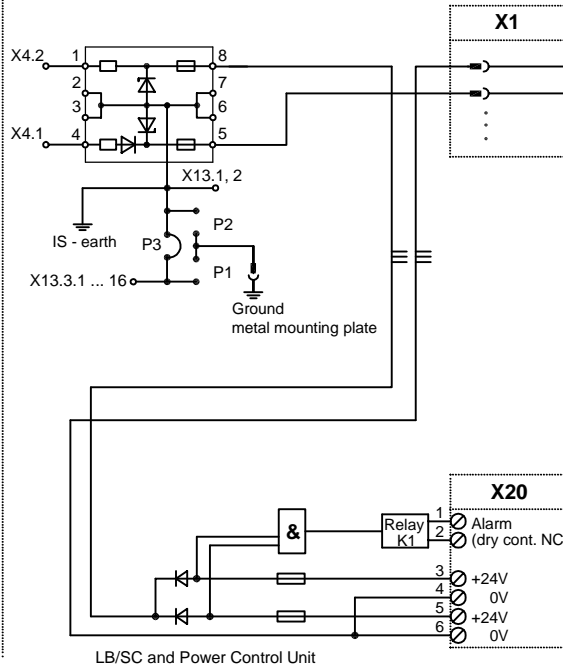
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

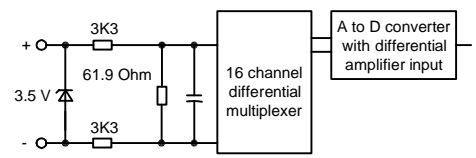


Transformer isolated barrier:

ZF... (Zener barrier see table)



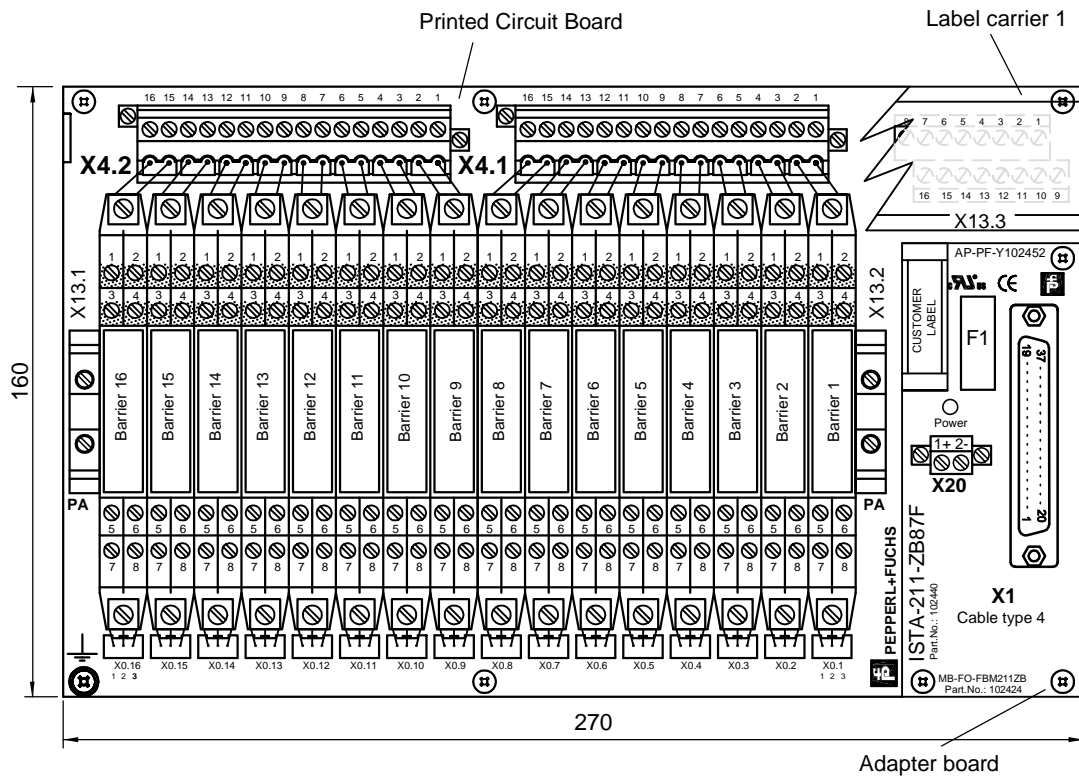
Simplified Input circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-211-ZB87F-102440	AI, current	ZF787.F	---	

01.04.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm.
Dept.: PA - VP	No. 36-6208			
vB/Bro	Replaces:			
Up date: 21.04.04	xxxxxx / 36-xxxx		Sheet 1	
Scale: 1 : 5		of 1		

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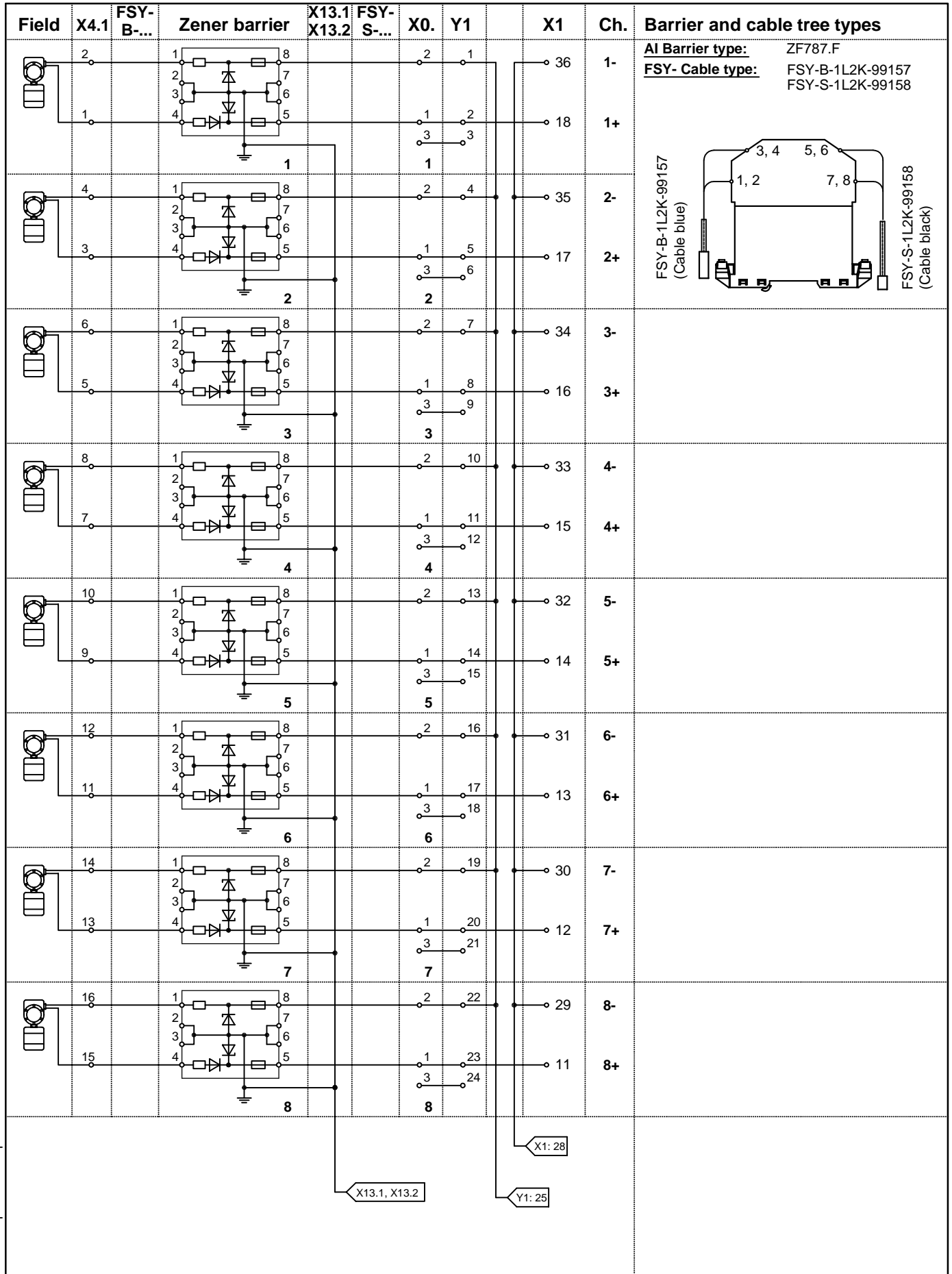


Name	Note
X1	37 pin male system connector D-SUB
----	----
X4.1, X4.2	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 16	16 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 16	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information:		ISTA-211-ZB87F-102440
Basic components:		Description
16 pieces:	ZF787.F (AI)	Zener Barrier (function)
1 piece:	MB-FO-FBM211ZB-102424	Motherboard without Zener barriers
composed by:		
1 piece:	MB-UZ16-Y99129	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece:	AP-PF-Y102452	Adapter board
1 piece:	KFD0-LC1-16Z-99133	Label carrier 1
16 pieces:	FSY-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
16 pieces:	FSY-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

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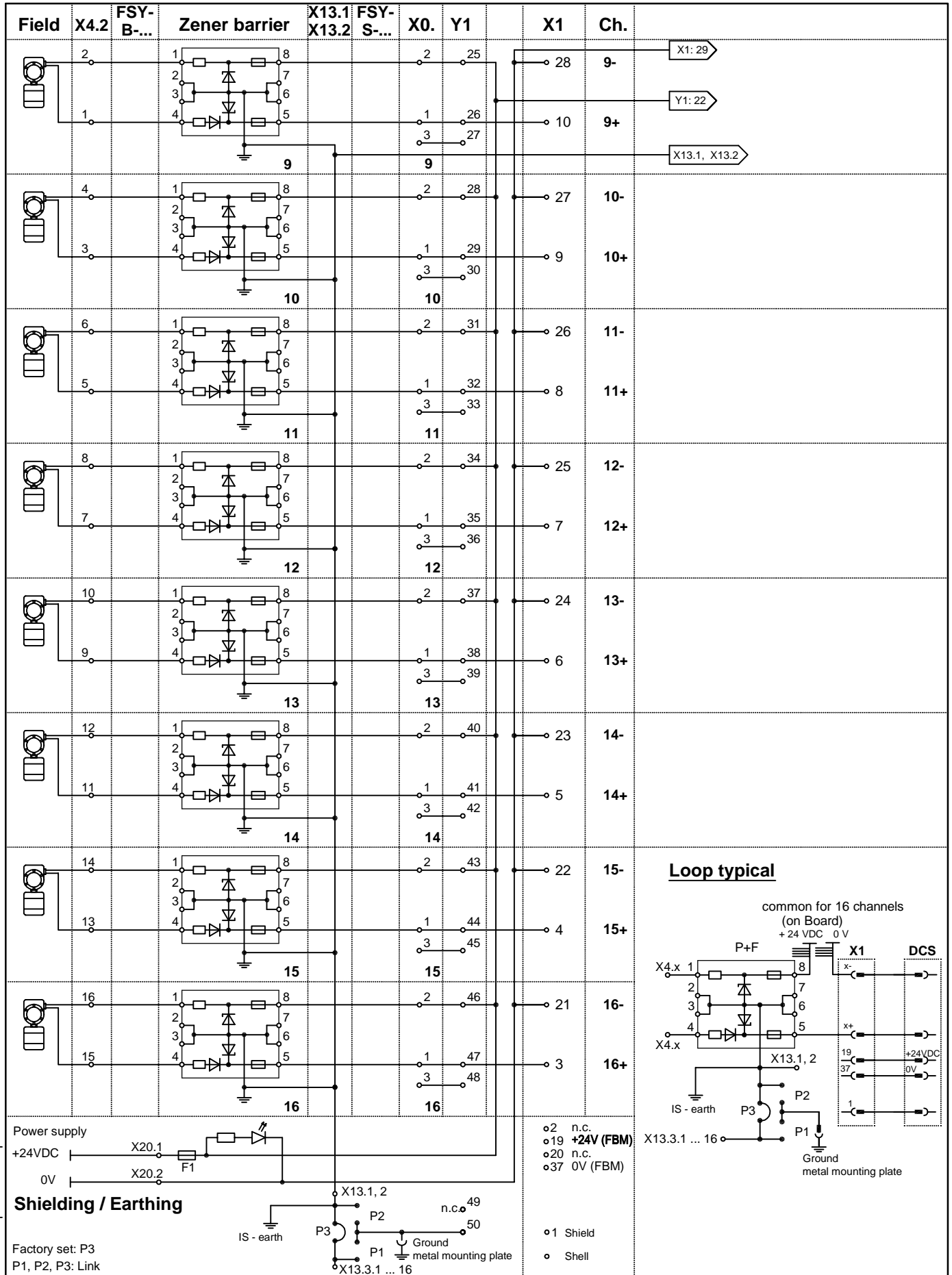
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Input 16 channels ISTA-211-ZB87F	14.02.00	KT	SB	SB/vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	Nr. 36-7207			
			Up date: vB/Bro 26.04.04	Replaces: xxxxx / 36-xxxx			Sheet 1
			MB-UZ16	Scale:	1 : 2	of	3



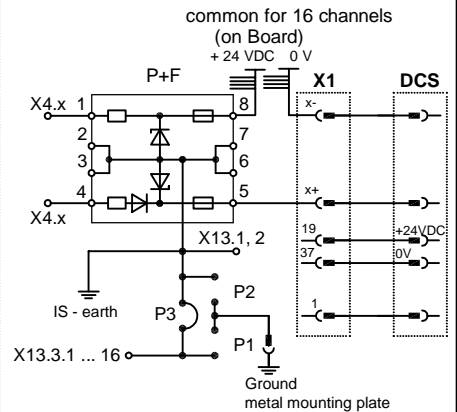
14.02.00		KT	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7207				
Update: vB/Bro 26.05.04	Replaces: xxxxx / 36-xxxx				Sheet 2
MB-UZ16	Scale:				of 3

PEPPERL+FUCHS
 Mannheim-Schönau

Motherboard unit
 Analog Input
 16 channels
ISTA-211-ZB87F



Loop typical



14.02.00		KT	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7207		
Update: 26.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 3		
MB-UZ16	Scale:		of 3		

6. FBM215 / FBM218 / FBM237 Application

(8 channels AO current 0 ... 20 mA)

	Page
Motherboard ISTA-215/218/237-GISCD-8CH	6- 1
Part No.:	190071
Function:	Analog Output + HART
Channels:	8
System cable:	Cable type 1
KF- Module (single channel):	KFD2-SCD-Ex1.LK
Simplified schematic:	drawing no. 36-6185_1
Wiring Diagram:	drawing no. 36-7720
Motherboard ISTA-215-217-237-GICD-8CH	6- 4
Part No.:	188699
Function:	Analog Output
Channels:	32
System cable:	Cable type 1
KF- Module (single channel):	KFD2-CD-Ex1.32
Simplified schematic:	drawing no. 36-6185_1
Wiring Diagram:	drawing no. 36-7718
Motherboard ISTA-215/218/237-GICS-8CH	6- 7
Part No.:	190068
Function:	Analog Output
Channels:	8
System cable:	Cable type 1
KF- Module (dual channel):	KFD0-CS-Ex2.51
Simplified schematic:	drawing no. 36-6185_2
Wiring Diagram:	drawing no. 36-7719
Motherboard ISTA-215/218237-ZB87F	6- 11
Part No.:	199099
Function:	Analog Output
Channels:	8
System cable:	Cable type 1
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6210
Wiring Diagram:	drawing no. 36-7734

Notes:

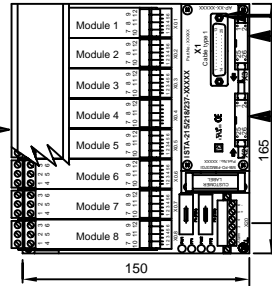
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Converter, positioner
(4 ... 20 mA)



Cable type 1

FBM215
FBM218
FBM237

Cable type K-HM26 *1)

HART-Multiplexer

Cable type K-HM26 from second motherboard (X3)

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

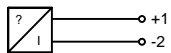
*1) see table

LOOP-DIAGRAM (single channel modules)

Hazardous area (Zone 1)
Field device

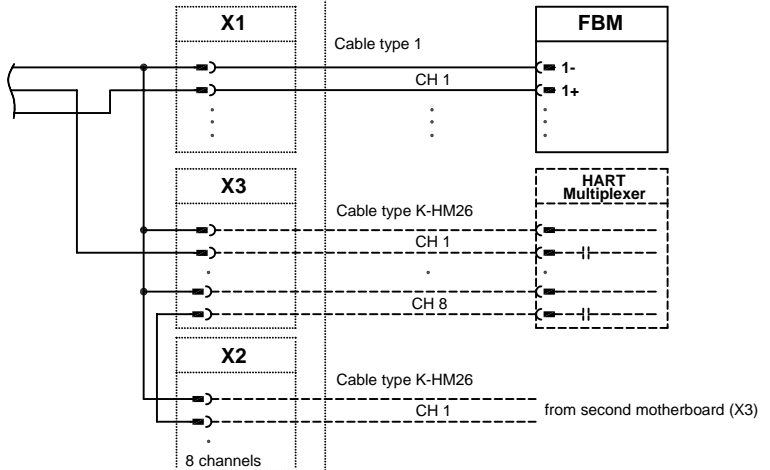
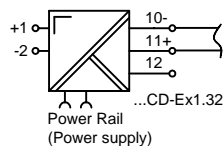
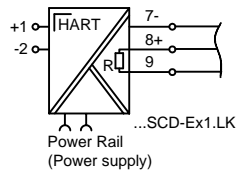
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

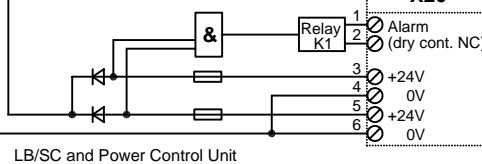
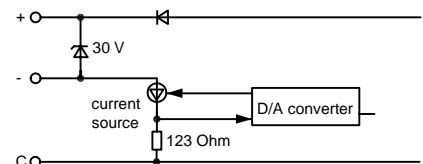


Transformer isolated barrier:

KFD2-... (Module see table)



Simplified Output circuit FBM:

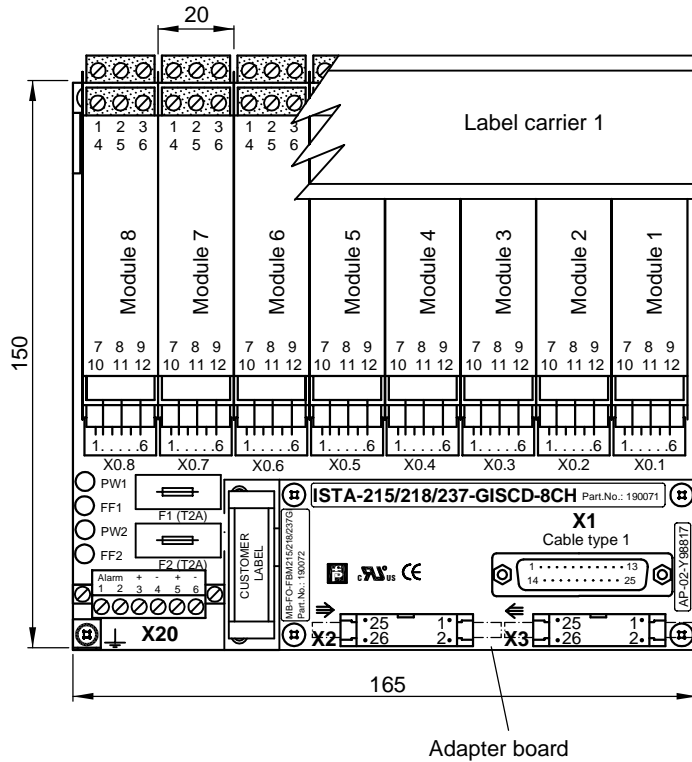


LB/SC and Power Control Unit

Motherboard	Signal	Module	HART communication *1)	Option
ISTA-215/218/237-GISCD-8CH-190071	AO, current	KFD2-SCD-Ex1.LK	yes	
ISTA-215/218/237-GICD-8CH-188699	AO, current	KFD2-CD-Ex1.32	no	

10.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6185A1			
Up date: 04.09.06	Doe/Bro	Replaces: xxxxxx / 36-xxxx	Sheet 1	
	Scale: 1 : 5	of 1		


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Name	Note
X1	25 pin male system connector D-SUB
X2, X3	26 pin male HART connector
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: ISTA-215/218/237-GISCD-8CH-190071		
Basic components:	Description	
8 pieces:	KFD2-SCD-Ex1.LK (AO)	KF-Module type (function)
1 piece:	MB-FO-FBM215/218/237GI-190072	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-02-Y98817	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
8 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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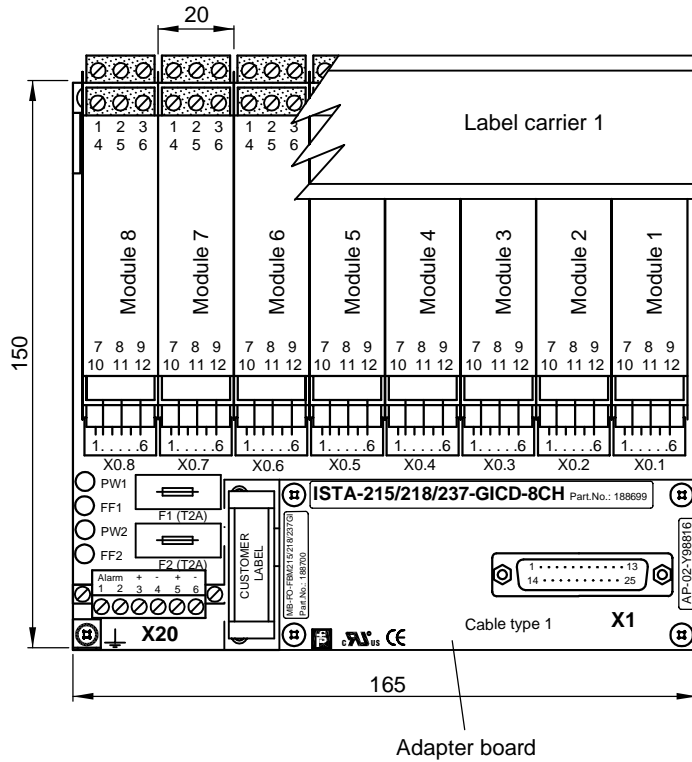
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Output - HART 8 channels ISTA-215/218/237-GISCD-8CH	19.12.05	Bro	vB/Hi	Hi/vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. 36-7720A				
		vB/Bro	Replaces:		Sheet 1		
		Up date: 10.01.06	97697/97699 / 36-7113		of 2		
		MB-8U2	Scale: 1 : 2				

Field	Module	FSY-	X0.	Y1	X3	X2	X1	Ch.	Module and cable types
		7- 8+ 9+	4 5 6	1 2 3	6		13 12	1- 1+	AO Module type: KFD2-SCD-Ex1.LK FSY- Cable type: FSY-L456-98837
	1		1 2 3	25 26 27					KF-Module terminal no.: 9 8 7
	2		4 5 6	28 29 30	7		24 23	2- 2+	
	3		4 5 6	31 32 33	8		10 9	3- 3+	
	4		4 5 6	34 35 36	9		21 20	4- 4+	
	5		4 5 6	37 38 39	10		7 6	5- 5+	
	6		4 5 6	40 41 42	11		18 17	6- 6+	
	7		4 5 6	43 44 45	12		4 3	7- 7+	Loop for channel 1
	8		4 5 6	46 47 48	13		15 14	8- 8+	
			49...51 52...54	1...5 14, 15 24...26	1...5 14, 15 24...26				Channels distribution: 8 channels extern 8 channels on board
			(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2	55 56 57 58 59 60	16...18 19...21 22...23	6 7 8 9 10 11 12 13			<ul style="list-style-type: none">o 2 n.c.o 5 n.c.o 8 n.c.o 11 n.c.o 16 n.c.o 19 n.c.o 22 n.c.o 25 n.c.o 1 Shieldo Shell

19.12.05		Bro	vB/Hi	Hi/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.:	PA-VP		Nr. 36-7720A		
Up date:	vB/Bro 10.01.06		Replaces: 97697/97699 / 36-7113		Sheet 2
MB-8U2	Scale:		of 2		

