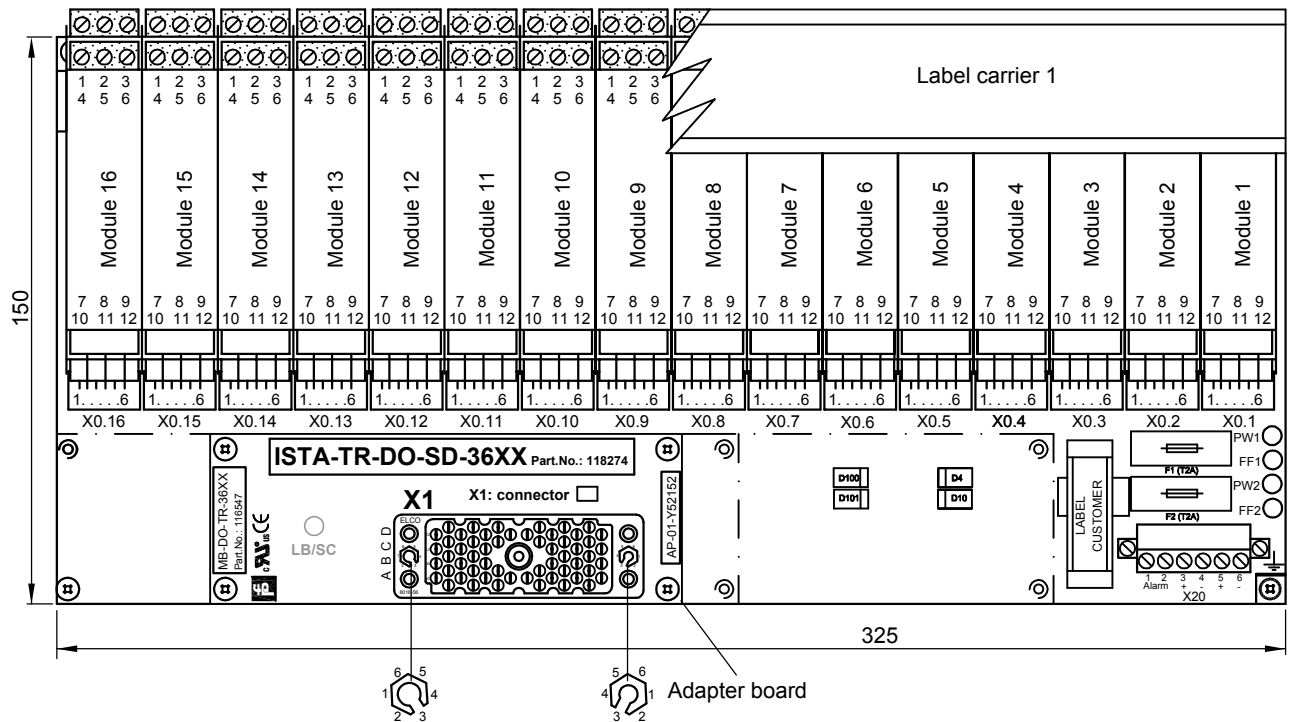


Intrinsic Safety Termination Assemblies With Galvanic Isolators

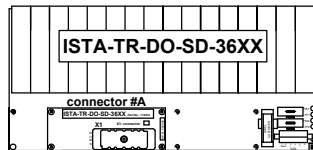
Triconex • I/O card number • Signal type	P+F Motherboard • Order name • Part No. • Drawing No.	Description • Module • Motherboard • Dimensions
3503E / 3505E (16 + 16 DI)	• ISTA-TR-DI-SH-350X-118289 • Part No. 118289 • Drawing No. 36-7443	<u>Module:</u> • type KFD2-SH-Ex1.T.OP, single channel, (DI-Fail Safe) <u>Motherboard:</u> • 16 modules (16 channels) • 1 ELCO 56 pin, female system connector • LB/SC monitoring on separate screw terminal <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
	• ISTA-TR-DI-SRLB-350X-122110 • Part No. 122110 • Drawing No. 36-7417	<u>Module:</u> • type KFD2-SR2-Ex1.W.LB, single channel, (DI) <u>Motherboard:</u> • 16 modules (16 channels) • 1 ELCO 56 pin, female system connector • LB/SC monitoring on separate screw terminal <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
	• ISTA-TR-DI-SR2-350X-118271 • Part No. 118271 • Drawing No. 36-7413	<u>Module:</u> • type KFD2-SR2-Ex2.2S, dual channel, (DI) <u>Motherboard:</u> • 16 modules (16 + 16 channels) • 2 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
	• ISTA-TR-DI-SOT2-350X-118272 • Part No. 118272 • Drawing No. 36-7169	<u>Module:</u> • type KFD2-SOT2-Ex2, dual channel, (DI) <u>Motherboard:</u> • 16 modules (16 + 16 channels) • 2 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
3504E / 3564 (32 + 32 DI)	• ISTA-TR-DI-SR2-35XX-118278 • Part No. 118278 • Drawing No. 36-7361	<u>Module:</u> • type KFD2-SR2-Ex2.2S, dual channel, (DI) <u>Motherboard:</u> • 16 modules (32 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