PEPPERL+FUCHS
Mannheim-Schönau


Motherboard unit
Analog Output - HART
8 channels
ISTA-215/218/237-GISCD-8CH



Name	Note
X1	25 pin male system connector D-SUB
---	---
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: ISTA-215/218/237-GICD-8CH-188699	
Basic components:	Description
8 pieces: KFD2-CD-Ex1.32 (AO)	KF-Module type (function)
1 piece: MB-FO-FBM215/218/237GI-188700	Motherboard without modules
composed by:	
1 piece: MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-02-Y98816	Adapter board
1 piece: KFD0-LC1-8M-99143	Label carrier 1
8 pieces: FSY-K450-Y98845	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Output 8 channels ISTA-215/218/237-GICD-8CH	25.11.05	Bro	vB/Hi	Hi/vB
			Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7718B			
		Up date: 21.09.06	vB	Replaces: 97696/98791 / 36-7115	Sheet 1	
		MB-8U2	Scale:	1 : 2	of 2	

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
			4 5 6	1 2 3	13 12 25	1- 1+ 1C	AO Module type: KFD2-CD-Ex1.32 FSY- Cable type: FSY-K450-98845 KF-Module terminal no.: 12 11 10
	1		4 5 6	1 2 3	24 23 11	2- 2+ 2C	
	2		4 5 6	1 2 3	10 9 22	3- 3+ 3C	
	3		4 5 6	1 2 3	21 20 8	4- 4+ 4C	
	4		4 5 6	1 2 3	7 6 19	5- 5+ 5C	
	5		4 5 6	1 2 3	18 17 5	6- 6+ 6C	
	6		4 5 6	1 2 3	4 3 16	7- 7+ 7C	
	7		4 5 6	1 2 3	15 14 2	8- 8+ 8C	
	8		49... 51 52... 54 55 56 57 58 59 60				(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2 o1 Shield o Shell Loop for channel 1

	Motherboard unit		25.11.05	Bro	vB/Hi	Hi/vB
	Analog Output		Date	S TZ	Off. in ch.	contr. techn.
	8 channels		Dept.: PA-VP	Nr. 36-7718B		
	ISTA-215/218/237-GICD-8CH		Up date: 21.09.06	Replaces: 97696/98791 / 36-7115		Sheet 2
		MB-8U2	Scale:		of 2	

Notes:

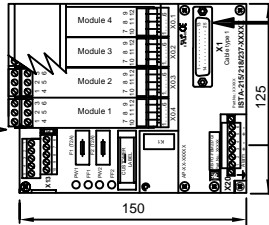
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Converter, positioner
(4 ... 20 mA)



Cable type 1

FBM215
FBM218
FBM237

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

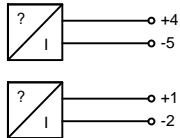
*1) see table

LOOP-DIAGRAM (dual channel modules)

Hazardous area (Zone 1)
Field device

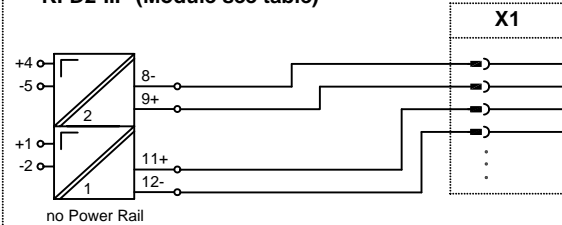
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

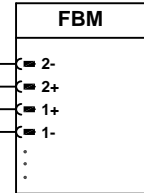


Transformer isolated barrier:

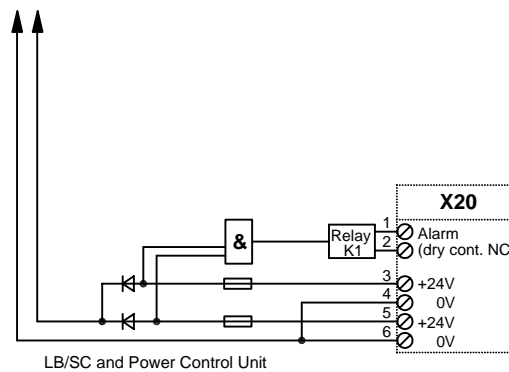
KFD2-... (Module see table)



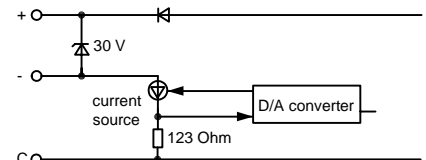
Cable type 1



no Power Rail

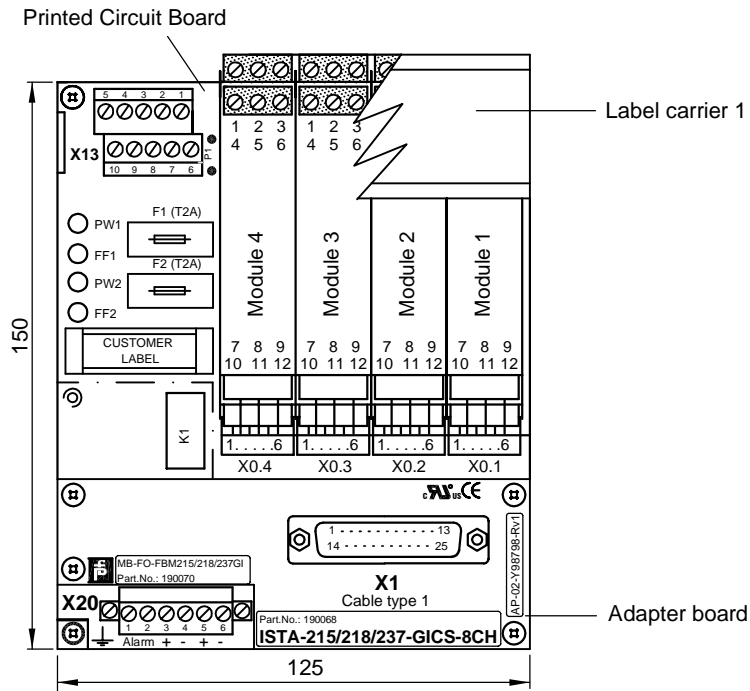


Simplified Output circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-215/218/237-GICS-8CH-190068	AI, current	KFD0-CS-Ex2.51	no	

12.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6185A2			
Up date: 04.09.06	Doe/Bro	Replaces: xxxxxx / 36-xxxx	Sheet 1 of 1	
	Scale: 1 : 5			




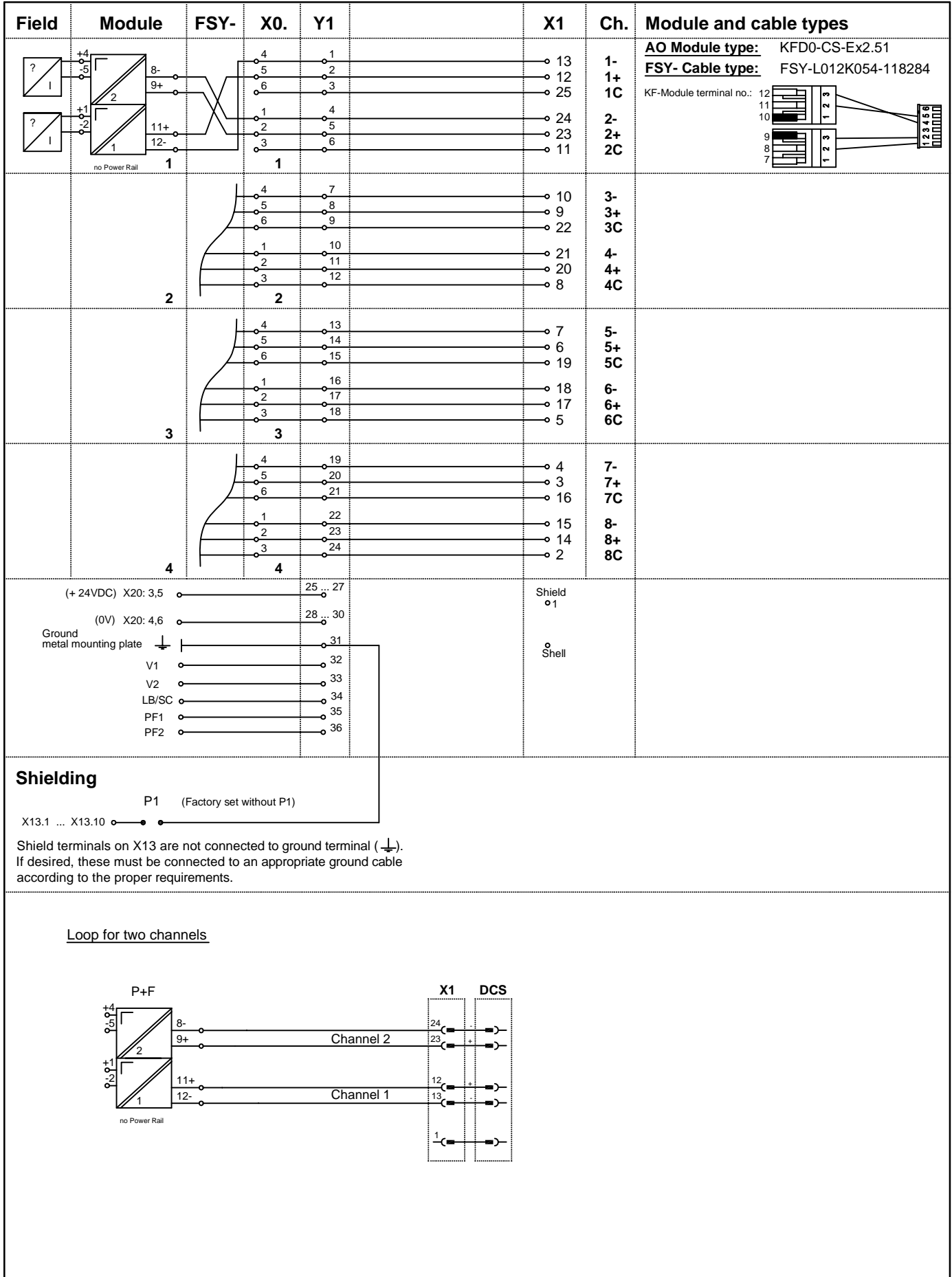
Name	Note
X1	25 pin male system connector D-SUB
---	---
X13	10 pin shilding block terminal for IS cables
X0.1 4	6 pin male terminals for cable tree FSY....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: ISTA-215/218/237-GICS-8CH-190068		
Basic components:	Description	
4 pieces:	KFD0-CS-Ex2.51(*) (AO)	KF-Module type (function)
1 piece:	MB-FO-FBM215/218/237GI-190070	Motherboard without modules
composed by:		
1 piece:	MB-4U1-98838	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-02-Y98798-Rv1	Adapter board
1 piece:	KFD0-LC1-4M-99110	Label carrier 1
4 pieces:	FSY-L012K054-118284	Cable tree connection KF-Module-Motherboard

(*)For this module no power supply on X20

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Output 8 channels ISTA-215/218/237-GICS-8CH	25.11.05	Bro	vB/Hi	Hi/vB	
			Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP	Nr. 36-7719			
			Up date: xx.xx.xx	Replaces: 97698/98797 / 36-7118			Sheet 1
			MB-4U1	Scale:	1 : 2	of 2	



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	Motherboard unit Analog Output 8 channels ISTA-215/218/237-GICS-8CH		25.11.05 Date	S TZ Bro	vB/Hi Off. in ch.	Hi/vB contr. techn.	contr. Norm
	Dept.: PA-VP		Nr. 36-7719		Replaces: 97698/98797 / 36-7118		Sheet 2
	Up date: xx.xx.xx		Scale:		of 2		
	MB-4U1						

Notes:

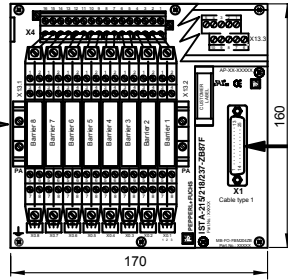
Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Converter, positioner
(4 ... 20 mA)



Cable type 1

**FBM215
FBM218
FBN237**

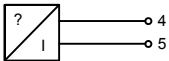
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

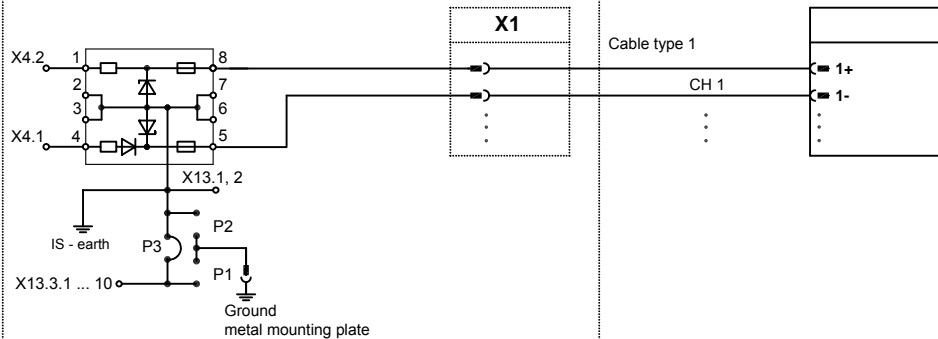
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

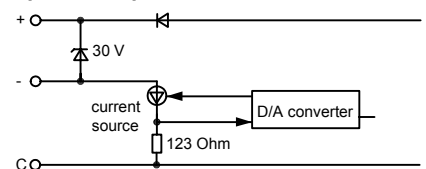


Transformer isolated barrier:

ZF... (Zener barrier see table)



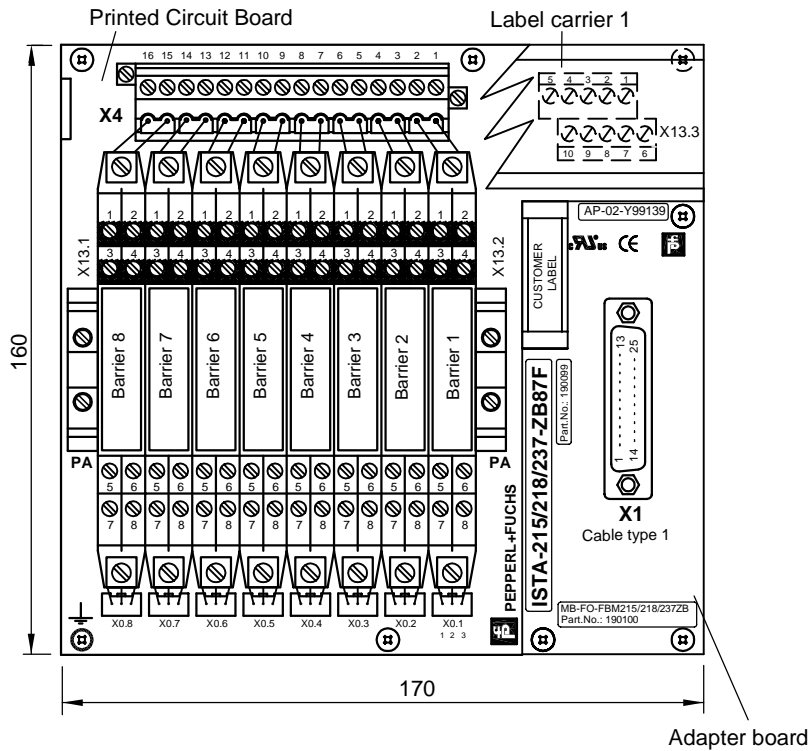
Simplified Output circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-215/218/237-ZB87F-199099	AO, current	ZF787.F	---	

02.04.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6210B			
Up date: 11.05.07	vB	Replaces: xxxxxx / 36-xxxx	Sheet 1	
		Scale: 1 : 5	of 1	


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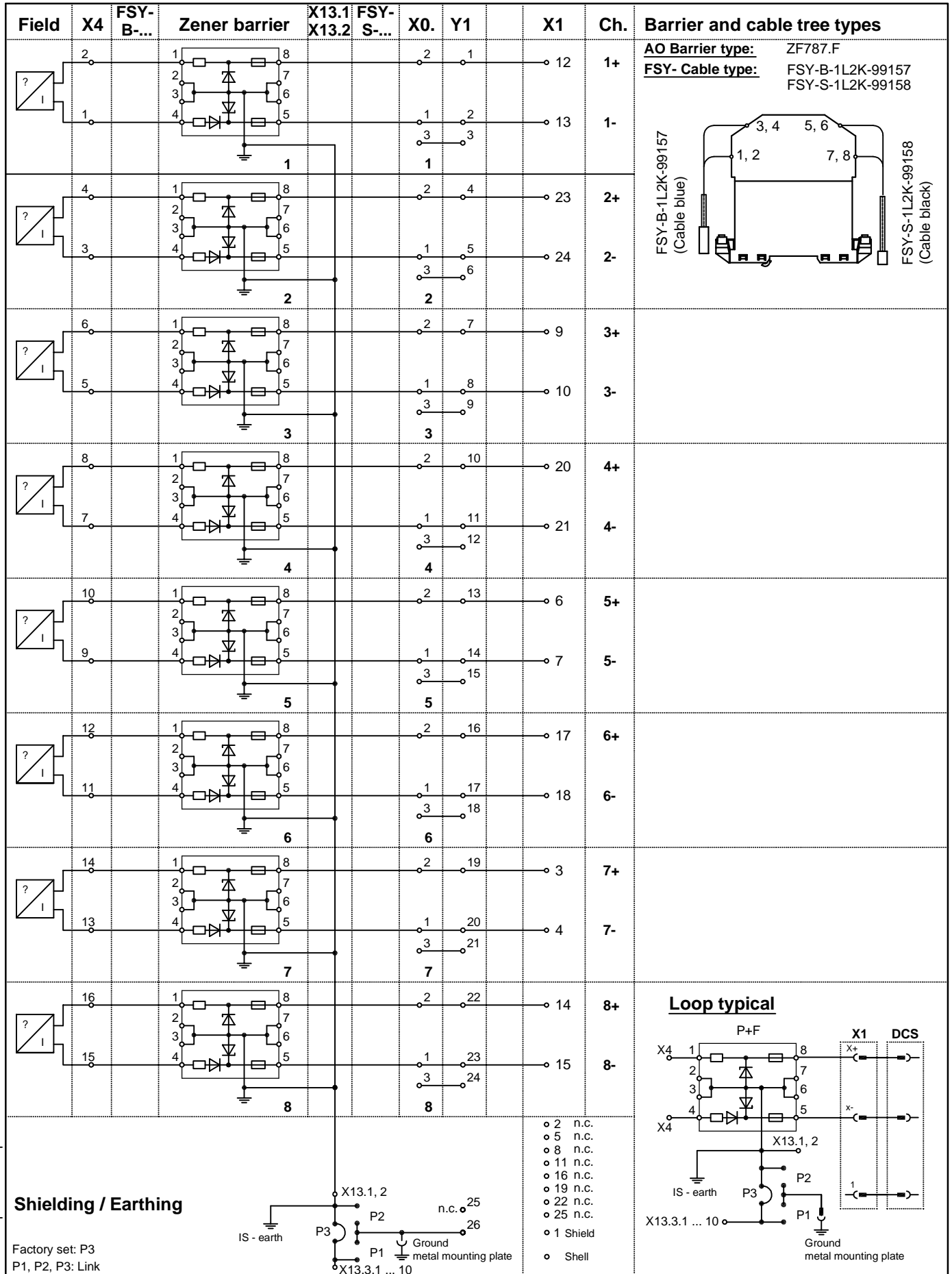


Name	Note
X1	25 pin male system connector D-SUB
----	----
X4	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 10	10 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 8	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information: ISTA-215/218/237-ZB87F-190099	
Basic components:	Description
8 pieces: ZF787.F (AO)	Zener Barrier (function)
1 piece: MB-FO-FBM215/218/237ZB-190100	Motherboard without Zener barriers
composed by:	
1 piece: MB-UZ8-Y99128	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece: AP-02-Y99139	Adapter board
1 piece: KFD0-LC1-8Z-99125	Label carrier 1
8 pieces: FSU-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
8 pieces: FSU-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

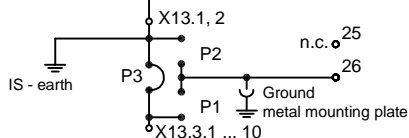
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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Analog Output 8 channels ISTA-215/218/237-ZB87F	11.01.06	Bro	vB/Hi	Hi/vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. 36-7734			
		Up date: xx.xx.xx	Replaces: 99137/99138 / 36-7136		Sheet 1	
		MB-UZ8	Scale:	1 : 2	of	2



Shielding / Earthing

Factory set: P3
 P1, P2, P3: Link



- o 2 n.c.
- o 5 n.c.
- o 8 n.c.
- o 11 n.c.
- o 16 n.c.
- o 19 n.c.
- o 22 n.c.
- o 25 n.c.
- o 1 Shield
- o Shell

11.01.06	Bro	vB/Hi	Hi/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7734			
Update: xx.xx.xx	Replaces: 99137/99138 / 36-7136		Sheet 2	
MB-UZ8	Scale:		of 2	



Motherboard unit
 Analog Output
 8 channels
ISTA-215/218/237-ZB87F

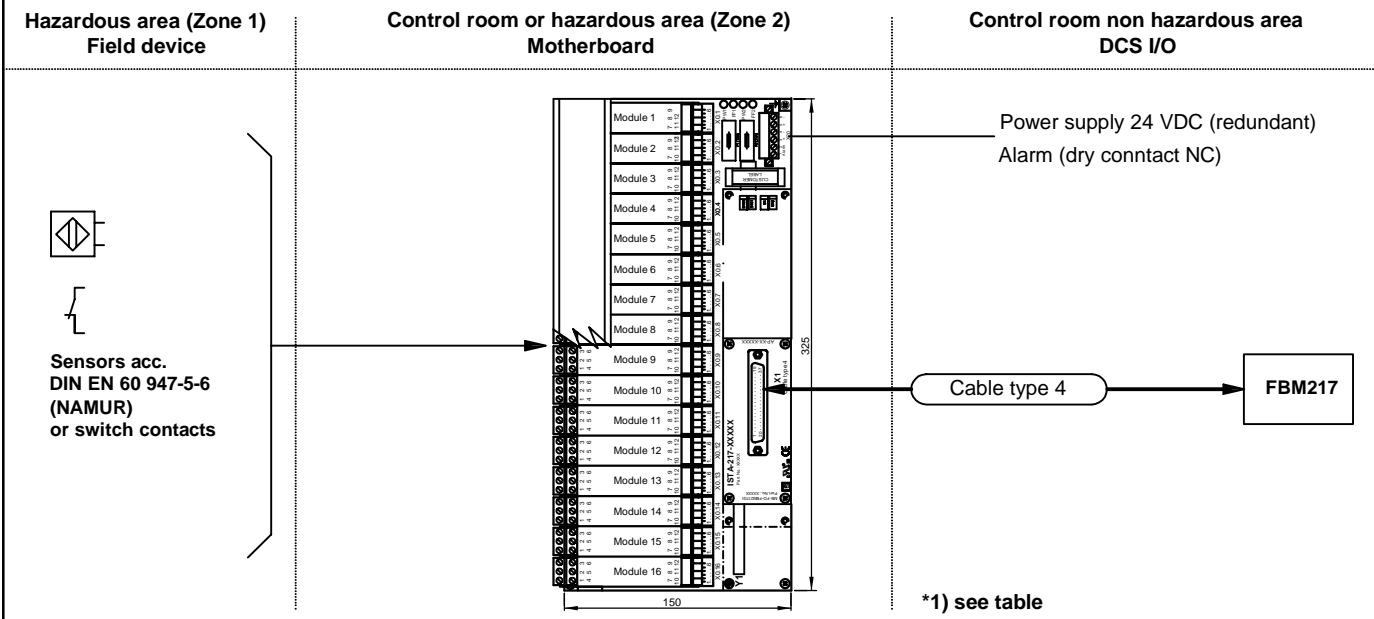
Notes:

6. FBM217 Application

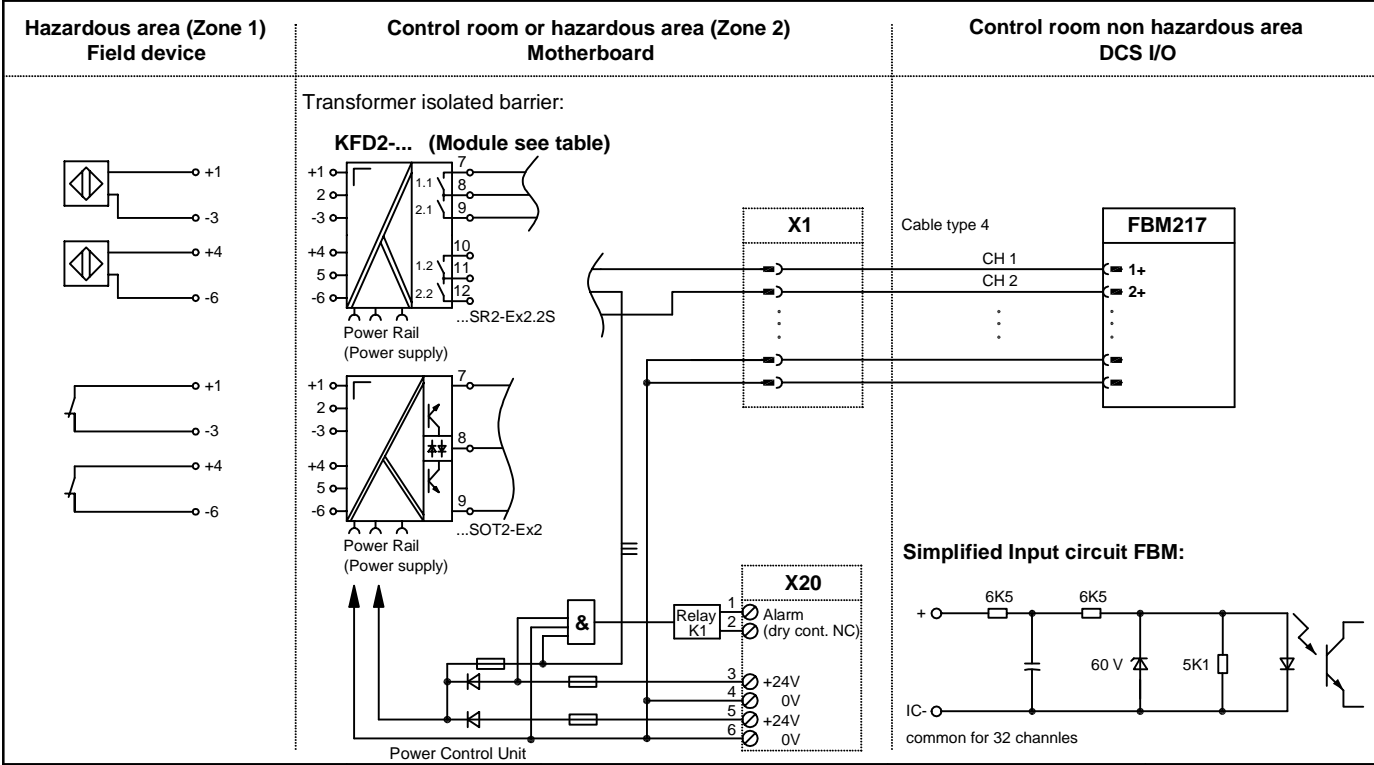
(32 channels DI)

	Page
Motherboard ISTA-217-GISR2-32CH	6- 1
Part No.:	97693
Function:	Digital Input
Channels:	32
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SR2-Ex2.2S
Simplified schematic:	drawing no. 36-6184B
Wiring Diagram:	drawing no. 36-7105A
Motherboard ISTA-217-GISOT2-32CH	6- 5
Part No.:	97695
Function:	Digital Input
Channels:	32
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SOT2-Ex2
Simplified schematic:	drawing no. 36-6184B
Wiring Diagram:	drawing no. 36-7109
Motherboard ISTA-217-ZB87F	6- 9
Part No.:	102443
Function:	Digital Input
Channels:	32
System cable:	Cable type 4
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6209B
Wiring Diagram:	drawing no. 36-7209

Notes:



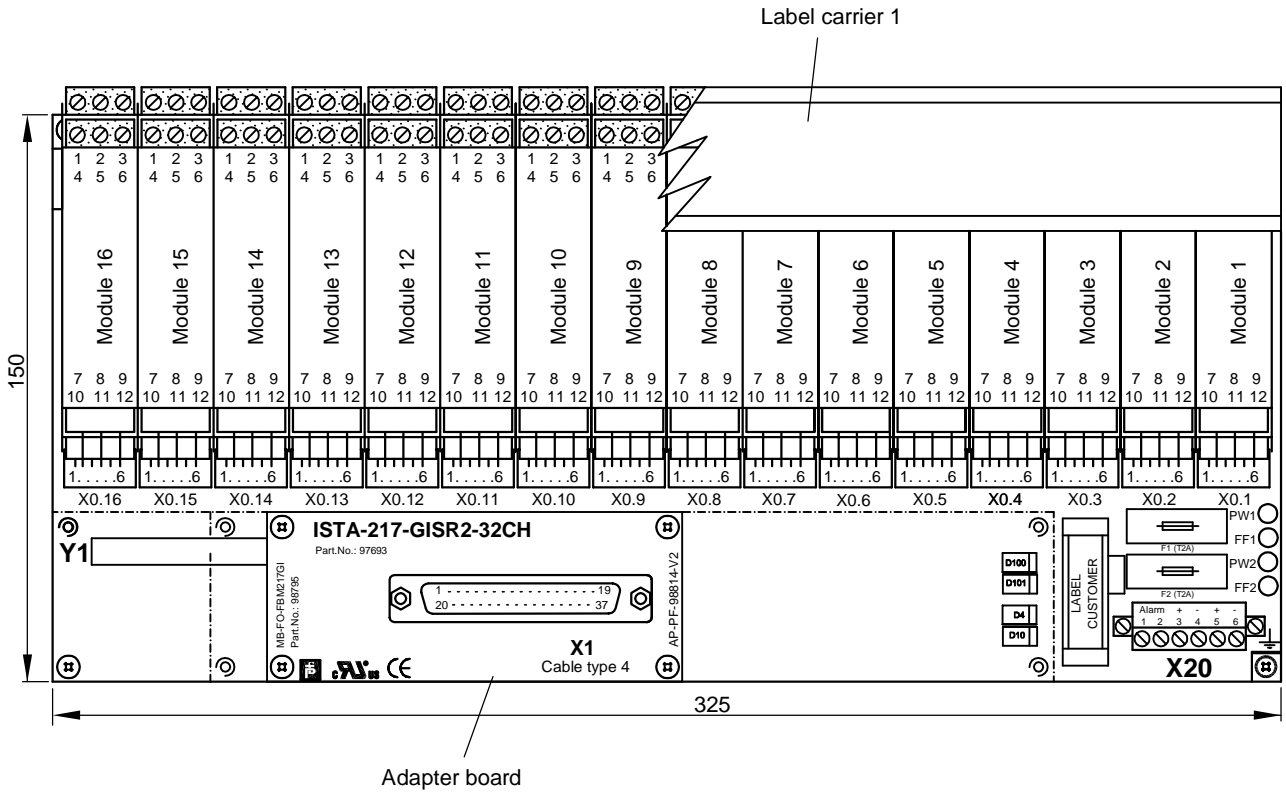
LOOP-DIAGRAM (dual channel modules)



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-217-GISR2-32CH-97693	DI	KFD2-SR2-Ex2.2S	---	
ISTA-217-GISOT2-32CH-97695	DI	KFD2-SOT2-Ex2	---	

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


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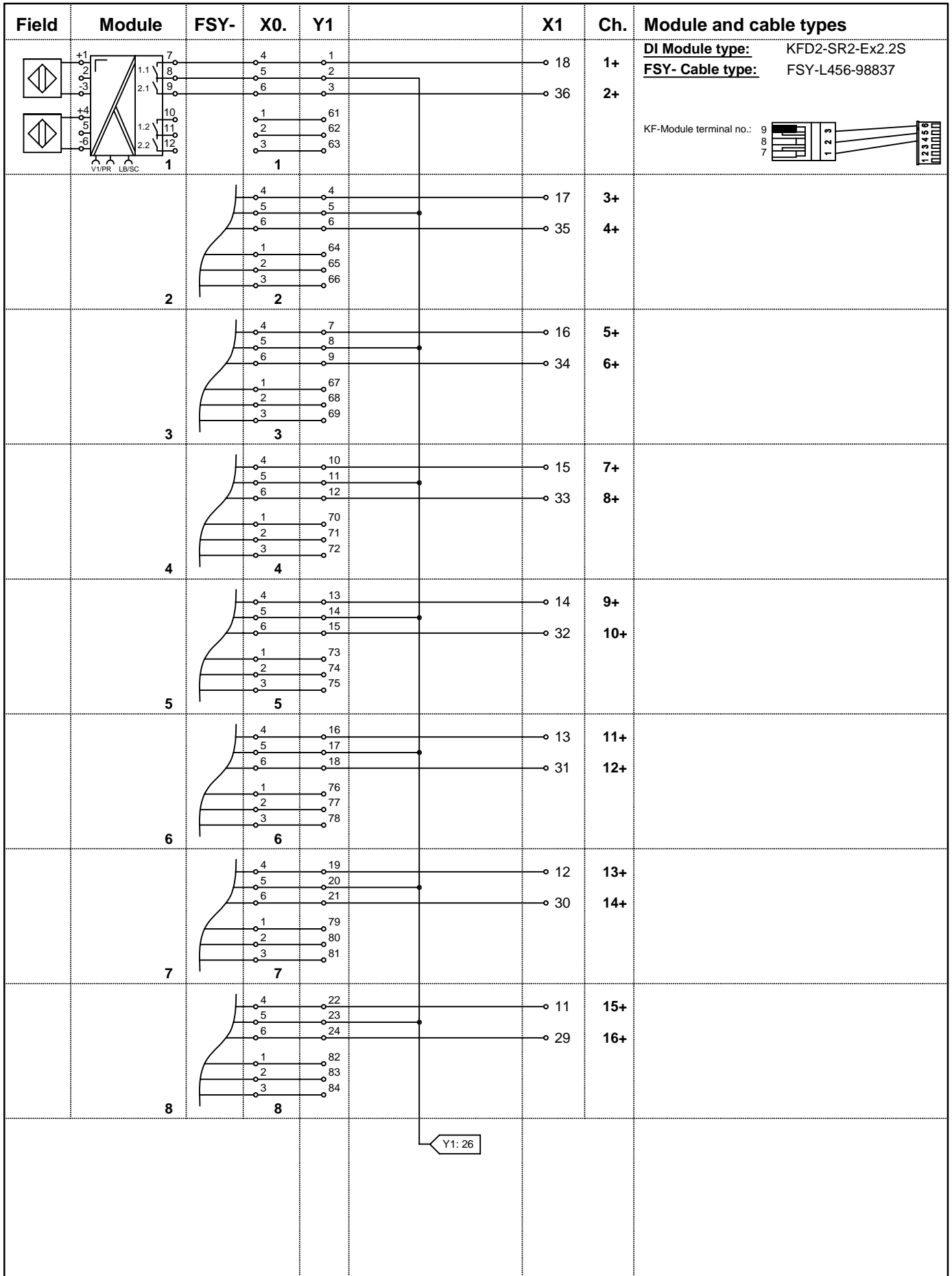


Name	Note
X1	37 pin male system connector D-SUB
---	---
X0.1 16	6 pin male terminals for cable tree FSU....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

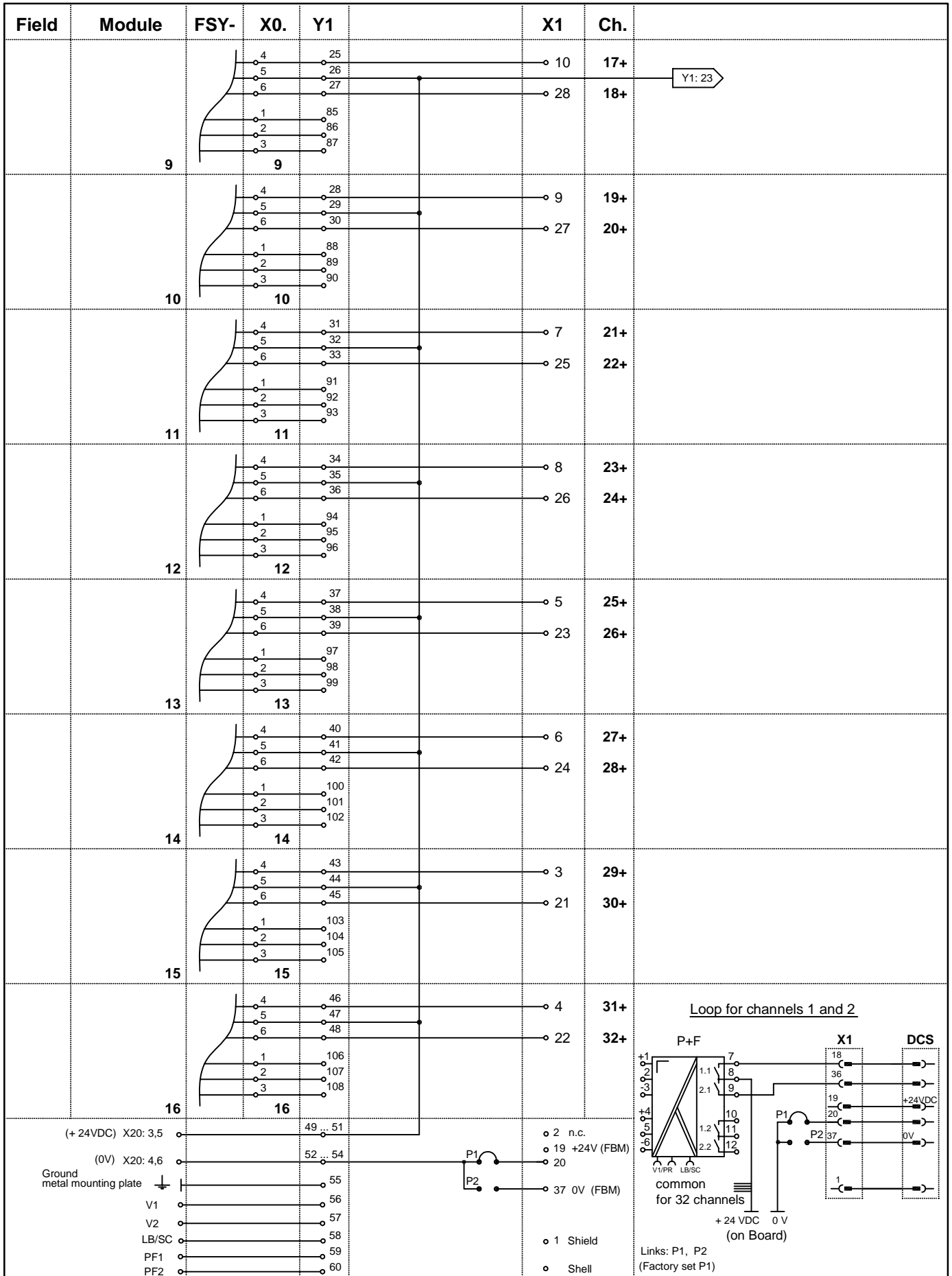
Ordering information: ISTA-217-GISR2-32CH-97693		
Basic components:	Description	
16 pieces:	KFD2-SR2-Ex2.2S (DI)	KF-Module type (function)
1 piece:	MB-FO-FBM217GI-98795	Motherboard without modules
composed by:		
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSU cable tree and Label carrier
1 piece:	AP-PF-98814-V2	Adapter board
1 piece:	KFD0-LC1-16M-99144	Label carrier 1
16 pieces:	FSU-L456-Y98837	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input 32 channels ISTA-217-GISR2-32CH	03.11.99	vB	vB	vB			
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm	
			Dept.:	PA-VP		Nr. 36-7105B			
			Up date:	11.04.06		Replaces: vB/Bro xxxxxx / 36-xxxx	Sheet 1		
		MB-16U5L	Scale:	1 : 2		of 3			



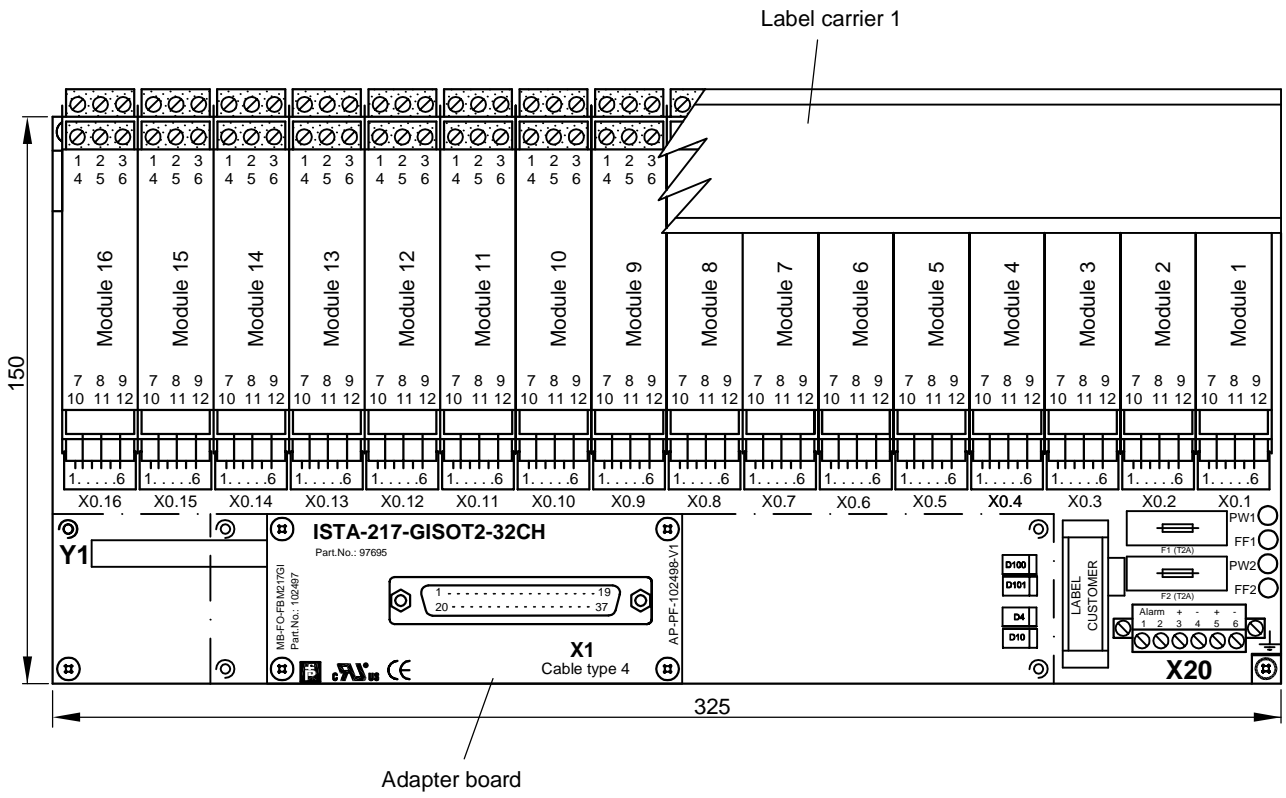
	PEPPERL+FUCHS Mannheim-Schönau		Motherboard unit Digital Input 32 channels ISTA-217-GISR2-32CH			20.09.99		vB	vB	Sb/vB	
						Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
						Dept.:	PA-VP		Nr. 36-7105B		
						Up date:	11.04.06		Replaces:	xxxxx / 36-xxxx	
MB-16U5L		Scale:		Sheet 2 of 3							



20.09.99	vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. Norm
Dept.: PA-VP	Nr. 36-7105B			
Up date: 11.04.06	Replaces: vB/Bro xxxxx / 36-xxxx		Sheet 3	
MB-16U5L	Scale:		of 3	

PEPPERL+FUCHS
Mannheim-Schönau


Motherboard unit
Digital Input
32 channels
ISTA-217-GISR2-32CH

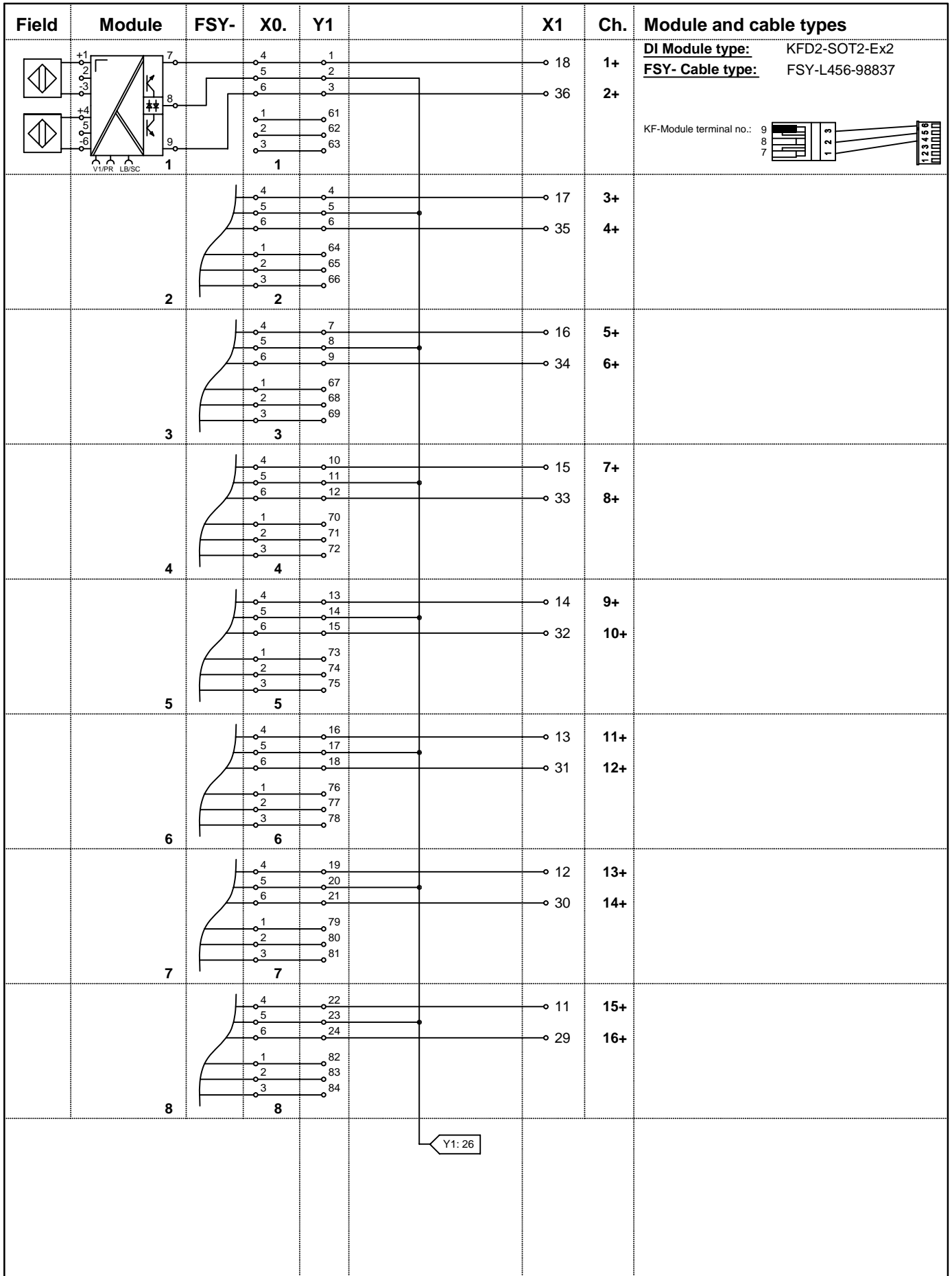


Name	Note
X1	37 pin male system connector D-SUB
---	---
X0.1 16	6 pin male terminals for cable tree FSY....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: ISTA-217-GISOT2-32CH-97695		
Basic components:	Description	
16 pieces:	KFD2-SOT2-Ex2 (DI)	KF-Module type (function)
1 piece:	MB-FO-FBM217GI-102497	Motherboard without modules
composed by:		
1 piece:	MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-102498-V1	Adapter board
1 piece:	KFD0-LC1-16M-99144	Label carrier 1
16 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input 32 channels ISTA-217-GISOT2-32CH	03.11.99	vB	vB	vB	
			Date	S	TZ	Off. in ch.	contr. techn.
			Dept.: PA-VP	Nr. 36-7109A			
			Up date: vB 11.04.06	Replaces: xxxxxxx / 36-xxxx			Sheet 1
			MB-16U5L	Scale: 1 : 2			of 3



03.11.99	vB	vB	vB	
Date	S	TZ	Off. in ch.	contr. techn.
Dep.: PA-VP	Nr. 36-7109A			
Up date: vB 11.04.06	Replaces: xxxxxx / 36-xxxx			Sheet 2
MB-16U5L	Scale: 1 : 2			of 3