	• ISTA-TR-DI-SOT2-35XX-118279 • Part No. 118279 • Drawing No. 36-7188	<u>Module:</u> • type KFD2-SOT2-Ex2, dual channel, (DI) <u>Motherboard:</u> • 16 modules (32 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
3511 (16 DI)	• ISTA-TR-DI-SOT-3511-183387 • Part No. 183387 • Drawing No. 36-7697	<u>Module:</u> • type KFD2-SOT2-Ex1.LW, single channel, (DI) <u>Motherboard:</u> • 8 modules (16 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 165x150x150 mm
3604E 3624 (16 DO)	• ISTA-TR-DO-SD-36XX-118274 • Part No. 118274 • Drawing No. 36-7430	<u>Module:</u> • type KFD2-SD-Ex1.48..., single channel, (DO) <u>Motherboard:</u> • 16 modules (16 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm
	• ISTA-TR-DO-SL2-36XX-118273 • Part No. 118273 • Drawing No. 36-7363	<u>Module:</u> • type KFD2-SL2-Ex2.B, dual channel, (DO) <u>Motherboard:</u> • 8 modules (16 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 165x150x150 mm
	• ISTA-TR-DO-SL2-36XX-118288 • Part No. 118288 • Drawing No. 36-7358	<u>Module:</u> • type KFD2-SL2-Ex2.B, dual channel, (DO) <u>Motherboard:</u> • 8 modules (16 channels) • 1 ELCO 56 pin, female system connector • LB/SC monitoring <u>Dimensions (wxhxd) :</u> • 165x150x150 mm
3664 (16 + 16 DO)	• ISTA-TR-DO-SD-36XX-118274 • Part No. 118274 • Drawing No. 36-7430	<u>Module:</u> • type KFD2-SD-Ex1.48..., single channel, (DO) <u>Motherboard:</u> • 16 modules (16 channels) • 1 ELCO 56 pin, female system connector <u>Dimensions (wxhxd) :</u> • 325x150x150 mm



APPLICATION:

TRICONEX I/O card 3604E:
16 points, non commoned

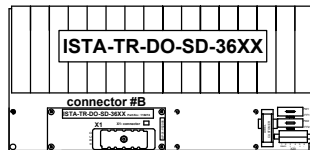
Motherboard 1: connected with connector #A
Module 1 ... 16, channels 1 ... 16



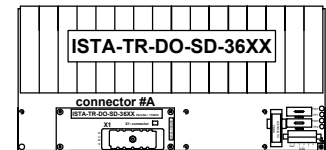
APPLICATION:

TRICONEX I/O card 3664: will be required 2 x ISTA-TR-DO-SD-36XX-118274
16 + 16 points, non commoned, diff., DC coupled