PEPPERL+FUCHS
 Mannheim-Schönau

Motherboard unit
 Digital Input
 32 channels
ISTA-217-GISOT2-32CH

Field	Module	FSY-	X0.	Y1	X1	Ch.
		Y1: 23				
	9		4, 5, 6, 1, 2, 3	25, 26, 27, 85, 86, 87	10, 28	17+, 18+
	10		4, 5, 6, 1, 2, 3	28, 29, 30, 88, 89, 90	9, 27	19+, 20+
	11		4, 5, 6, 1, 2, 3	31, 32, 33, 91, 92, 93	7, 25	21+, 22+
	12		4, 5, 6, 1, 2, 3	34, 35, 36, 94, 95, 96	8, 26	23+, 24+
	13		4, 5, 6, 1, 2, 3	37, 38, 39, 97, 98, 99	5, 23	25+, 26+
	14		4, 5, 6, 1, 2, 3	40, 41, 42, 100, 101, 102	6, 24	27+, 28+
	15		4, 5, 6, 1, 2, 3	43, 44, 45, 103, 104, 105	3, 21	29+, 30+
	16		4, 5, 6, 1, 2, 3	46, 47, 48, 106, 107, 108	4, 22	31+, 32+
			(+ 24VDC) X20: 3,5	49 ... 51	2 n.c.	
			(0V) X20: 4,6	52 ... 54	19 +24V (FBM)	
			Ground metal mounting plate		20	
			V1	55	37 0V (FBM)	
			V2	56		
			LB/SC	57		
			PF1	58		
			PF2	59		
				60		
					1 Shield	
					Shell	
						<p>Loop for channels 1 and 2</p> <p>Links: P1, P2 (Factory set P1)</p>

03.11.99	vB	vB	vB	
Date	S	TZ	Off. in ch.	contr. Norm
Dept.: PA-VP	Nr. 36-7109A			
Up date: vB 11.04.06	Replaces: xxxxxx / 36-xxxx			Sheet 3
MB-16U5L	Scale: 1 : 2	of 3		

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Digital Input
32 channels
ISTA-217-GISOT2-32CH

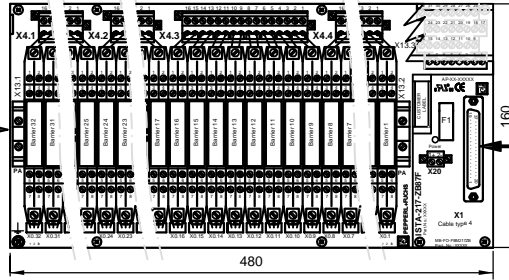
Notes:

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



Cable type 4

FBM217

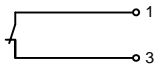
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

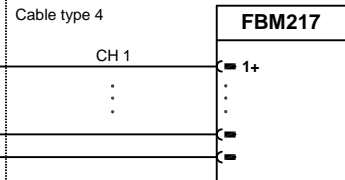
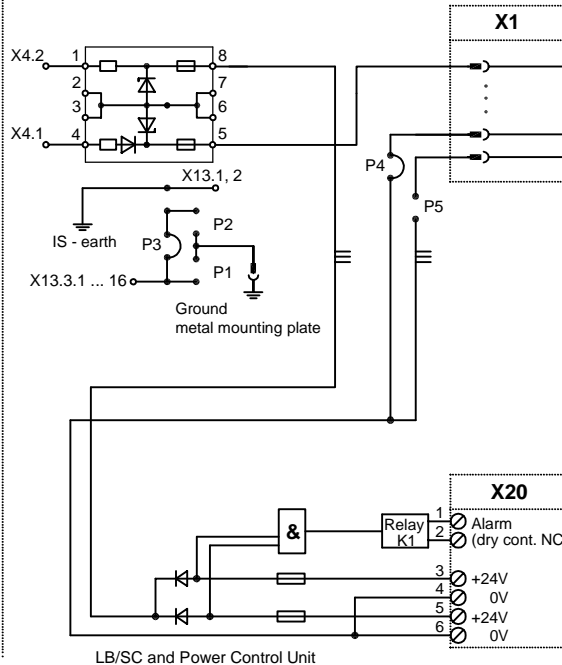
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

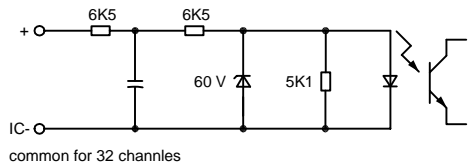


Transformer isolated barrier:

ZF... (Zener barrier see table)



Simplified Input circuit FBM:

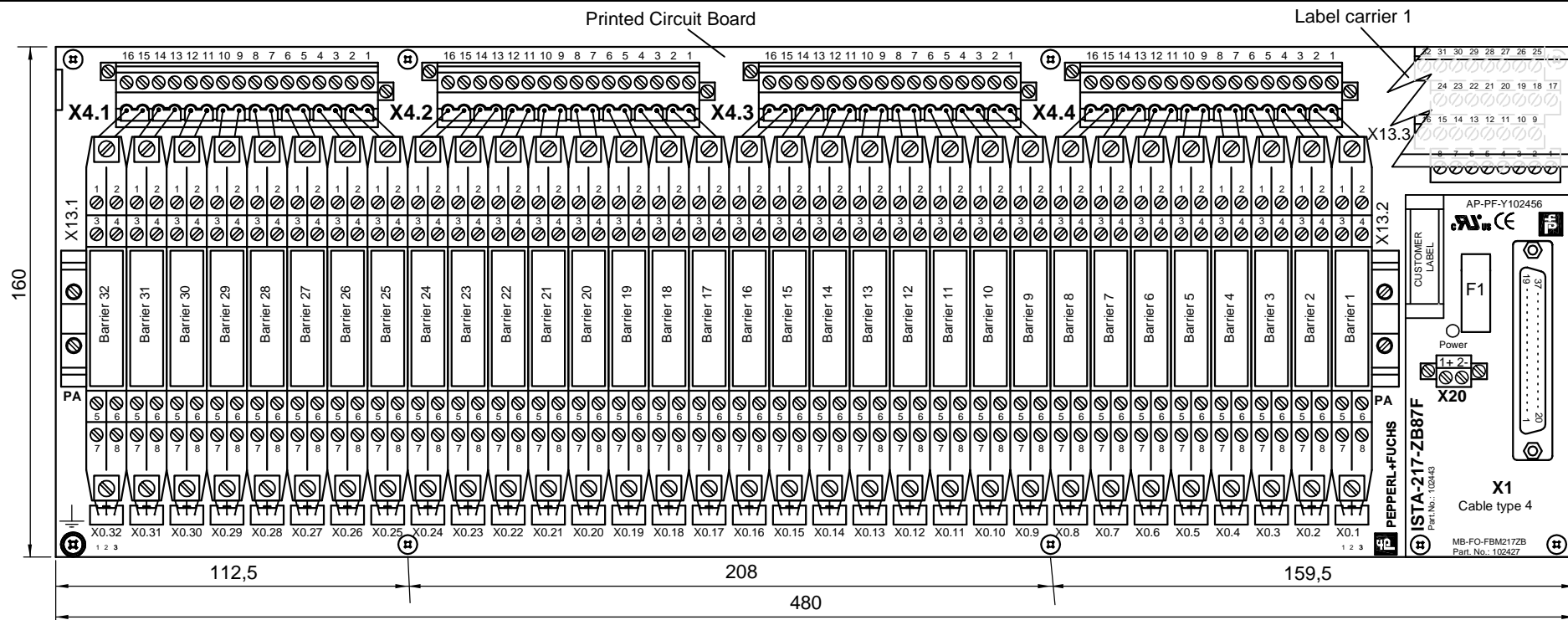


common for 32 channels

Motherboard	Signal	Module	HART communication *1)	Option
ISTA-217-ZB87F-102443	DI	ZF787.F	---	

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


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7-10

Name	Note
X1	37 pin male system connector D-SUB
----	----
X4.1, X4.2, X4.3, X4.4	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 32	32 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 32	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information: ISTA-217-ZB87F-102443	
Basic components:	Description
32 pieces: ZF787.F (DI)	Zener Barrier (function)
1 piece: MB-FO-FBM217ZB-102427	Motherboard without Zener barriers
composed by:	
1 piece: MB-UZ32-109896	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece: AP-PF-Y102456	Adapter board
1 piece: KFD0-LC1-32Z-102471	Label carrier 1
32 pieces: FSU-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
32 pieces: FSU-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

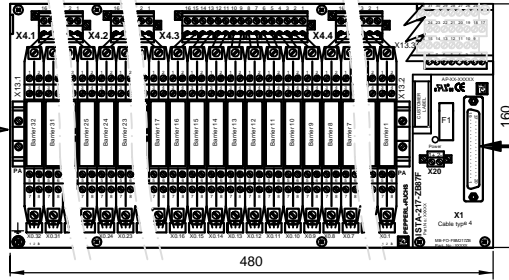
 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input 32 channels ISTA-217-ZB87F	15.02.00		vB	vB	Sb/vB		
		Date	S	TD	Off. in ch.	contr. techn.	contr. Norm	
		Dept.: PA-VP	vB/Bro		No. 36-7209			
		Up date: 26.04.04	Replaces: xxxxx / 36-xxxx			Sheet 1		
	MB-UZ32	Scale:	1 : 2	of	5			

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



Cable type 4

FBM217

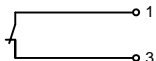
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

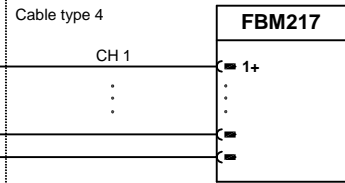
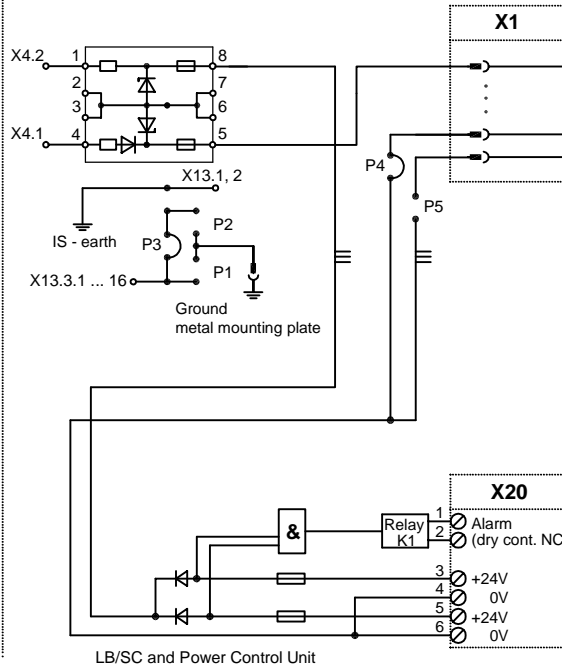
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

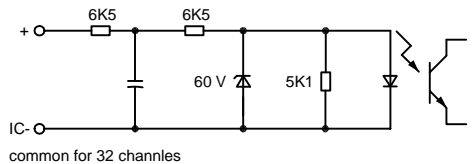


Transformer isolated barrier:

ZF... (Zener barrier see table)



Simplified Input circuit FBM:

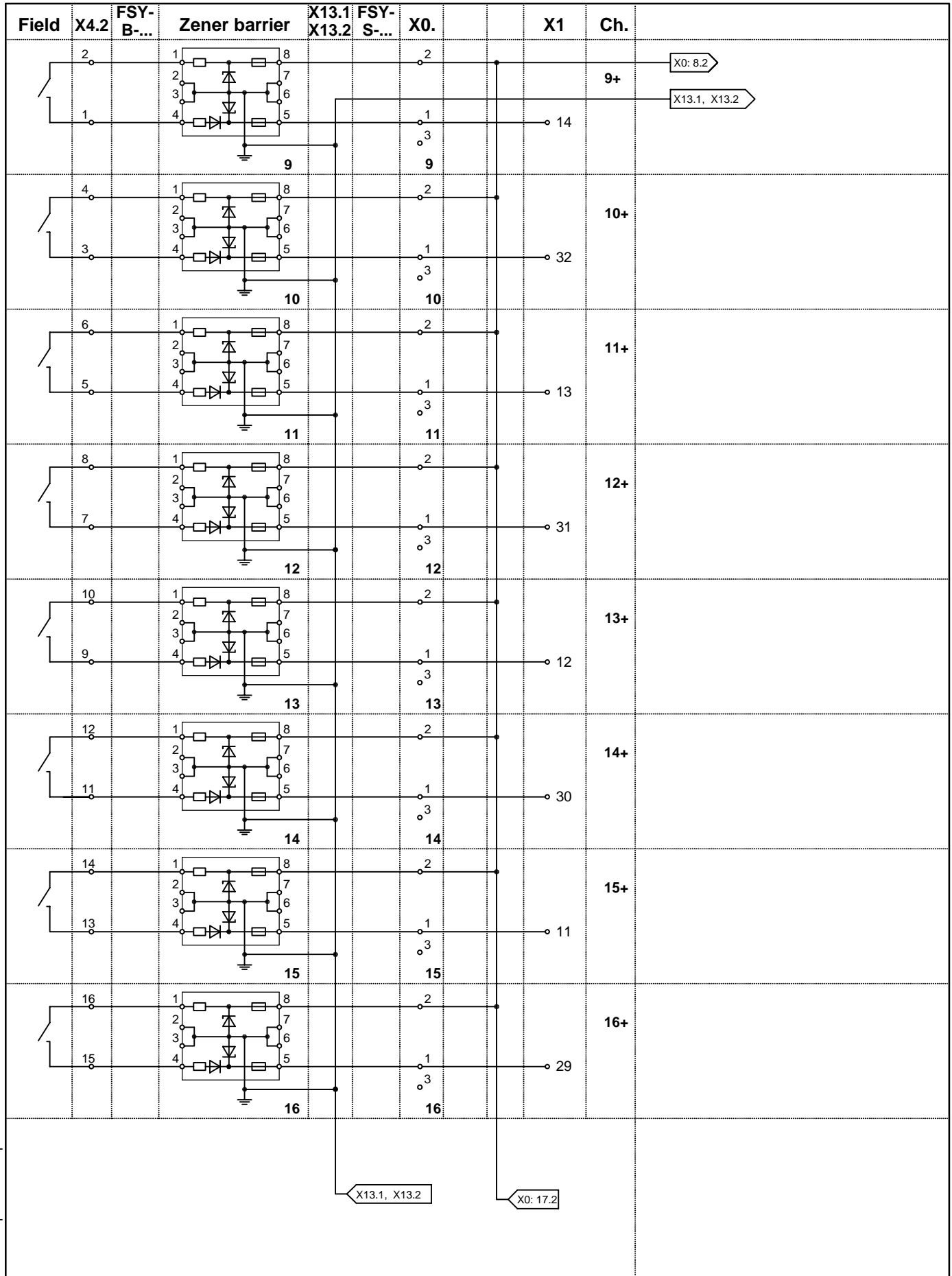


common for 32 channels

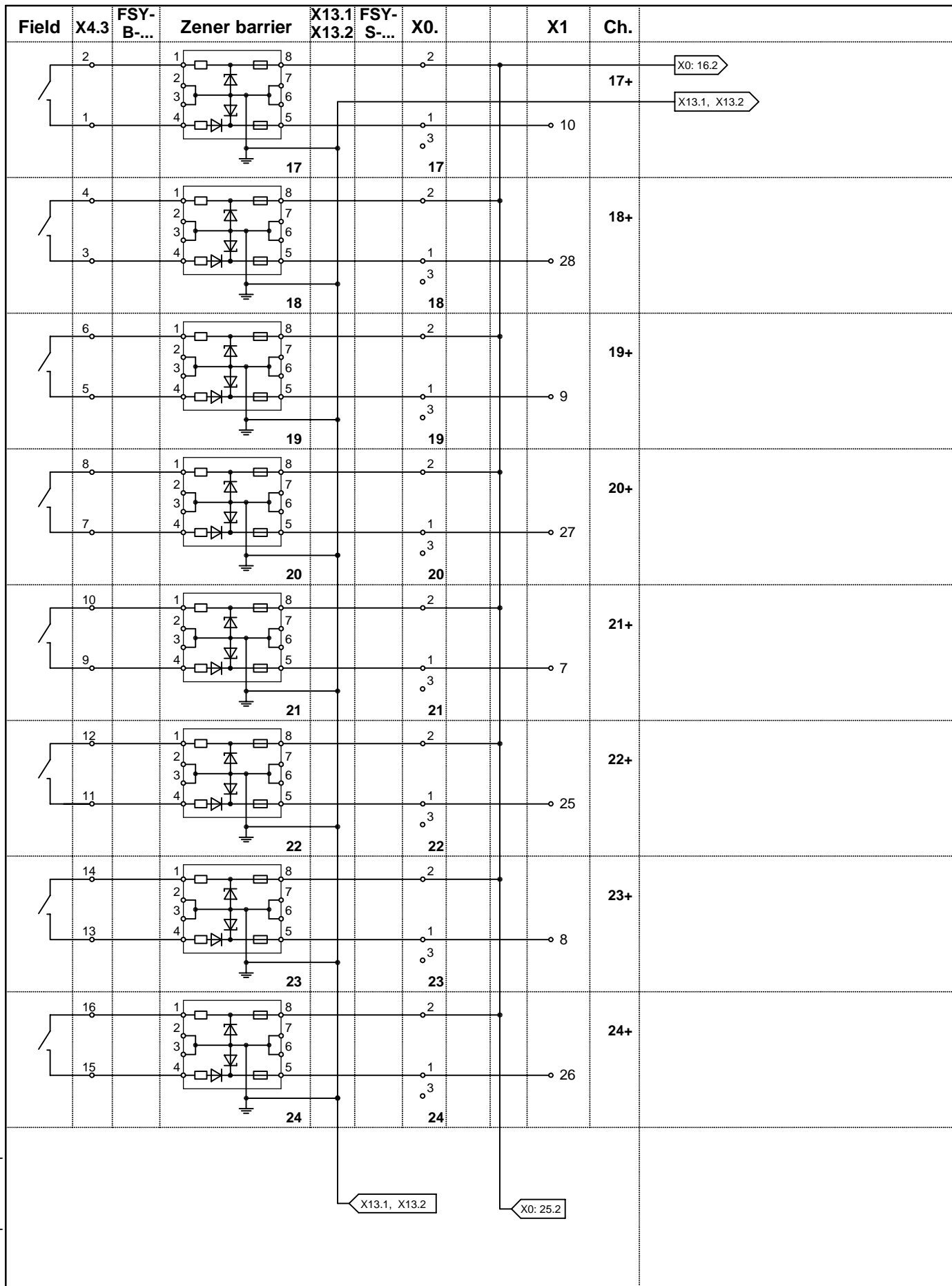
Motherboard	Signal	Module	HART communication *1)	Option
ISTA-217-ZB87F-102443	DI	ZF787.F	---	

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

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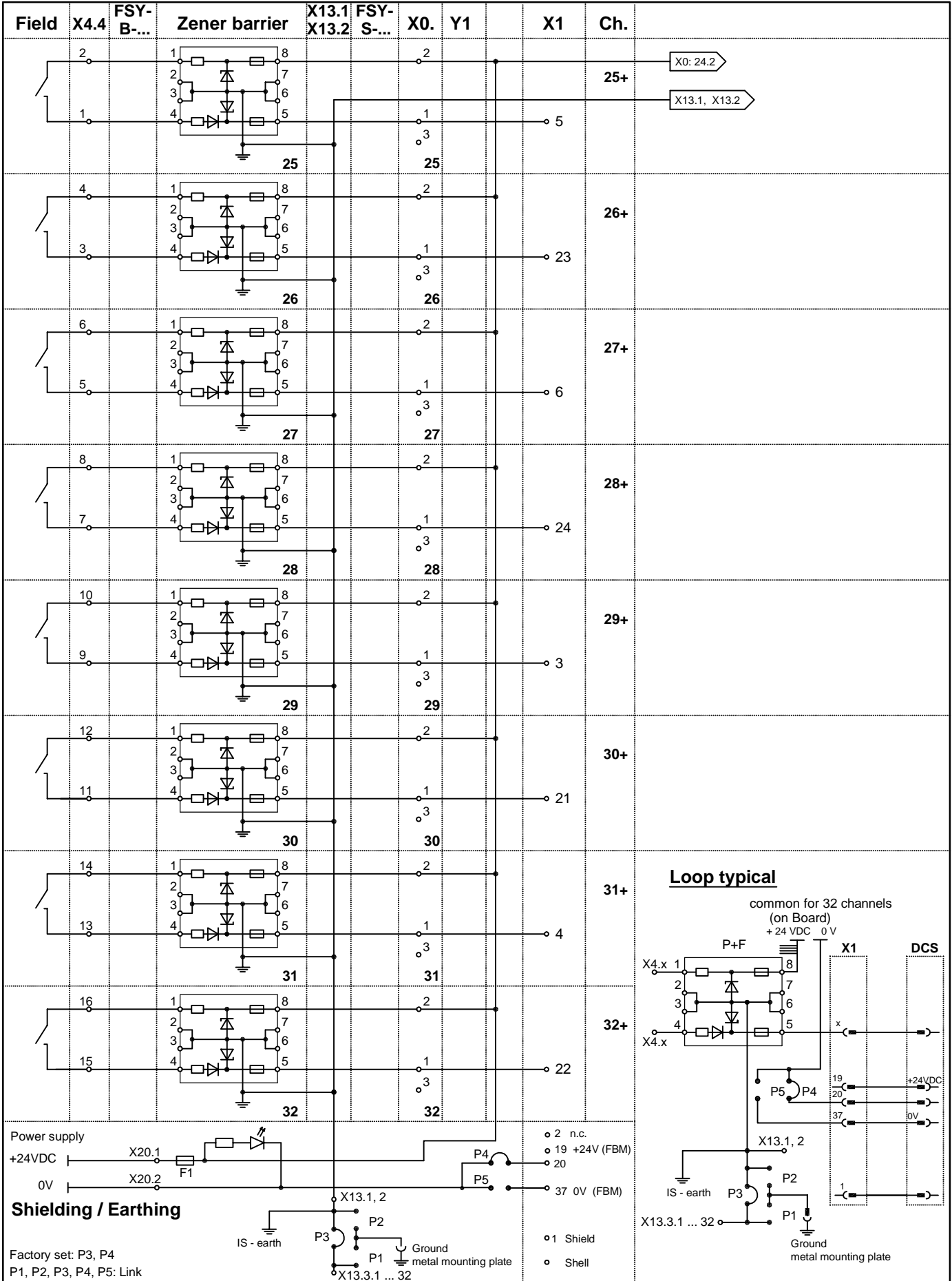
PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input 32 channels ISTA-217-ZB87F		15.02.00	KT	vB	Sb/vB	
	Date	S TZ	Off. in ch.	contr. techn.	contr. Norm		
	Dept.: PA-VP	vB/ Bro		Nr. 36-7209		Replaces:	
	Update: 26.04.04	xxxxx / 36-xxxx		Sheet 3		of 5	
	MB-UZ32		Scale:				



		15.02.00		KT	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm		
Dept.: PA-VP		Nr. 36-7209					
Update: 26.04.04		Replaces: vB/Bro xxxxx / 36-xxxx				Sheet 4	
MB-UZ32		Scale:				of 5	

PEPPERL+FUCHS
 Mannheim-Schönau

Motherboard unit
 Digital Input
 32 channels
ISTA-217-ZB87F



15.02.00		KT	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Br		Nr. 36-7209		
Update: 26.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 5		
MB-UZ32	Scale:		of 5		



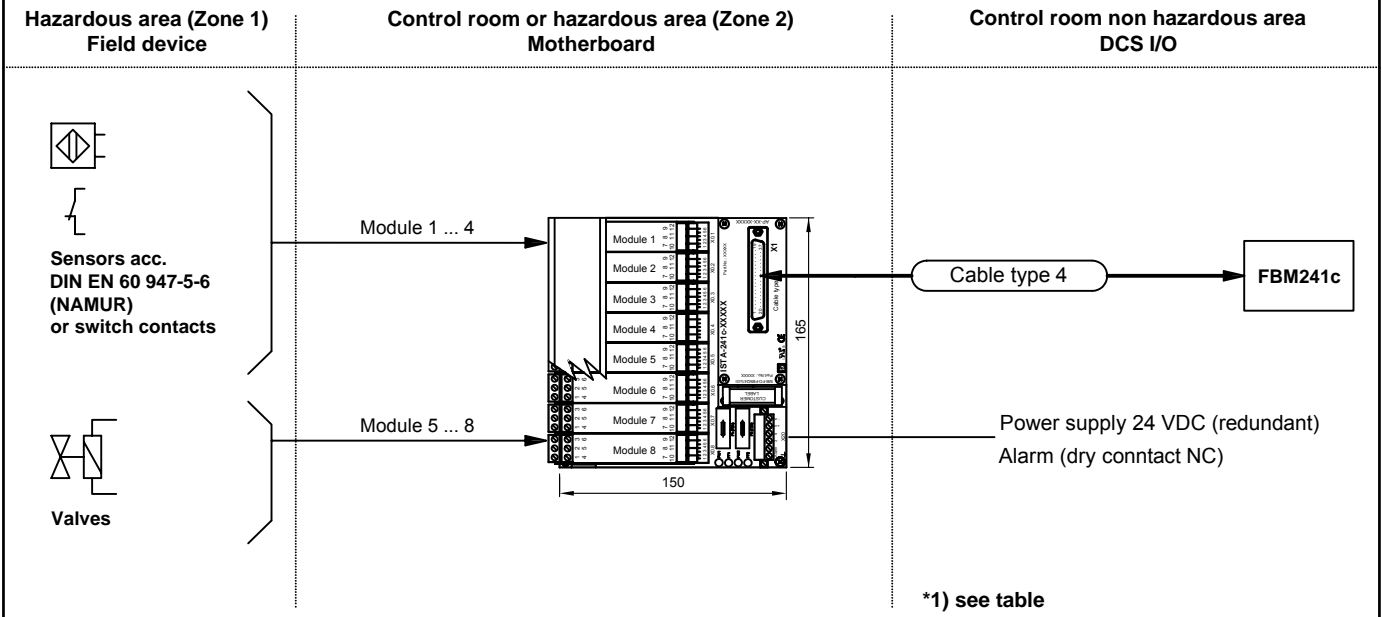
Motherboard unit
 Digital Input
 32 channels
ISTA-217-ZB87F

8. FBM241c Application

(8 channels DI + 8 channels DO)

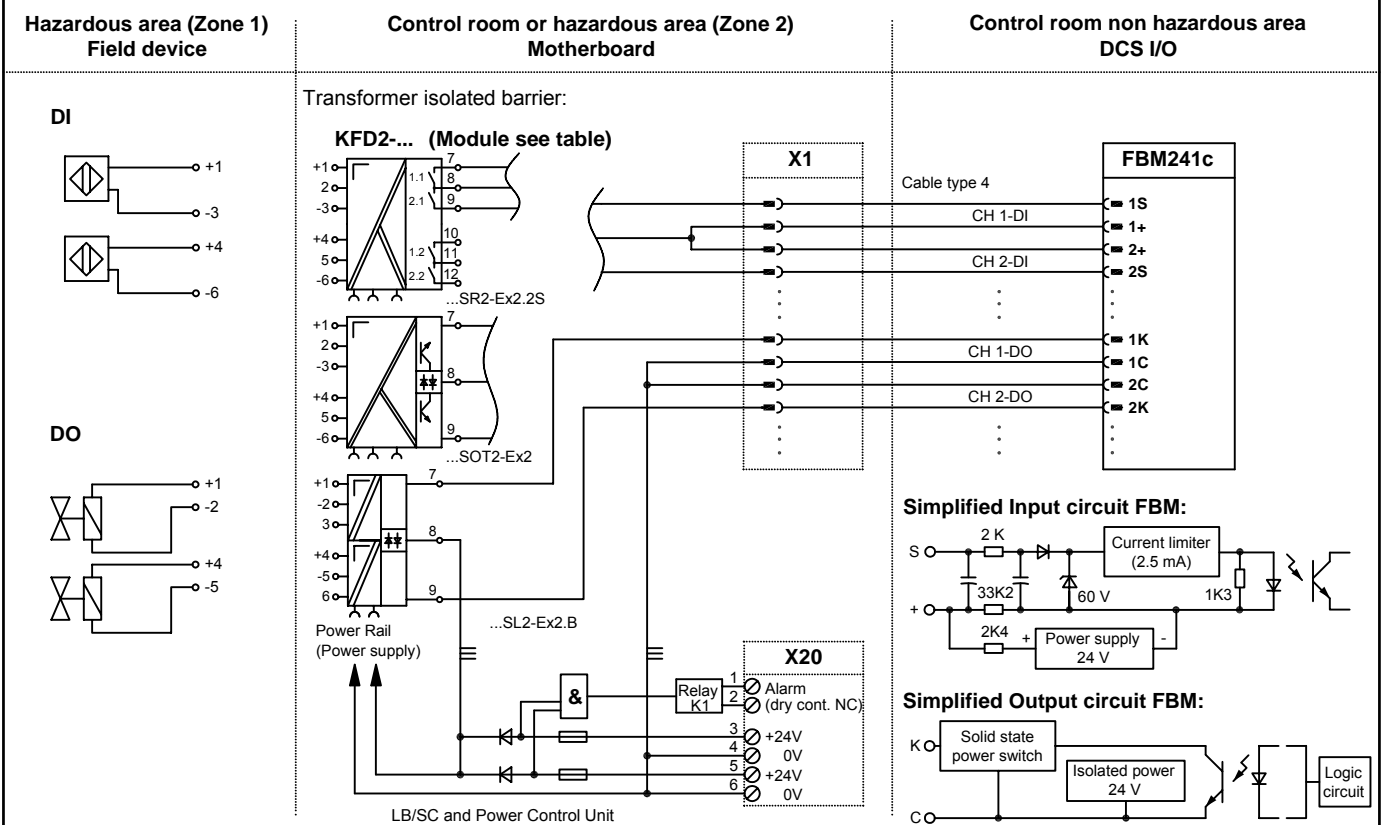
	Page
Motherboard ISTA-241c-GISR2SL-16CH	8- 1
Part No.:	97699
Function:	Digital Input / Output
Channels:	8 AI + 8 AO
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SR2-Ex2.2S (DI)
KF- Module (dual channel):	KFD2-SL2-Ex2.B (DO)
Simplified schematic:	drawing no. 36-6186
Wiring Diagram:	drawing no. 36-7119
Motherboard ISTA-241c-GISOT2SL-16CH	8- 4
Part No.:	98830
Function:	Digital Input / Output
Channels:	8 AI + 8 AO
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SOT2-Ex2 (DI)
KF- Module (dual channel):	KFD2-SL2-Ex2.B (DO)
Simplified schematic:	drawing no. 36-6186
Wiring Diagram:	drawing no. 36-7120
Motherboard ISTA-241c-ZB87F	8- 7
Part No.:	102444
Function:	Discrete Input / Output
Channels:	8 AI + 8 AO
System cable:	Cable type 4
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6211
Wiring Diagram:	drawing no. 36-7210

Notes:



*1) see table

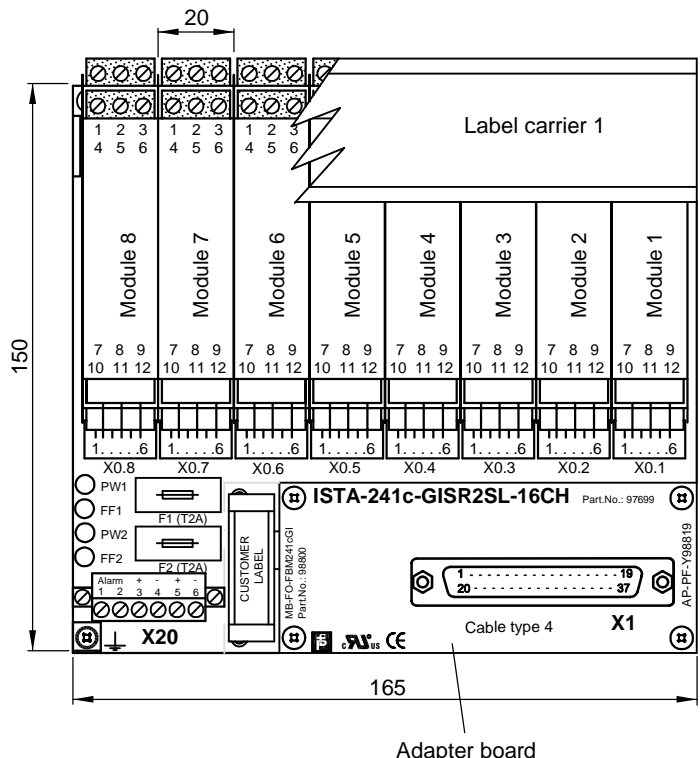
LOOP-DIAGRAM (dual channel modules)



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-241c-GISR2SL-16CH-97699	DI/DO	KFD2-SR2-Ex2.2S / KFD2-SL2-Ex2.B	---	
ISTA-241c-GISOT2SL-16CH-98830	DI/DO	KFD2-SOT2-Ex2 / KFD2-SL2-Ex2.B	---	

10.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6186A			
Up date: 01.02.08	vB	Replaces: xxxxxx / 36-xxxx	Sheet 1 of 1	
		Scale: 1 : 5		


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Name	Note
X1	37 pin male system connector D-SUB
---	---
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: ISTA-241c-GISR2SL-16CH-97699		
Basic components:	Description	
4 pieces:	KFD2-SR2-Ex2.2S (DI)	KF-Module type (function)
4 pieces:	KFD2-SL2-Ex2.B (DO)	KF-Module type (function)
1 piece:	MB-FO-FBM241cGI-98800	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-Y98819	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
4 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard
4 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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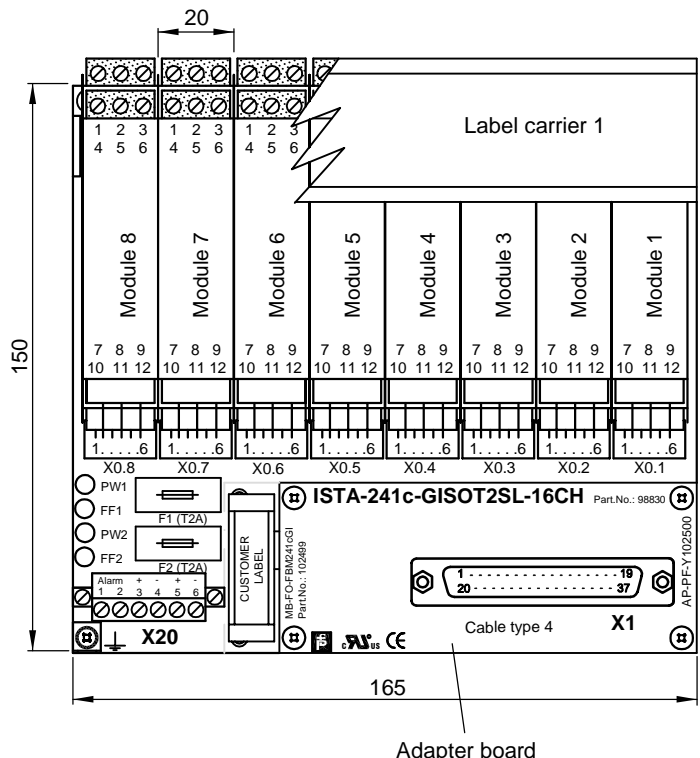
 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input / Output 8DI + 8DO channels ISTA-241c-GISR2SL-16CH	28.10.99	Dn	vB	vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. 36-7119			
		vB/Bro Up date: 27.04.04	Replaces: xxxxxxx / 36-xxxx		Sheet 1	
		MB-8U2	Scale:	1 : 2	of 2	

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
			4 5 6	1 2 3	18 36, 35 17	1S 1+,2+ 2S	DI Module type: KFD2-SR2-Ex2.2S FSY- Cable type: FSY-L456-98837 KF-Module terminal no.:
	2		4 5 6	28 29 30	16 34, 33 15	3S 3+,4+ 4S	
	3		4 5 6	31 32 33	14 32, 31 13	5S 5+,6+ 6S	<u>Loop for channels 1 and 2 (DI)</u>
	4		4 5 6	34 35 36	12 30, 29 11	7S 7+,8+ 8S	
			4 5 6	13 14 15	10 28, 27 9	1K 1C,2C 2K	DO Module type: KFD2-SL2-Ex2.B FSY- Cable type: FSY-L456-98837 KF-Module terminal no.:
	6		4 5 6	40 41 42	8 26, 25 7	3K 3C,4C 4K	
	7		4 5 6	43 44 45	6 24, 23 5	5K 5C,6C 2S	
	8		4 5 6	46 47 48	4 22, 21 3	7K 7C,8C 8K	<u>Loop for channels 1 and 2 (DO)</u>
			49...51 52...54				<ul style="list-style-type: none"> o2 n.c. o19 +24V (FBM) o20 n.c. o37 0V (FBM) o1 Shield o Shell
			(+ 24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2	55 56 57 58 59 60			

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Digital Input / Output
8DI + 8DO channels
ISTA-241c-GISR2SL-16CH

05.10.99	DN	vB	Sb/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7119	
Up date: 27.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 2	
MB-8U2	Scale:		of 2	



Name	Note
X1	37 pin male system connector D-SUB
---	---
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: ISTA-241c-GISOT2SL-16CH-98830		
Basic components:	Description	
4 pieces:	KFD2-SOT2-Ex2 (DI)	KF-Module type (function)
4 pieces:	KFD2-SL2-Ex2.B (DO)	KF-Module type (function)
1 piece:	MB-FO-FBM241cGI-102499	Motherboard without modules
composed by:		
1 piece:	MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece:	AP-PF-Y102500	Adapter board
1 piece:	KFD0-LC1-8M-99143	Label carrier 1
4 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard
4 pieces:	FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Input / Output 8DI + 8DO channels ISTA-241c-GISOT2SL-16CH	28.10.99	Dn	vB	vB	
			Date	S TZ	Off. in ch.	contr.	contr.
			Dept.: PA-VP	36-7120			
			Up date: vB/Bro 27.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 1	
			MB-8U2	Scale:	1 : 2	of 2	

Field	Module	FSY-	X0.	Y1	X1	Ch.	Module and cable types
<p> (+24VDC) X20: 3,5 (0V) X20: 4,6 Ground metal mounting plate V1 V2 LB/SC PF1 PF2 </p>	1		4 5 6	1 2 3	18 36, 35 17	1S 1+,2+ 2S	DI Module type: KFD2-SOT2-Ex2 FSY- Cable type: FSY-L456-98837 KF-Module terminal no.: 9, 8, 7
	2		4 5 6	28 29 30	16 34, 33 15	3S 3+,4+ 4S	Loop for channels 1 and 2 (DI)
	3		4 5 6	31 32 33	14 32, 31 13	5S 5+,6+ 6S	
	4		4 5 6	34 35 36	12 30, 29 11	7S 7+,8+ 8S	
	5		4 5 6	37 38 39	10 28, 27 9	1K 1C,2C 2K	DO Module type: KFD2-SL2-Ex2.B FSY- Cable type: FSY-L456-98837 KF-Module terminal no.: 9, 8, 7
	6		4 5 6	40 41 42	8 26, 25 7	3K 3C,4C 4K	
	7		4 5 6	43 44 45	6 24, 23 5	5K 5C,6C 2S	
	8		4 5 6	46 47 48	4 22, 21 3	7K 7C,8C 8K	Loop for channels 1 and 2 (DO)
49...51 52...54 55 56 57 58 59 60					<ul style="list-style-type: none"> o2 n.c. o19 +24V (FBM) o20 n.c. o37 0V (FBM) o1 Shield o Shell 	+24 VDC 0 V (on Board)	

	Motherboard unit Digital Input / Output 8DI + 8DO channels ISTA-241c-GISOT2SL-16CH		05.10.99	DN	vB	Sb/vB	
	Date	S TZ	Off. in ch.	contr. techn.	contr. Norm		
	Dept.: PA-VP	Up date: 27.04.04		Nr. 36-7120 Replaces: xxxxxx / 36-xxxx		Sheet 2	
MB-8U2	Scale:				of	2	

Notes:

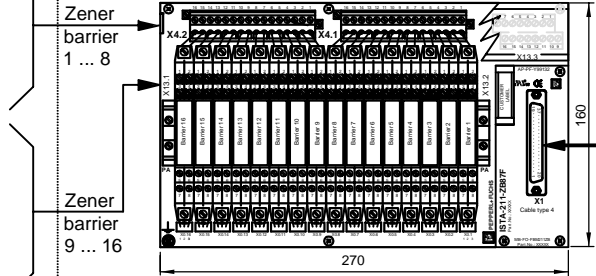
Hazardous area (Zone 1)
Field device

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

Valves



Cable type 4

FBM241c

*1) see table

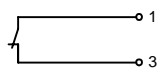
LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

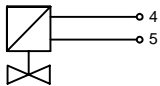
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O

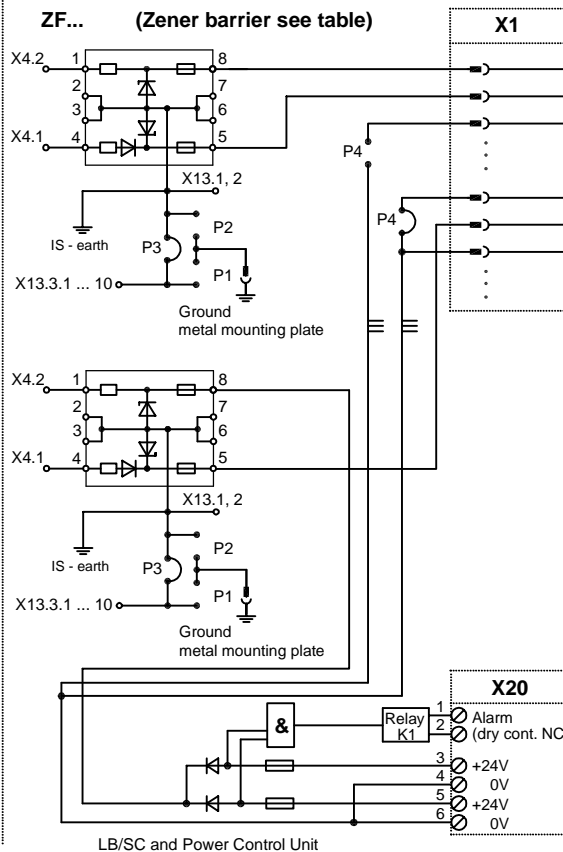
DI



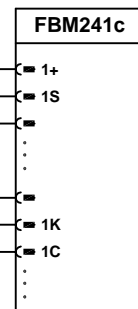
DO



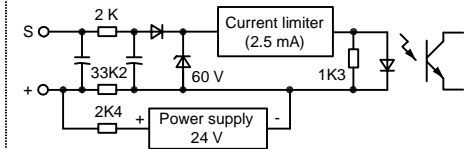
Transformer isolated barrier:



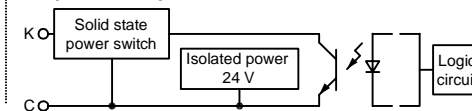
Cable type 1



Simplified Input circuit FBM:



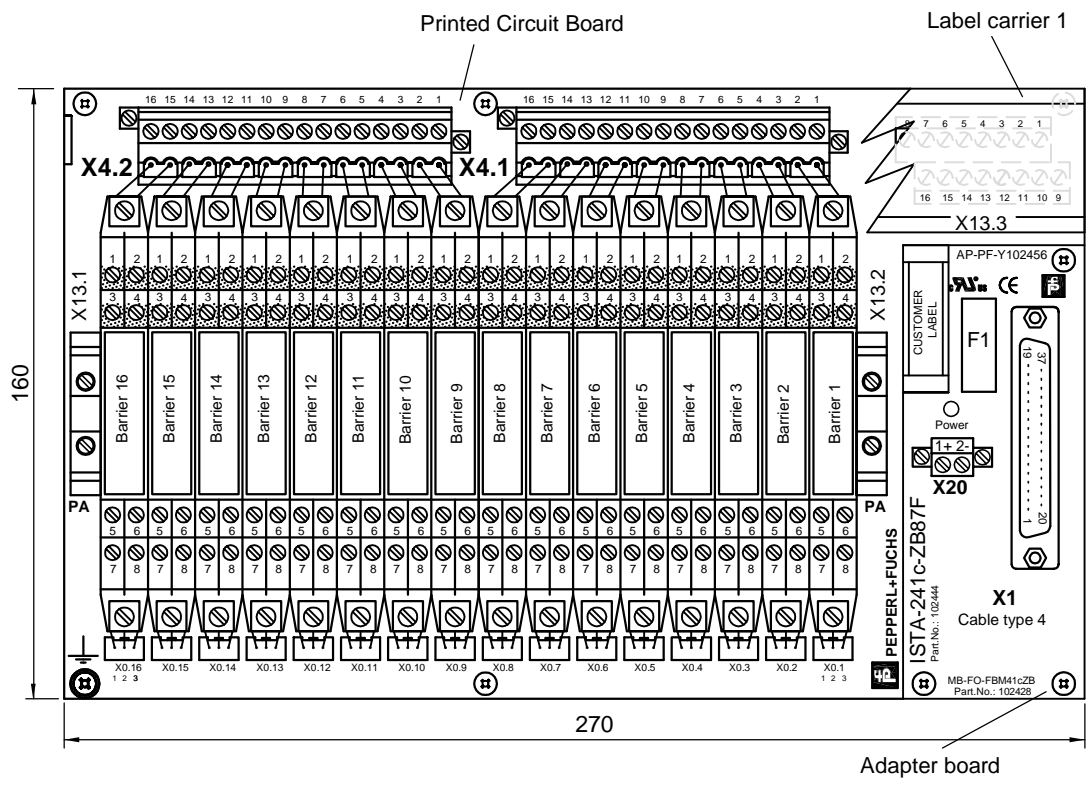
Simplified Output circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-241c-ZB87F-102444	DI/DO	ZF787.F	---	

02.04.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6211			
Up date: 27.04.04	vB/Bro	Replaces: xxxxxx / 36-xxxx		Sheet 1
		Scale: 1 : 5		of 1


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Name	Note
X1	37 pin male system connector D-SUB
----	----
X4.1, X4.2	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 16	16 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 16	3 pin male terminal to connect the cable to zener barrier
----	----

Ordering information: ISTA-241c-ZB87F-102444	
Basic components:	Description
8 pieces: ZF787.F (AI)	Zener Barrier (function)
8 pieces: ZF787.F (AO)	Zener Barrier (function)
1 piece: MB-FO-FBM41cZB-102428	Motherboard without Zener barriers
composed by:	
1 piece: MB-UZ16-Y99129	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece: AP-PF-Y102456	Adapter board
1 piece: KFD0-LC1-16Z-99133	Label carrier 1
16 pieces: FSU-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
16 pieces: FSU-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

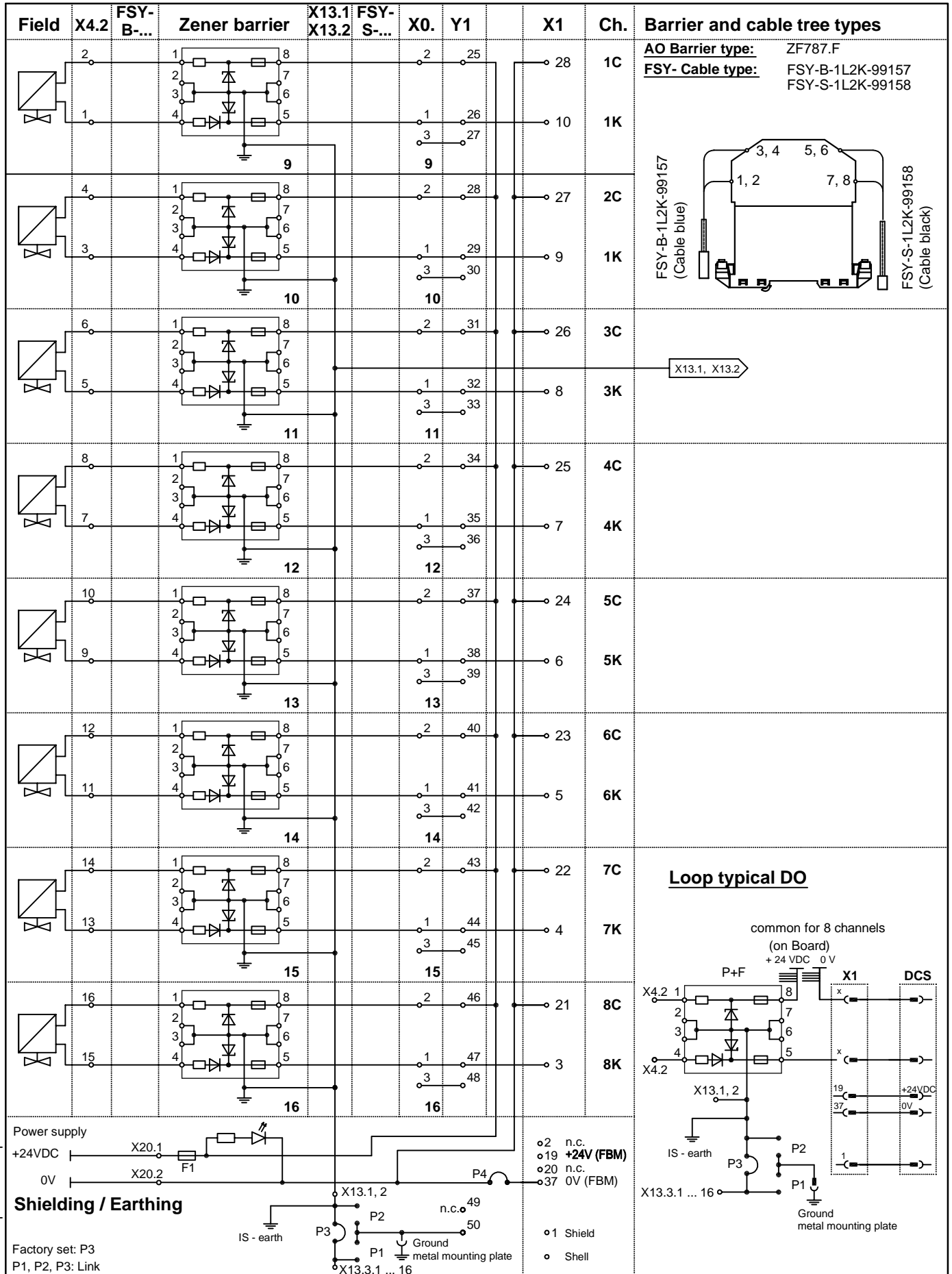
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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Discrete Input / Output 8DI + 8DO channels ISTA-241c-ZB87F	14.02.00	KT	SB	SB/vB		
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Up date: 27.04.04		Nr. 36-7210		
		MB-UZ16	Replaces: vB/Bro xxxxx / 36-xxxx		Sheet 1		
		Scale: 1 : 2		of 3			