Motherboard 2: connected with connector #B
Module 1 ... 16, channels 1 ... 16



Motherboard 1: connected with connector #A
Module 1 ... 16, channels 1 ... 16

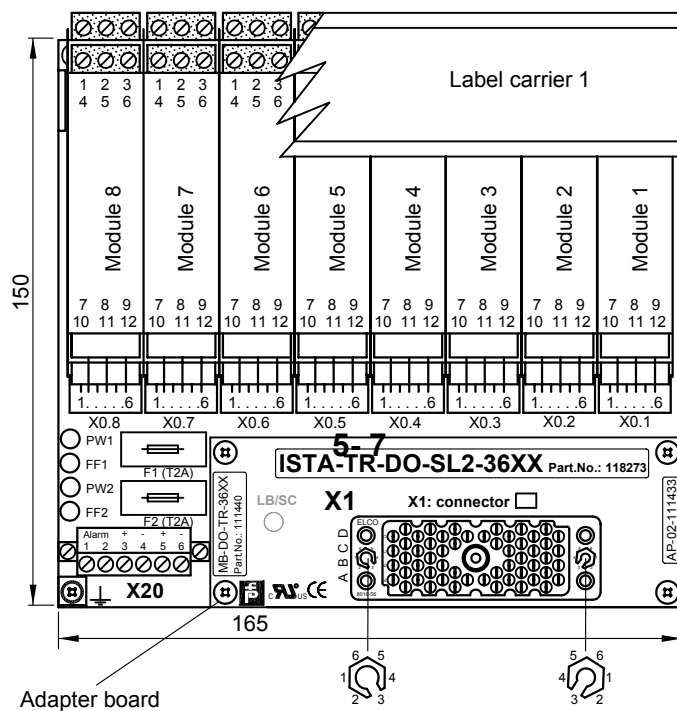


Name	Note
X1	56 pin female system connector ELCO (small key: 3, large key: 3)
----	----
X0.1 16	6 pin male terminals for cable tree FSY....
X20.3 6	Power supply screw terminals
X20.1, X20.2	Alarm screw terminal
F1, F2	Fuse
PW1, PW2, FF1, FF2	LEDs for power and power failure

Ordering information: ISTA-TR-DO-SD-36XX-118274

Basic components:	Description
16 pieces: KFD2-SD-Ex1.48... (DO)	KF-Module type (function)
1 piece: MB-DO-TR-36XX-116547	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-Y52152	Adapter board
1 piece: KFD0-LC1-16M-99144	Label carrier 1
16 pieces: FSY-L450-98833	Cable tree connection KF-Module-Motherboard

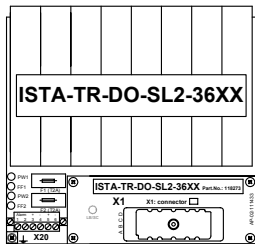
		21.03.02		KT	vB	vB/Sb	
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	PEPPERL+FUCHS Mannheim-Schöna	Motherboard unit Digital Output 16 channels ISTA-TR-DO-SD-36XX	Dept.: PA-VP		Nr. 36-7430		
			Up date: 22.03.04		Replaces: 116547 / 36-7621		Sheet 1
			MB-16U5L		Scale: 1 : 2 (1 : 8)		of 3



APPLICATION:

TRICONEX I/O card 3604E 16 points, non commoned

Motherboard 1: connected with connector #A
Module 1 ... 8, channels 1 ... 16



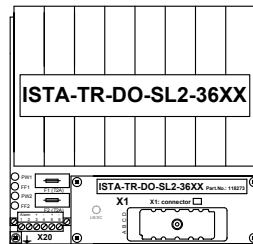
connector #A

APPLICATION:

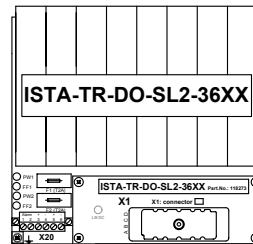
TRICONEX I/O card 3664: will be required 2 x ISTA-TR-DO-SL2-36XX-118273 32 points, non commoned