Field	X4.1	FSY-B-...	Zener barrier	X13.1 X13.2	FSY-S-...	X0	Y1	X1	Ch.	Barrier and cable tree types
	2 1					2 1 3	1 2 3	36 18	1+ 1S	AI Barrier type: ZF787.F FSY- Cable type: FSY-B-1L2K-99157 FSY-S-1L2K-99158
	4 3					2 1 3	4 5 6	35 17	2+ 2S	
	6 5					2 1 3	7 8 9	34 16	3+ 3S	
	8 7					2 1 3	10 11 12	33 15	4+ 4S	
	10 9					2 1 3	13 14 15	32 14	5+ 5S	
	12 11					2 1 3	16 17 18	31 13	6+ 6S	
	14 13					2 1 3	19 20 21	30 12	7+ 7S	
	16 15					2 1 3	22 23 24	29 11	8+ 8S	

X13.1, X13.2 (IS-Earth)

15.02.00	Sb	Sb	Sb/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7210	
Update: 27.04.04	Replaces: xxxxx / 36-xxxx		Sheet 2	
MB-UZ16	Scale:		of 3	



15.02.00		KT	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Br		Nr. 36-7210		
Update: 27.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 3		
MB-UZ16	Scale:		of 3		

9. FBM242 Application

(16 channels DO)

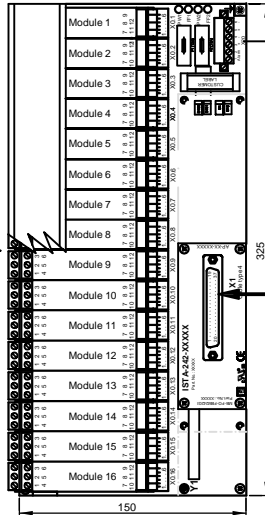
	Page
Motherboard ISTA-242-GISD-16CH	9- 1
Part No.:	97703
Function:	Digital Output
Channels:	16
System cable:	Cable type 4
KF- Module (single channel):	KFD2-SD-Ex1.48-90A
Simplified schematic:	drawing no. 36-6187_1
Wiring Diagram:	drawing no. 36-7106A
Motherboard ISTA-242-GISL-16CH	9- 5
Part No.:	97702
Function:	Digital Output
Channels:	16
System cable:	Cable type 4
KF- Module (dual channel):	KFD2-SL2-Ex2.B
Simplified schematic:	drawing no. 36-6187_2
Wiring Diagram:	drawing no. 36-7102
Motherboard ISTA-242-ZB87F	9- 9
Part No.:	99140
Function:	Digital Output
Channels:	16
System cable:	Cable type 4
Zener Barrier (single channel):	ZF787.F
Simplified schematic:	drawing no. 36-6212
Wiring Diagram:	drawing no. 36-7137

Notes:

Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



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

Cable type 4

FBM242

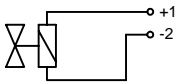
*1) see table

LOOP-DIAGRAM (single channel modules)

Hazardous area (Zone 1)
Field device

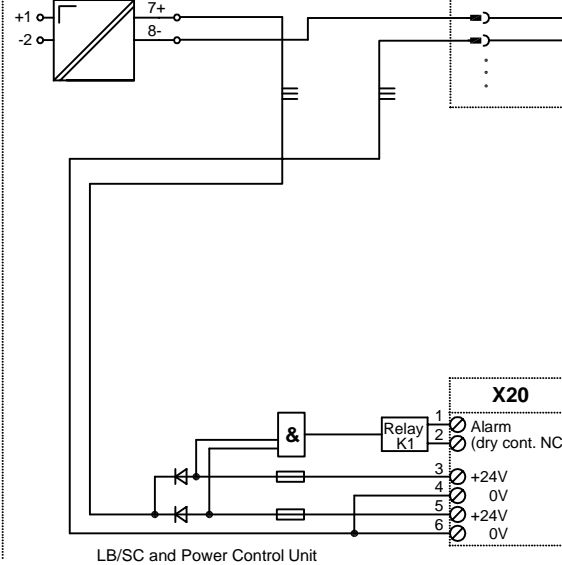
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Transformer isolated barrier:

KFD2-... (Module see table)

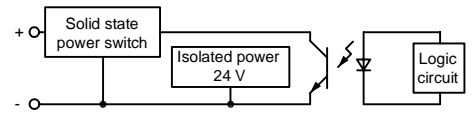


Cable type 4

FBM242

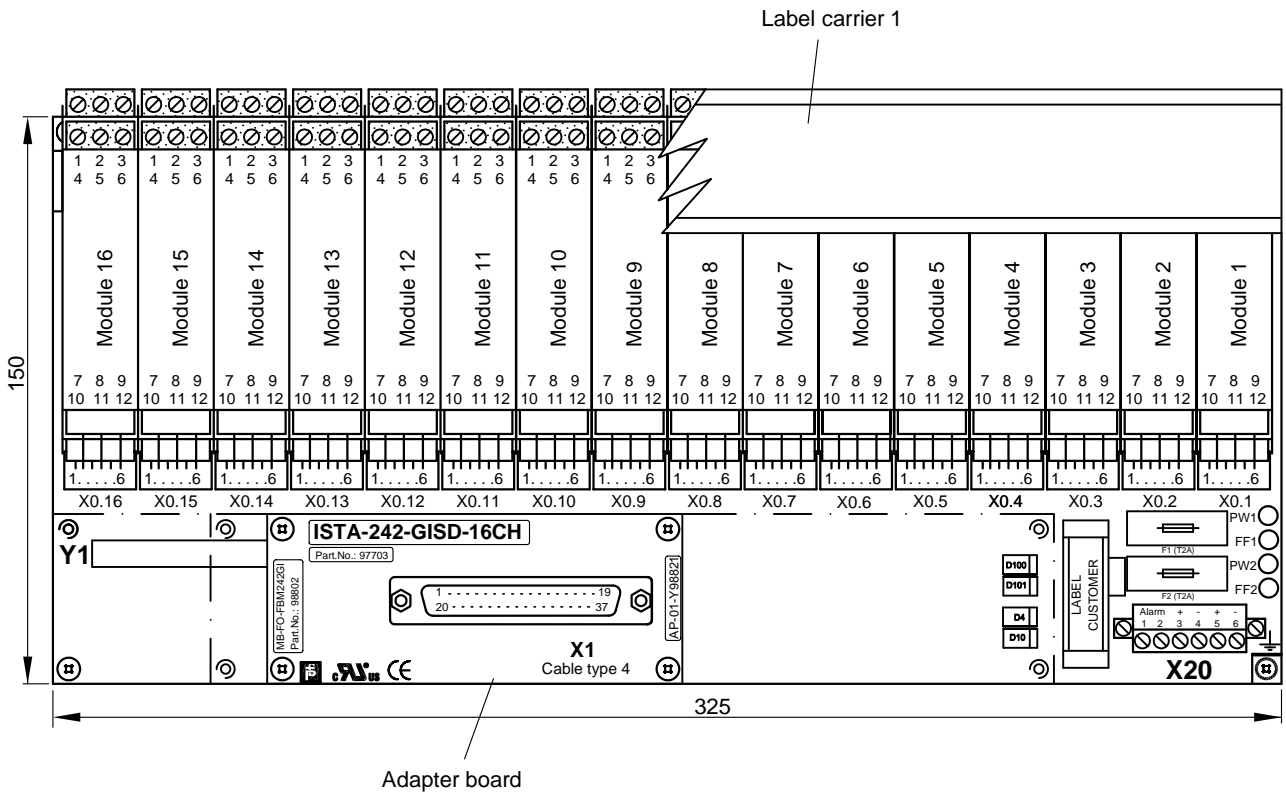
CH 1

Simplified Output circuit FBM:



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-242-GISD-16CH-97703	DO	KFD2-SD-Ex1.48.90A	---	


13.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6187 1			
vB/Bro	Replaces:			
Up date: 21.04.04	xxxxxx / 36-xxxx		Sheet 1	
Scale: 1 : 5		of 1		

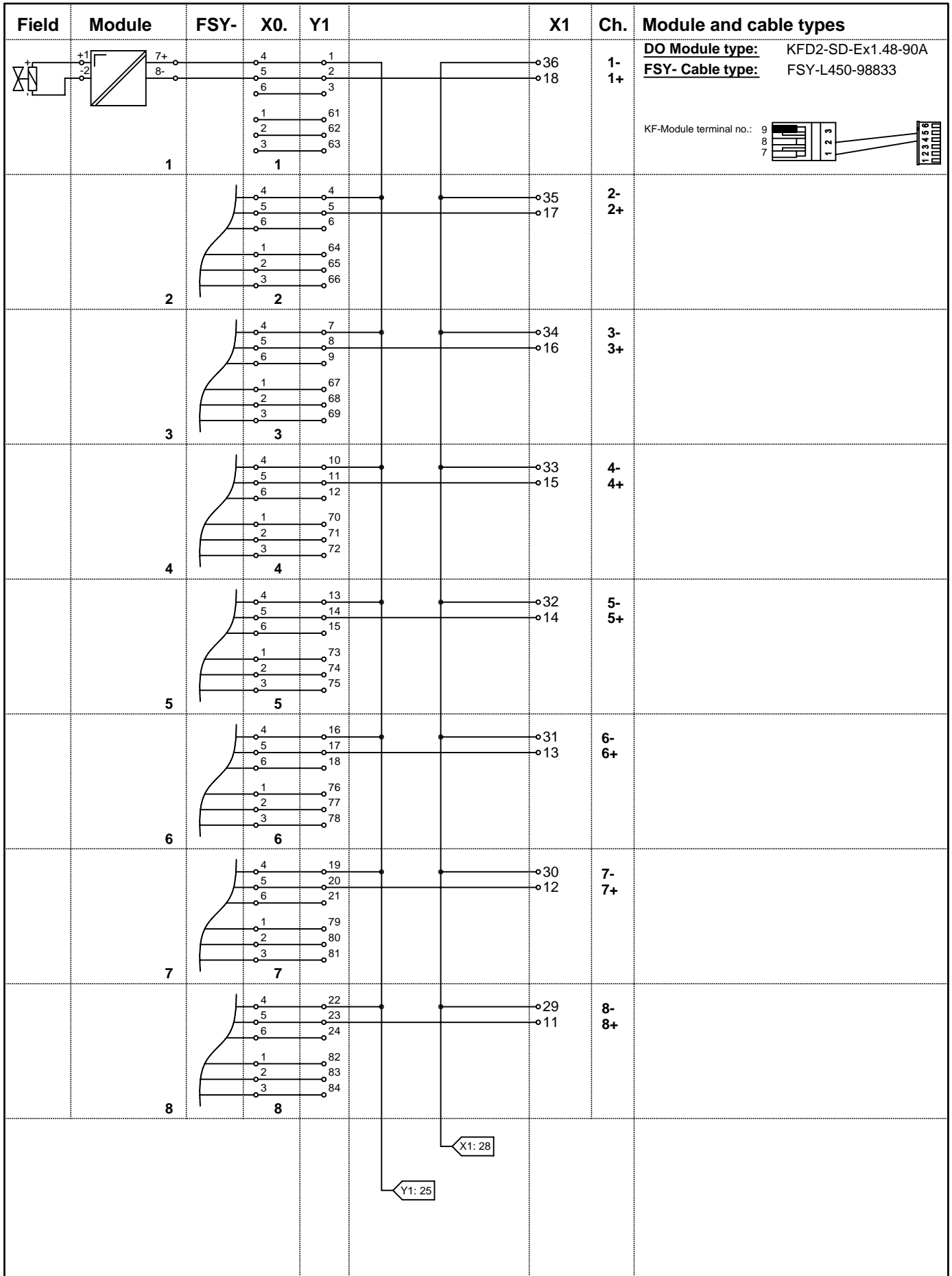


Name	Note
X1	37 pin male system connector D-SUB
---	---
X0.1 16	6 pin male terminals for cable tree FSY....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: ISTA-242-GISD-16CH-97703	
Basic components:	Description
16 pieces: KFD2-SD-Ex1.48-90A (DO)	KF-Module type (function)
1 piece: MB-FO-FBM242GI-98802	Motherboard without modules
composed by:	
1 piece: MB-16U5L-103681	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-01-Y98821	Adapter board
1 piece: KFD0-LC1-16M-99144	Label carrier 1
16 pieces: FSY-L450-Y98833	Cable tree connection KF-Module-Motherboard

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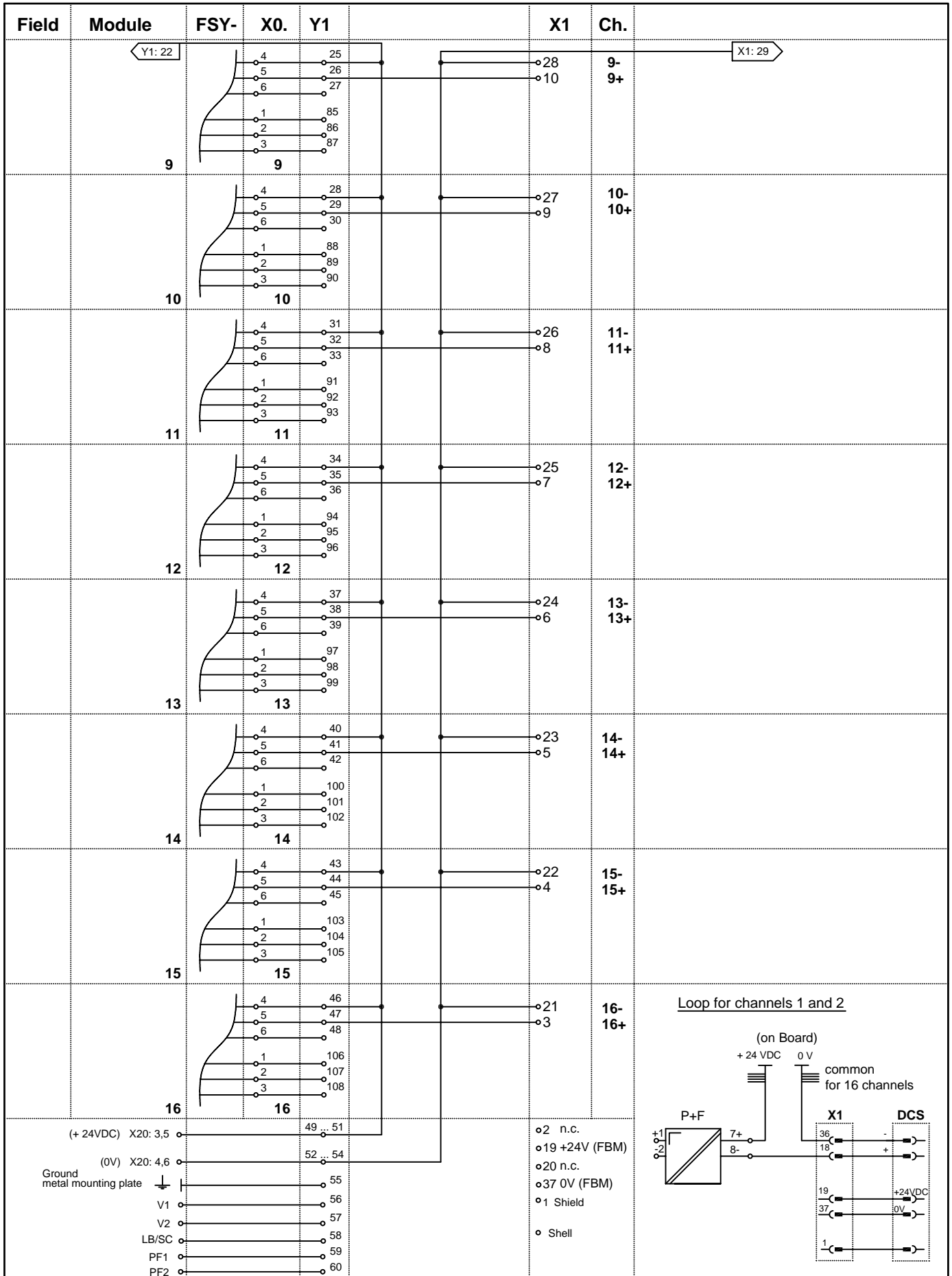
 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Output 16 channels ISTA-242-GISD-16CH	03.11.99	vB	vB	vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	Nr. 36-7106B			
		Up date: 30.03.06	Replaces: xxxxxx / 36-xxxx			Sheet 1
		MB-16U5L	Scale: 1 : 2			of 3



29.10.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7106B				
Up date: 18.03.04	Replaces: xxxxx / 36-xxxx			Sheet 2	
MB-16U5L	Scale:			of 3	

PEPPERL+FUCHS
Mannheim-Schönau

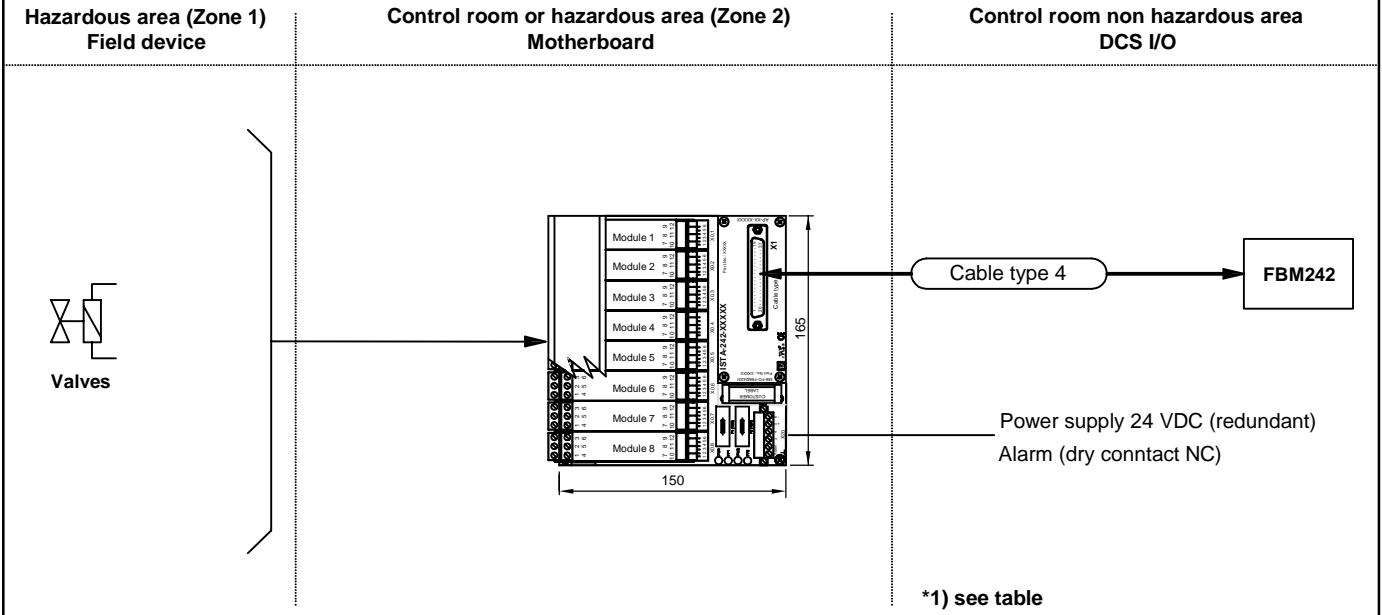
Motherboard unit
Digital Output
16 channels
ISTA-242-GISD-16CH



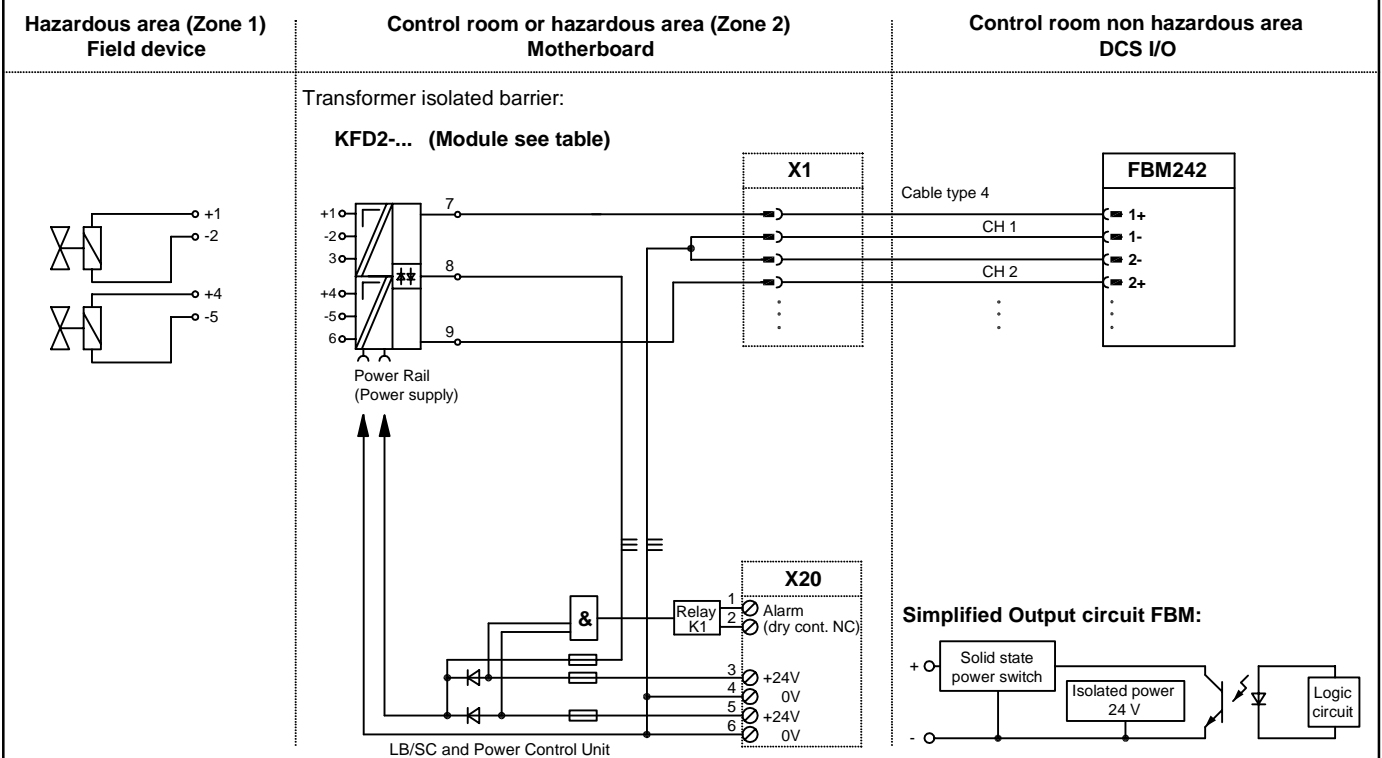
29.09.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7106B		
Up date: 18.03.04	Replaces: xxxxx / 36-xxxx		Sheet 3		
MB-16U5L	Scale:		of 3		

PEPPERL+FUCHS
Mannheim-Schönau

Motherboard unit
Digital Output
16 channels
ISTA-242-GISD-16CH



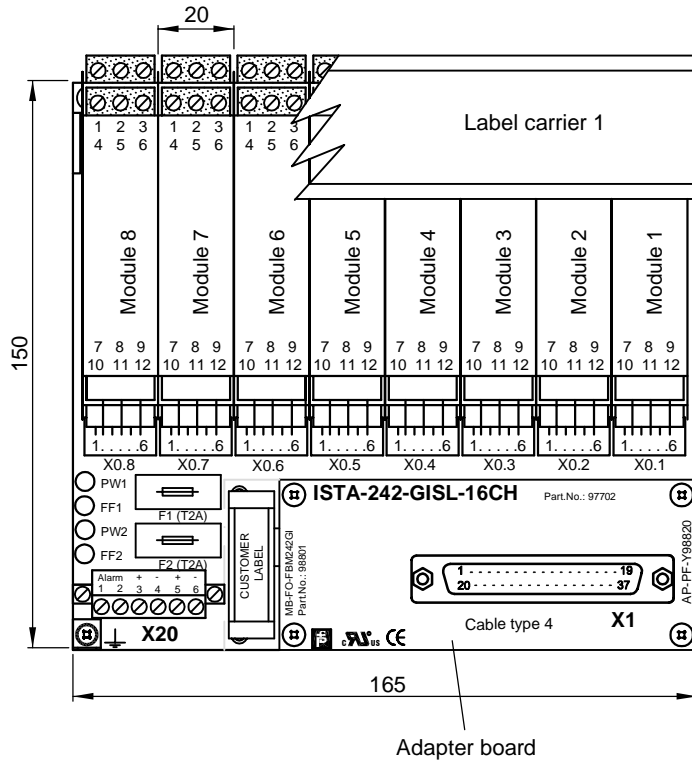
LOOP-DIAGRAM (dual channel modules)



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-242-GISL-16CH-97702	DO	KFD2-SL2-Ex2.B	---	

13.02.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6187 2			
Up date: vB/Bro 21.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 1	
	Scale:	1 : 5	of 1	

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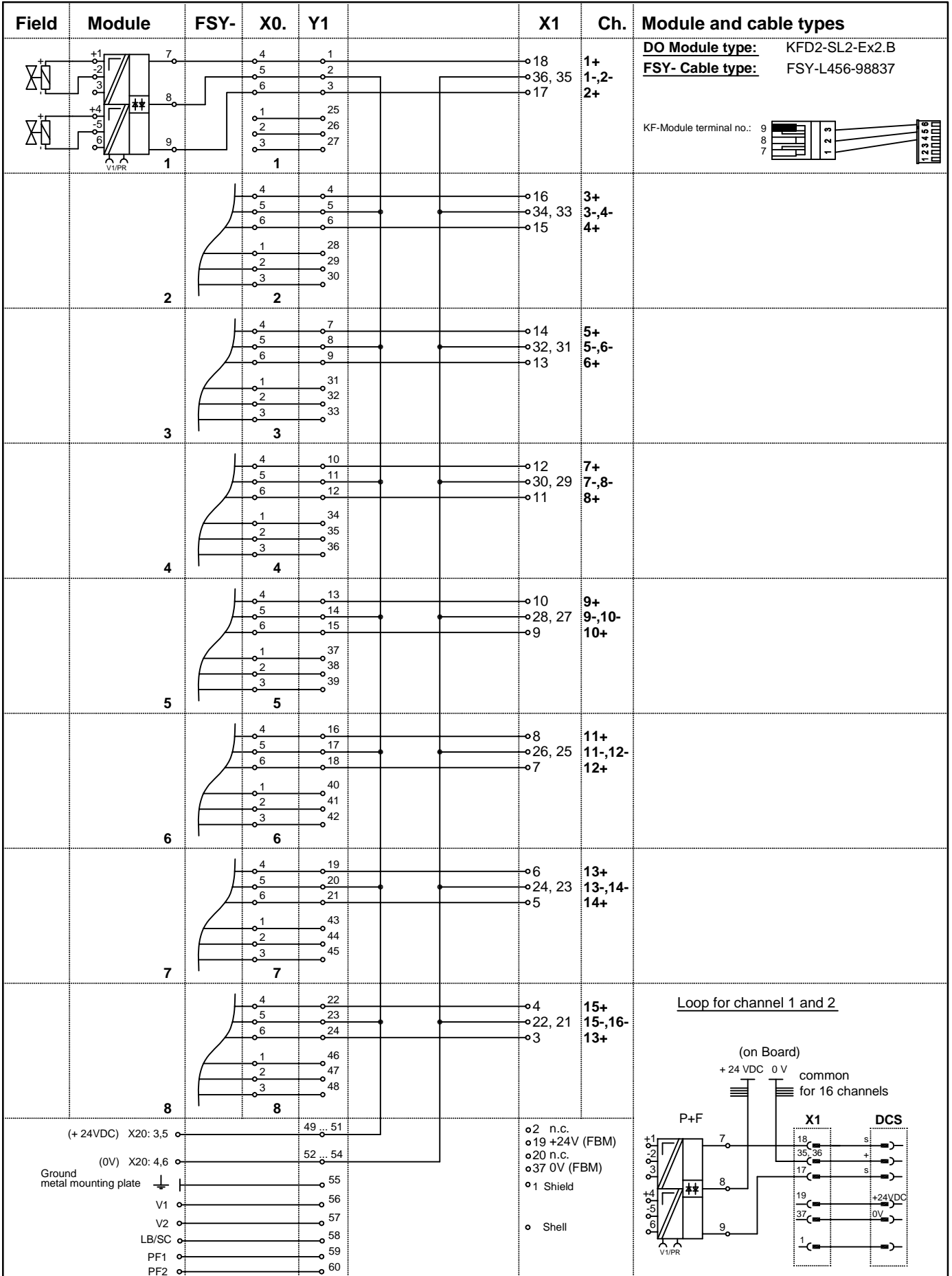
Adapter board

Name	Note
X1	37 pin male system connector D-SUB
---	---
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: ISTA-242-GISL-16CH-97702	
Basic components:	Description
8 pieces: KFD2-SL2-Ex2.B (DO)	KF-Module type (function)
1 piece: MB-FO-FBM242GI-98801	Motherboard without modules
composed by:	
1 piece: MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-PF-Y98820	Adapter board
1 piece: KFD0-LC1-8M-99143	Label carrier 1
8 pieces: FSY-L456-Y98837	Cable tree connection KF-Module-Motherboard

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	Motherboard unit Digital Output 16 channels ISTA-242-GISL-16CH	21.10.99	vB	vB	vB
		Date	S TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7102		
		Up date: 28.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 1
		MB-8U2	Scale:	1 : 2	of 2



04.10.99		vB	vB	Sb/vB	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	vB/Bro		Nr. 36-7102		
Up date: 28.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 2		
MB-8U2	Scale:		of 2		

PF
PEPPERL+FUCHS
 Mannheim-Schönau

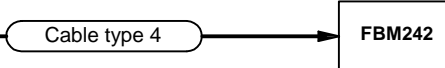
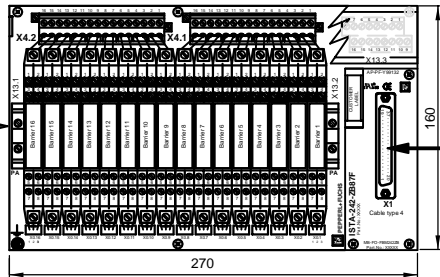
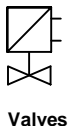
Motherboard unit
 Digital Output
 16 channels
ISTA-242-GISL-16CH

Notes:

Hazardous area (Zone 1)
Field device

Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



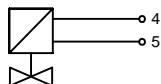
*1) see table

LOOP-DIAGRAM

Hazardous area (Zone 1)
Field device

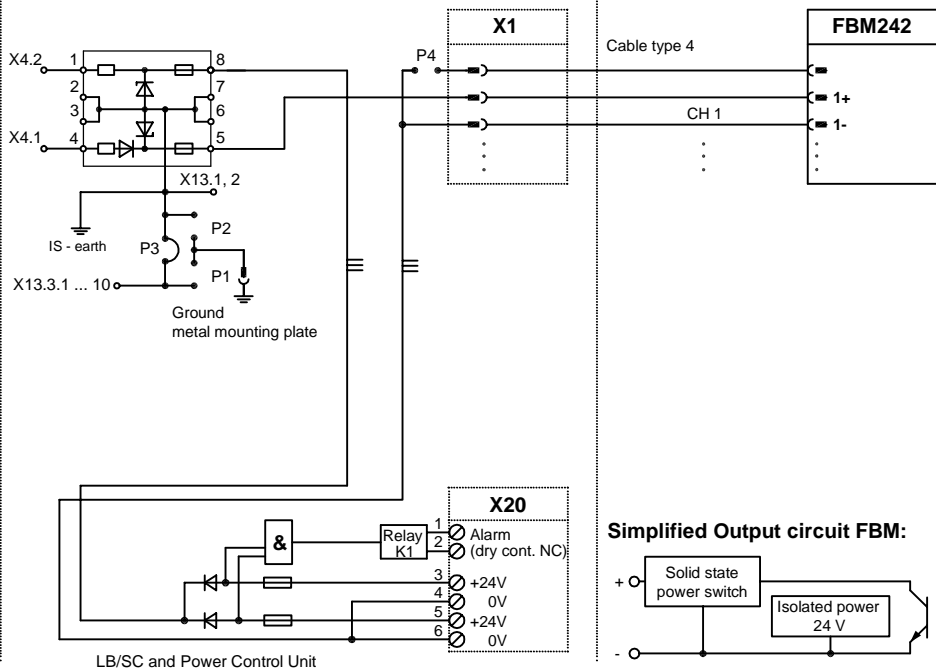
Control room or hazardous area (Zone 2)
Motherboard

Control room non hazardous area
DCS I/O



Transformer isolated barrier:

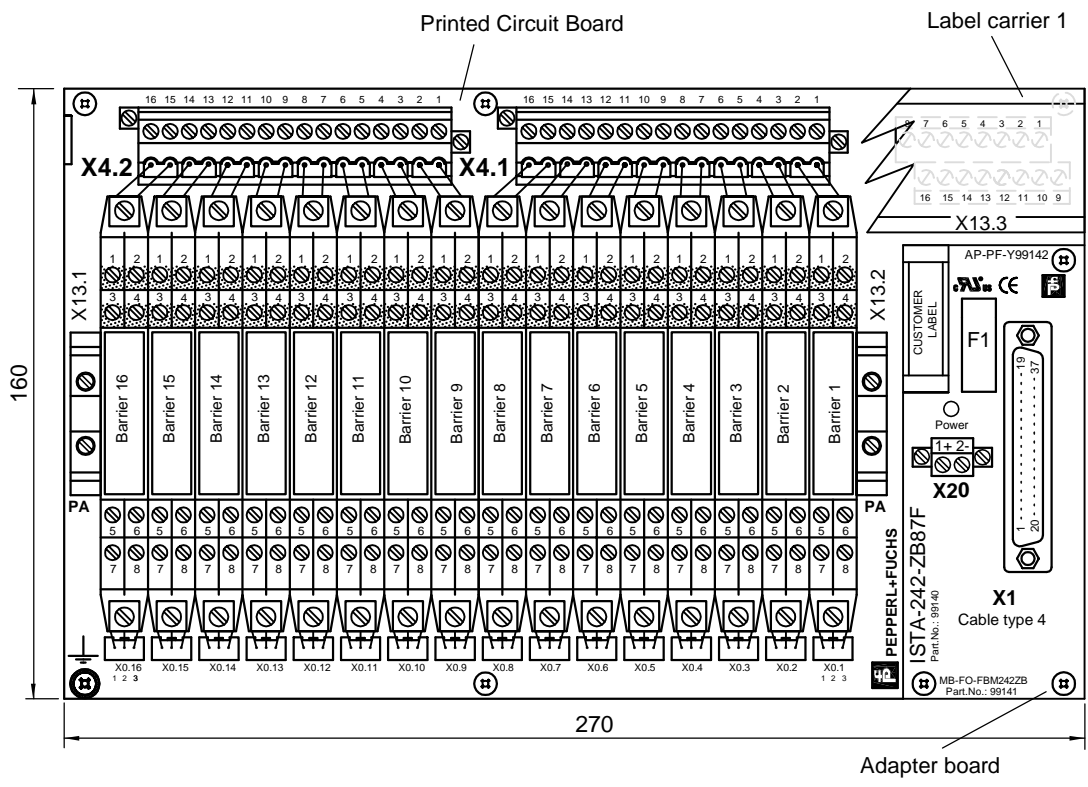
ZF... (Zener barrier see table)



Motherboard	Signal	Module	HART communication *1)	Option
ISTA-242-ZB87F-99140	DO	ZF787.F	---	

03.04.03	KT	Sb	Sb	
Date	S TD	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA - VP	No. 36-6212			
vB/Bro	Replaces:			
Up date: 28.04.04	xxxxxx / 36-xxxx		Sheet 1	
Scale: 1 : 5		of 1		


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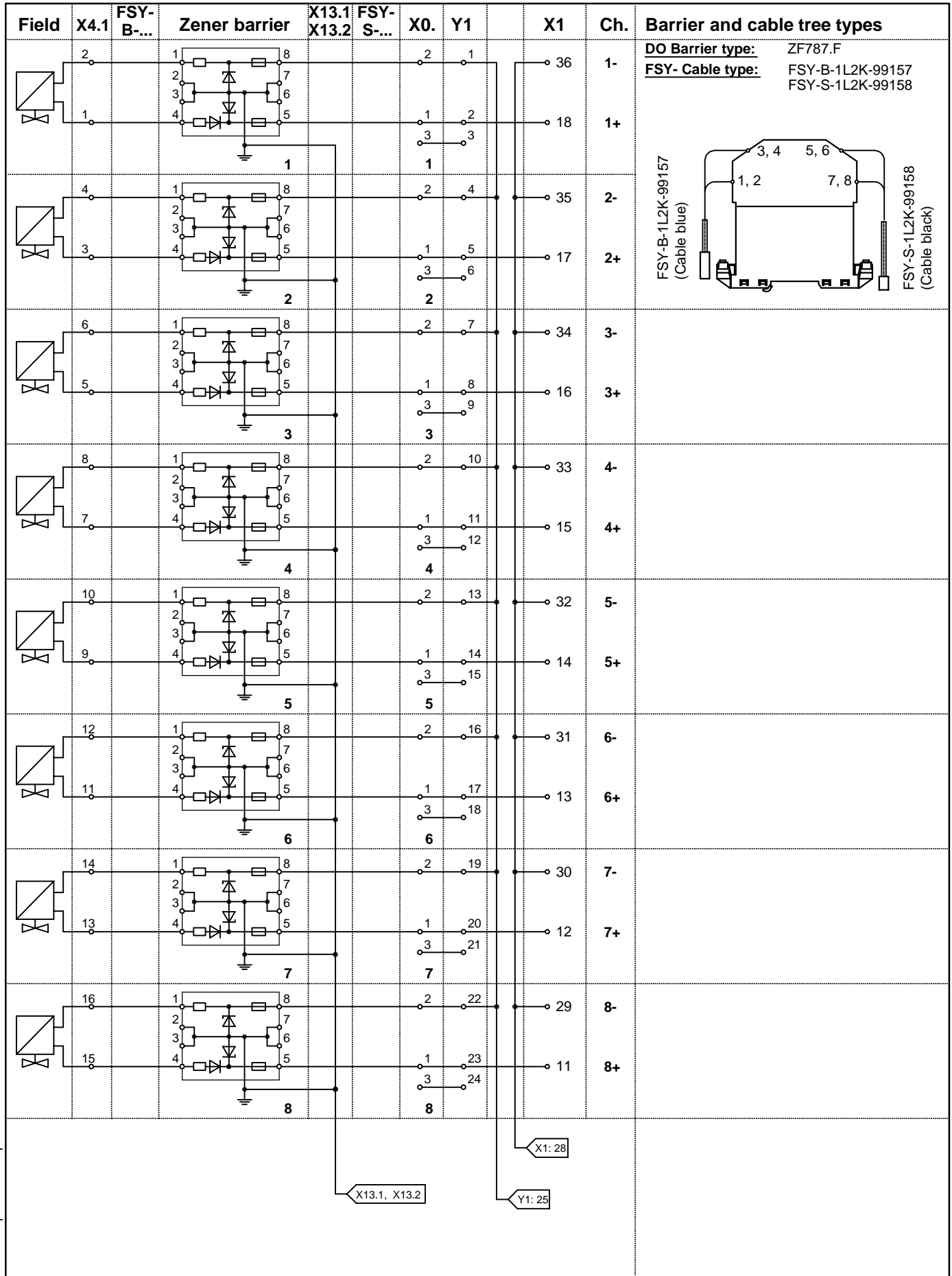


Name	Note
X1	37 pin male system connector D-SUB
----	----
X4.1, X4.2	16 pin screw terminal with device to hold 8 connectors (2 pin combicon)
X13.3.1 16	16 pin shielding block terminal
X13.1 X13.2	Screw terminals PA
X0.1 16	3 pin male terminal to connect the cable to zener barrier
----	----

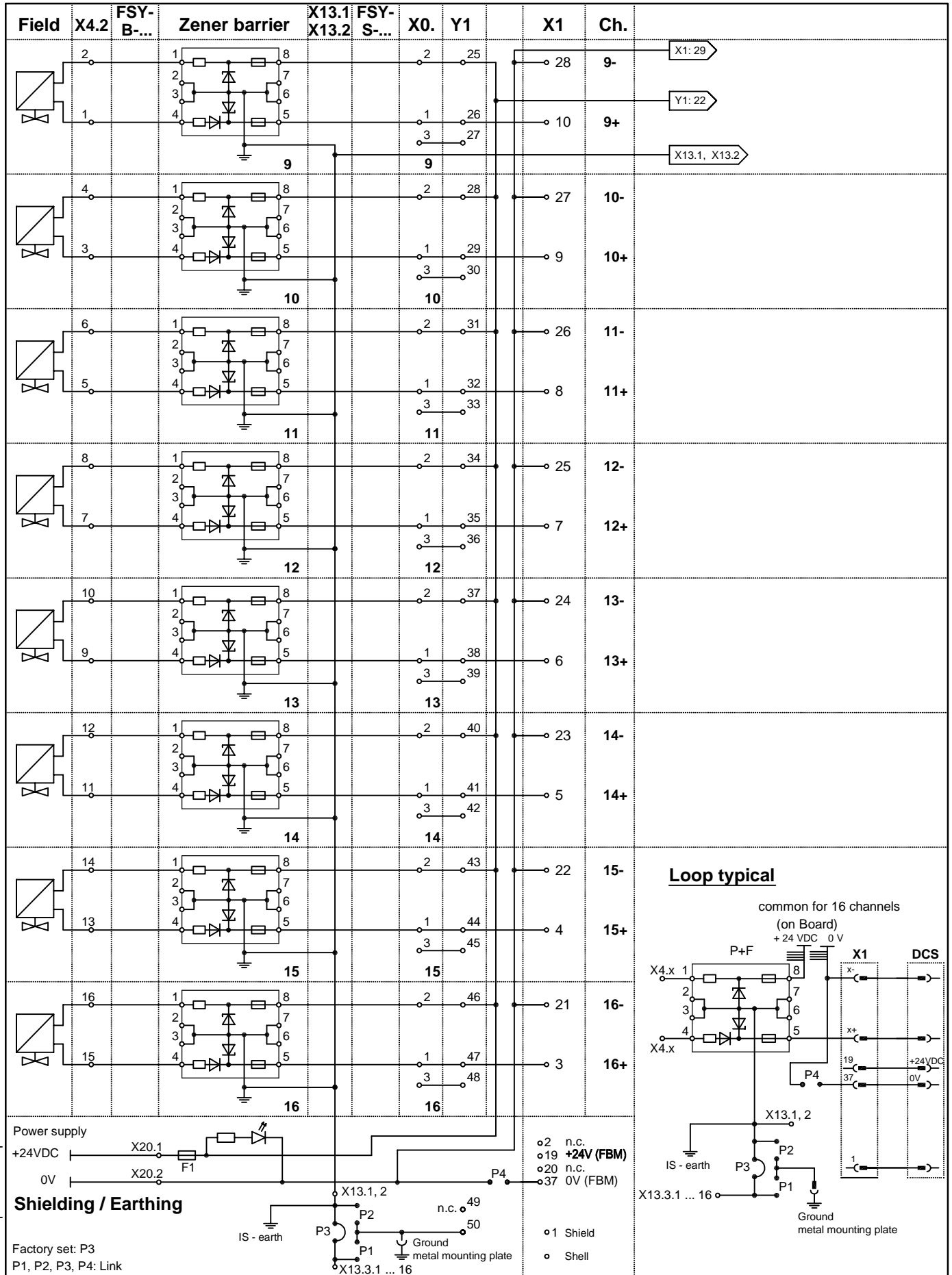
Ordering information:		ISTA-242-ZB87F-99140
Basic components:		Description
16 pieces:	ZF787.F (DO)	Zener Barrier (function)
1 piece:	MB-FO-FBM2422B-99141	Motherboard without Zener barriers
composed by:		
1 piece:	MB-UZ16-Y99129	Motherboard without Zener barriers, adapter board, FSU cable tree and Label carrier
1 piece:	AP-PF-Y99142	Adapter board
1 piece:	KFD0-LC1-16Z-99133	Label carrier 1
16 pieces:	FSY-B-1L2K-99157	Cable tree connection Zener Barrier-Motherboard
16 pieces:	FSY-S-1L2K-99158	Cable tree connection Zener Barrier-Motherboard

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 PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Output 16 channels ISTA-242-ZB87F	25.10.99	vB	vB	SB/vB	
		Date	S	TZ	Off. in ch.	contr. techn.
		Dept.: PA-VP	Nr. 36-7137			
		Up date: vB/Bro 29.04.04	Replaces: xxxxx / 36-xxxx			Sheet 1
		MB-UZ16	Scale:	1 : 2	of 3	



PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit		30.10.99	vB	vB	Sb/vB		
	Digital Output		Date	S	TZ	Off. in ch.	contr. techn.	
	16 channels		Update:	29.04.04	Replaces: xxxxx / 36-xxxx		contr. Norm	Sheet 2
	ISTA-242-ZB87F		MB-UZ16	Scale:			of	3



30.10.99	vB	vB	Sb/vB	
Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-7137			
Update: 29.04.04	vB/Bro	Replaces: xxxxx / 36-xxxx	Sheet 3	
MB-UZ16	Scale:	of 3		



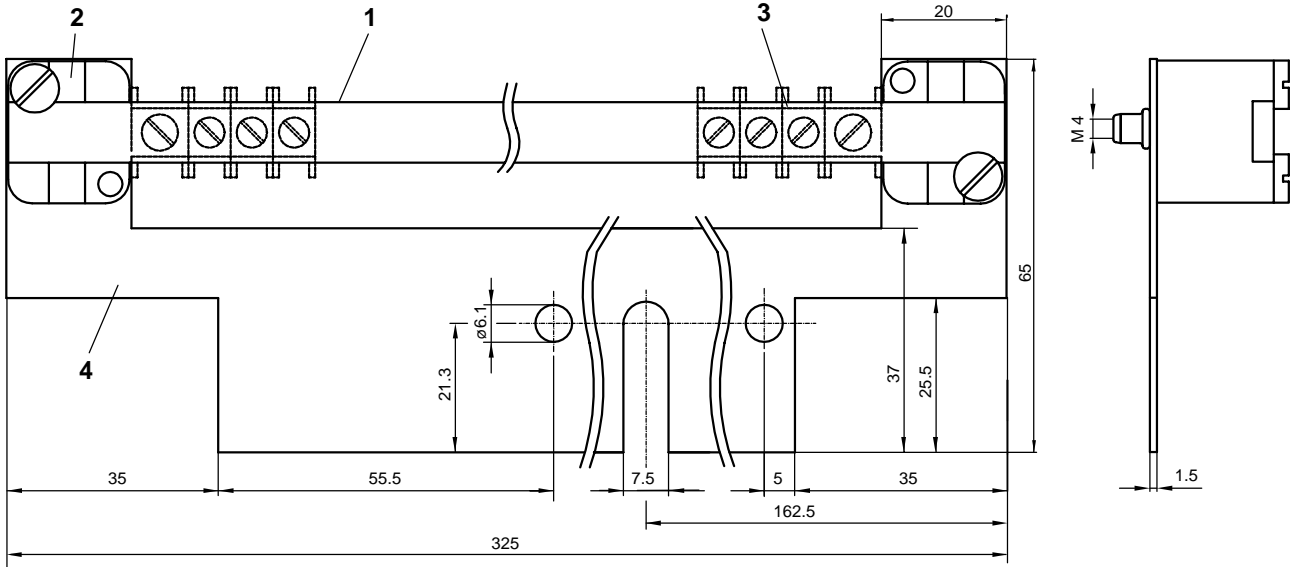
Motherboard unit
 Digital Output
 16 channels
ISTA-242-ZB87F

10. Accessories

	Page
Shielding bushbar	10- 1
Label Carrier	10- 2
Cable tree for Zener Barrier ZF787.F	10- 3
Cable tree for Zener Barrier ZF960.F	10- 4
Cable tree for Zener Barrier ZB954	10- 5

Notes:

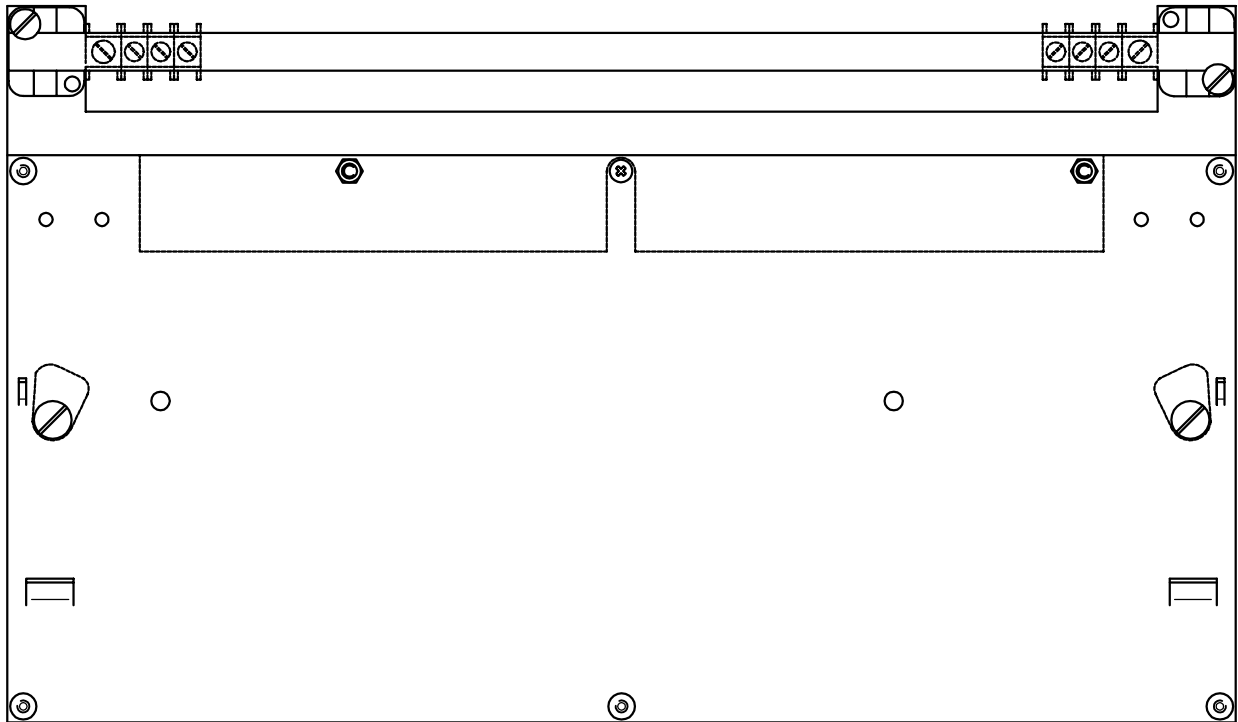
Shielding busbar



	Name	Product
1	Neutral busbar NLS-CU 3-10 0402174	Phoenix
2	Support AB/SS 0404428	Phoenix
3	Terminal block AK16 0404033	Phoenix
4	Mounting part	Fa. Müller


Scale: 1 : 1,25

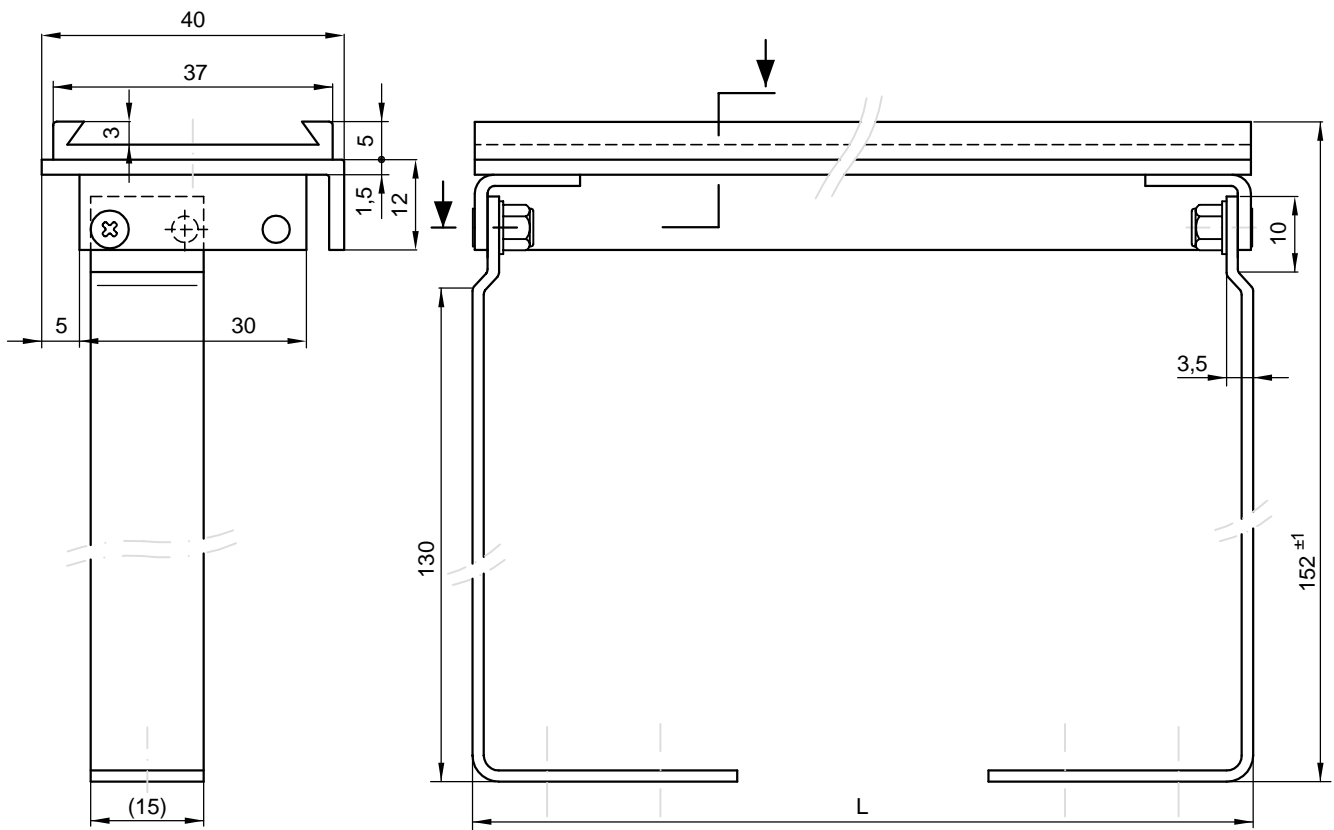
Mounting Aid



Scale: 1 : 2

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 PEPPERL+FUCHS Mannheim-Schönau	Shielding busbar for Motherboard 16 K-Module MBE-X-.....	07.12.00	KT	vB	Sb/vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA - VP	No. 36-9144			
		vB/Bro up date: 29.04.04	Replaces: -			Sheet 1
		Scale: - : -			of 1	




Customer marking area:
pro module 29mm x 20mm

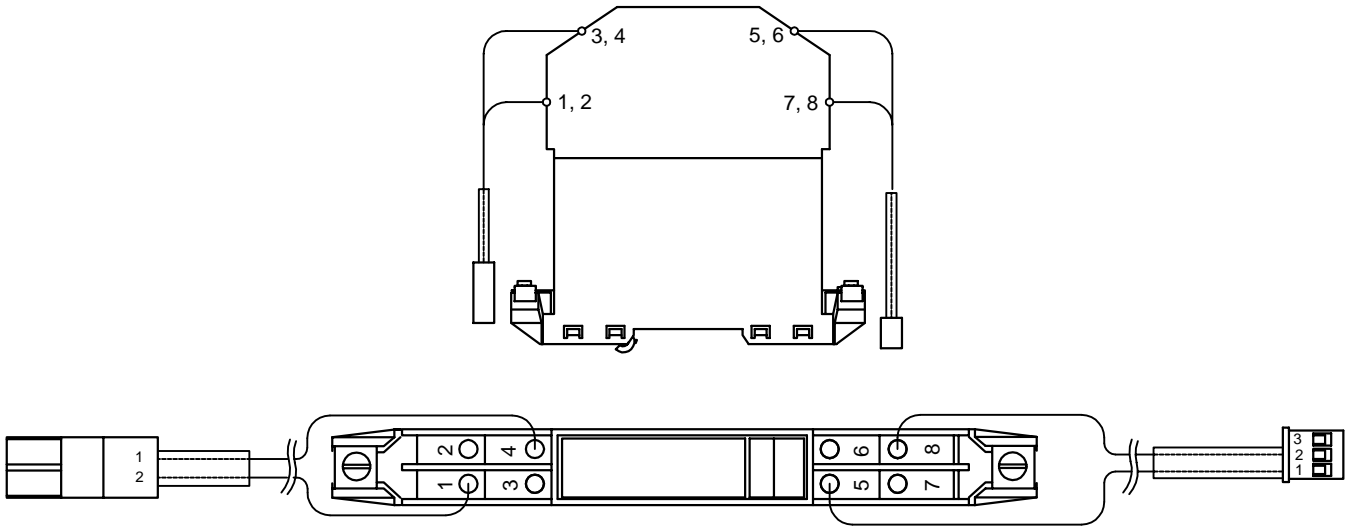
Label Carrier KFD0-LC-...

L	d	Part.-No.	Name	Note
12,5 cm	M3	99110	KFD0-LC1-4M	4 modules (standard ex stock)
16,5 cm	M3	99143	KFD0-LC1-8M	8 modules (standard ex stock)
24,5 cm	M3	102481	KFD0-LC1-12M	12 modules (standard ex stock)
32,5 cm	M3	99144	KFD0-LC1-16M	16 modules (standard ex stock)
17 cm	M3	99125	KFD0-LC1-8Z	8 Z-Barriers (standard ex stock)
27 cm	M3	99133	KFD0-LC1-16Z	16 Z-Barriers (standard ex stock)
34 cm	M3	102471	KFD0-LC1-32Z	32 Z-Barriers (standard ex stock)
up to 50 cm	ø 5.5	108878	KFD0-LC1-x-xxxxx	*) customized (XXX = length in cm)
51 to 100 cm	ø 5.5	108879	KFD0-LC1-x-xxxxx	*) customized (XXX = length in cm)

*) in case of order; delivery time 2-4 weeks

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 PEPPERL+FUCHS Mannheim-Schönau	Label Carrier Label Carrier	09.04.01	xx	vB	Sb/vB		
		Date	S	TD	Off. in ch.	contr. techn.	contr. Norm
		Dept.:	PA-VP		No. 36-9146A		
		Up date:	15.07.04		Replaces: xxxxxx / 36-xxxx	Sheet 1	
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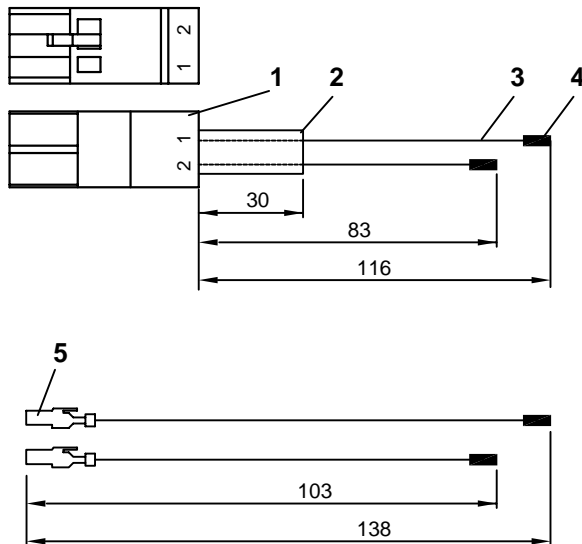


Hazardous Area (blue)

Safe Area (black)

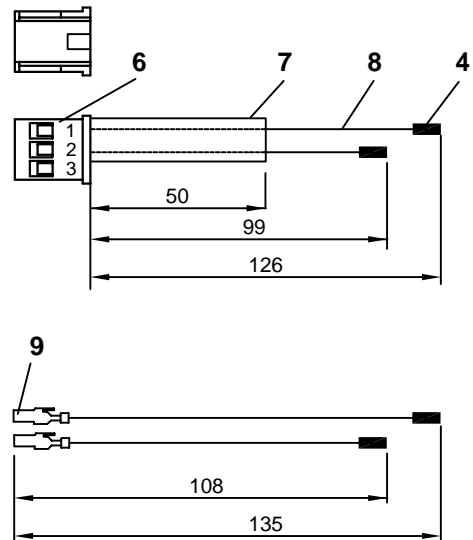
FSY-B-1L2K-99157

Part.No.: 99157



FSY-S-1L2K-99158

Part.No.: 99158




FSY-B-1L2K-99157 Part. No. 99157

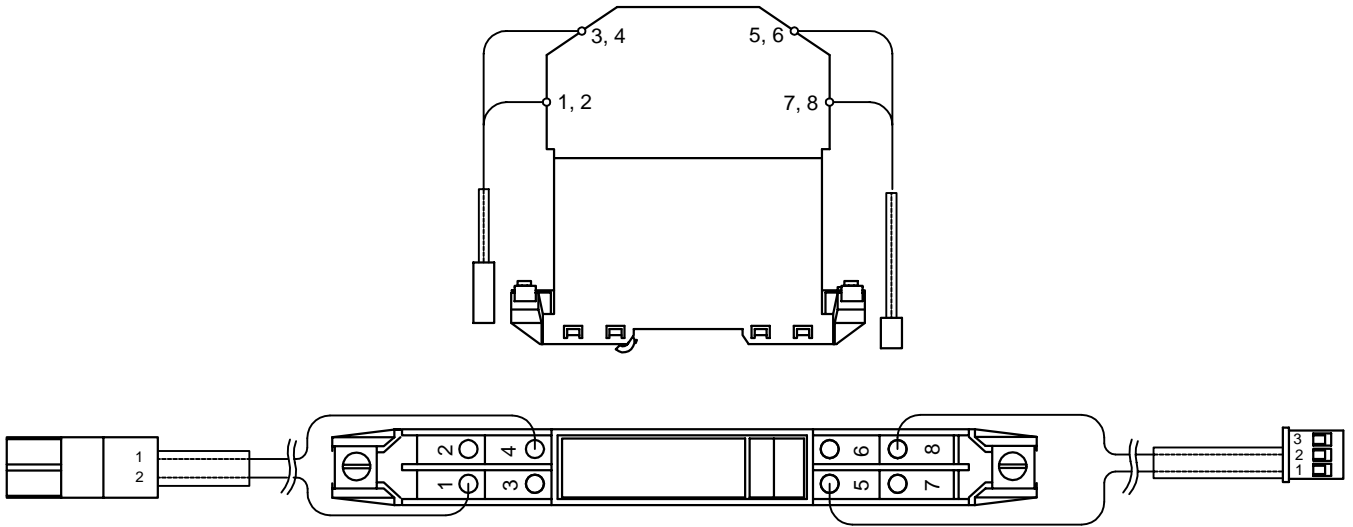
Name	Type
1 2 pin female connector housing	MSTBC 2,5/3-ST-5,08
2 sleeving blue	---
3 Wire AWG 22 blue	UL 1007 #22
4 Ferrules	---
5 Crimp contact	Junior-power-timer 967259-1

FSY-S-1L2K-99158 Part. No. 99158

Name	Type
6 3 pin female connector housing	JST XAP-03V-1
7 sleeving black	---
8 Wire AWG 22 black	UL 1007 #22
9 Crimp contact	SXA-001T-P0.6

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	PEPPERL+FUCHS Mannheim-Schönau	Cable tree for Zener Barriers Type Z787.F-99159	24.11.99	Dn	vB	Sb/vB		
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP		No. 36-9145			
up date: 20.04.04		vB/Bro Replaces: xxxxxx / 36-xxxx		Sheet 1				
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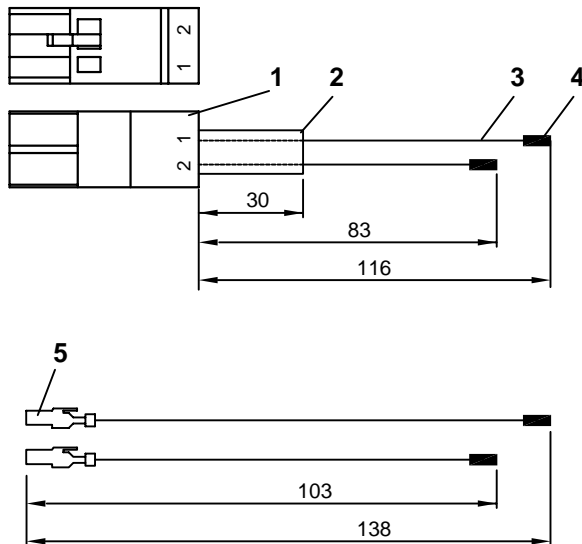


Hazardous Area (blue)

Safe Area (black)

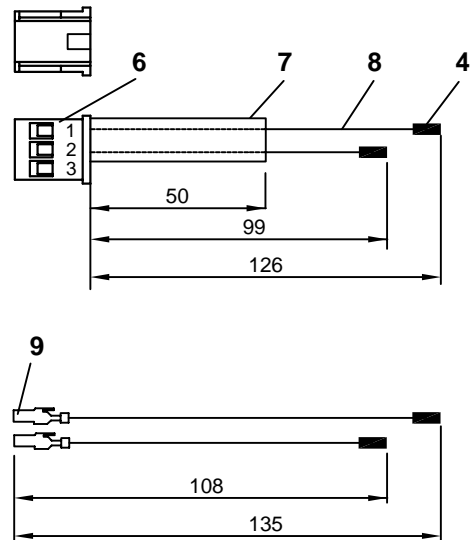
FSY-B-1L2K-99157

Part.No.: 99157



FSY-S-1L2K-99158


Part.No.: 99158

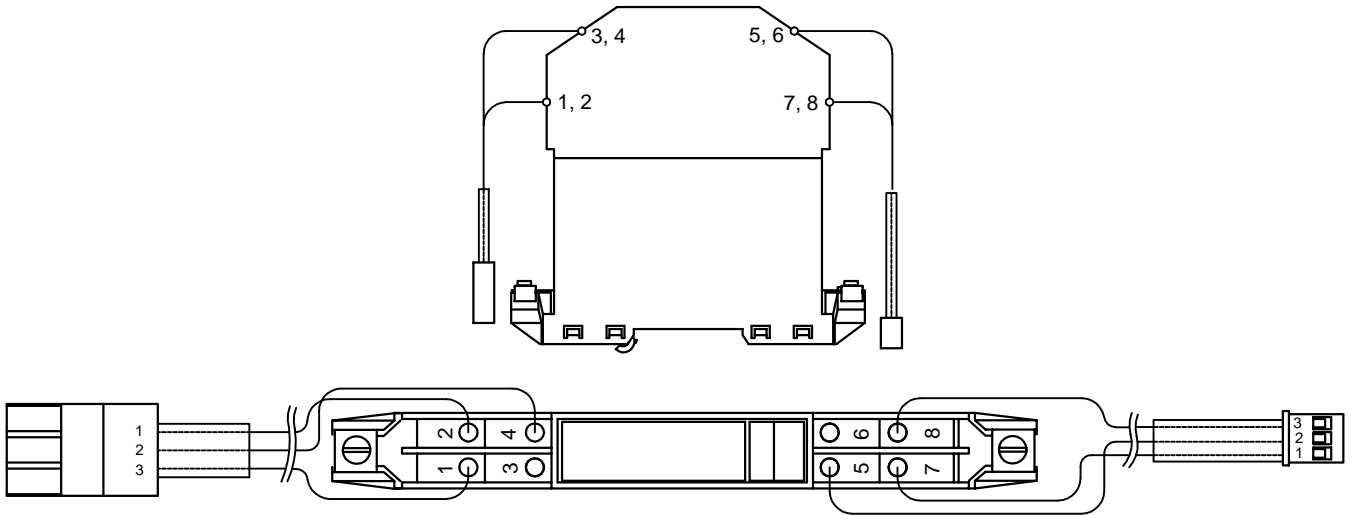


FSY-B-1L2K-99157		Part. No. 99157
Name	Type	
1	2 pin female connector housing	MSTBC 2,5/3-ST-5,08
2	sleeving blue	---
3	Wire AWG 22 blue	UL 1007 #22
4	Ferrules	---
5	Crimp contact	Junior-power-timer 967259-1

FSY-S-1L2K-99158		Part. No. 99158
Name	Type	
6	3 pin female connector housing	JST XAP-03V-1
7	sleeving black	---
8	Wire AWG 22 black	UL 1007 #22
9	Crimp contact	SXA-001T-P0.6

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 PEPPERL+FUCHS Mannheim-Schönau	Cable tree for Zener Barriers Type Z960.F-102458	10.09.01	KT	vB	Sb/vB	
		Date	S TZ	Off. in ch.	contr. techn.	contr. Norm
		Dept.: PA-VP	No. 36-9145			
		vB/Bro up date: 20.04.04	Replaces: xxxxxx / 36-xxxx		Sheet 4	
			Scale: -		of 5	

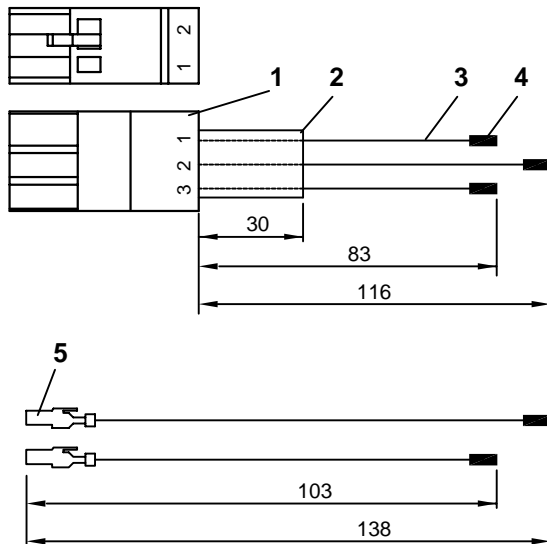


Hazardous Area (blue)

Safe Area (black)

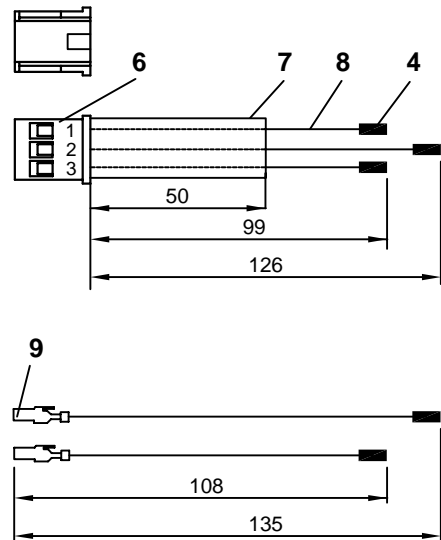
FSY-B-13K2L-114018

Part.No.: 114018



FSY-S-13K2L-114019

Part.No.: 113019



FSY-B-13K2L-114018		Part. No. 114018
Name	Type	
1	2 pin female connector housing	MSTBC 2,5/3-ST-5,08
2	sleeving blue	---
3	Wire AWG 22 blue	UL 1007 #22
4	Ferrules	---
5	Crimp contact	Junior-power-timer 967259-1

FSY-S-13K2L-114019		Part. No. 114019
Name	Type	
6	3 pin female connector housing	JST XAP-03V-1
7	sleeving black	---
8	Wire AWG 22 black	UL 1007 #22
9	Crimp contact	SXA-001T-P0.6

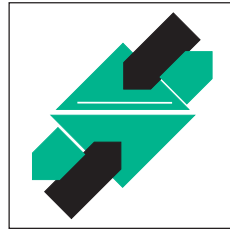
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	PEPPERL+FUCHS Mannheim-Schönau	Cable tree for Zener Barriers Typ ZB954.F-102457	11.09.01	Dn	vB	Sb/vB		
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
			Dept.: PA-VP		No. 36-9145			
			vB/Bro up date: 20.04.04		Replaces: xxxxxxx / 36-xxxx		Sheet 5	
		Scale: -		of 5				

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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