Motherboard 2: connected with connector #B
Module 1 ... 8, channels 17 ... 32

Motherboard 1: connected with connector #A
Module 1 ... 8, channels 1 ... 16



connector #B



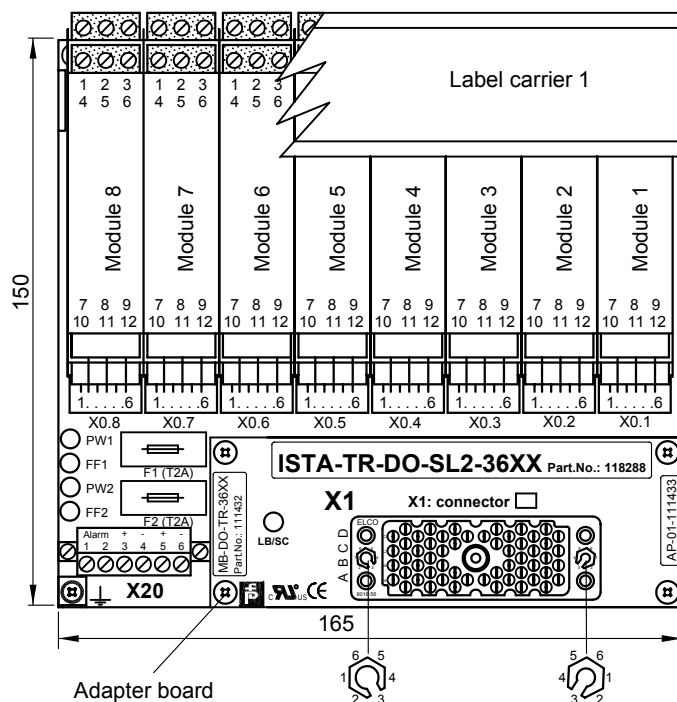
connector #A

Name	Note
X1	56 pin female system connector ELCO (small key: 3, large key: 3)
----	----
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-TR-DO-SL2-36XX-118273

Basic components:	Description
8 pieces: KFD2-SL2-Ex2.B (DO)	KF-Module type (function)
1 piece: MB-DO-TR-36XX-111440	Motherboard without modules
composed by:	
1 piece: MB-8U2-Y97680	Motherboard without modules, adapter board, FSU cable tree and Label carrier
1 piece: AP-02-111433	Adapter board
1 piece: KFD0-LC1-8M-99143	Label carrier 1
8 pieces: FSU-L456-98837	Cable tree connection KF-Module-Motherboard

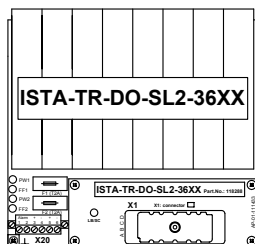
			21.03.02		KT	vB	vB/Sb	
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Output 16 channels ISTA-TR-DO-SL2-36XX	Dept.: PA-VP		Nr. 36-7363B			
			vB Up date: 04.05.07		Replaces: XXXXXX/ 36-XXXX		Sheet 1	
			MB-8U2		Scale: 1 : 2 (1 : 5)		of 2	



APPLICATION:

TRICONEX I/O card 3604E 16 points, non commoned

Motherboard 1: connected with connector #A
Module 1 ... 8, channels 1 ... 16



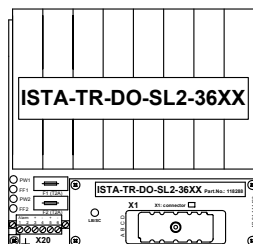
connector #A

APPLICATION:

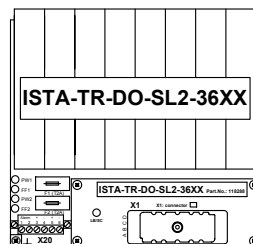
TRICONEX I/O card 3664: will be required 2 x ISTA-TR-DO-SL2-36XX-118288 32 points, non commoned

Motherboard 2: connected with connector #B
Module 1 ... 8, channels 17 ... 32

Motherboard 1: connected with connector #A
Module 1 ... 8, channels 1 ... 16



connector #B



connector #A

Name	Note
X1	56 pin female system connector ELCO (small key: 3, large key: 3)
-----	-----
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
Power Rail	PR-03 (with 3 conductors)

Ordering information: ISTA-TR-DO-SL2-36XX-118288

Basic components:	Description
8 pieces: KFD2-SL2-Ex2 (DO)	KF-Module type (function)
1 piece: MB-DO-TR-36XX-111432	Motherboard without modules
composed by:	
1 piece: MB-8U2-Y97680	Motherboard without modules, adapter board, FSY cable tree and Label carrier
1 piece: AP-01-111433	Adapter board
1 piece: KFD0-LC1-8M-99143	Label carrier 1
8 pieces: FSY-L456-98837	Cable tree connection KF-Module-Motherboard

			21.03.02		KT	vB	vB/Sb	
			Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	PEPPERL+FUCHS Mannheim-Schönau	Motherboard unit Digital Output 16 channels - LB/SC monitoring ISTA-TR-DO-SL2-36XX	Dept.: PA-VP		Nr. 36-7358A			
			vB Up date: 04.05.07		Replaces: XXXXXX/ 36-XXXX		Sheet 1	
			MB-8U2		Scale: 1 : 2, 1 : 5		of 2	

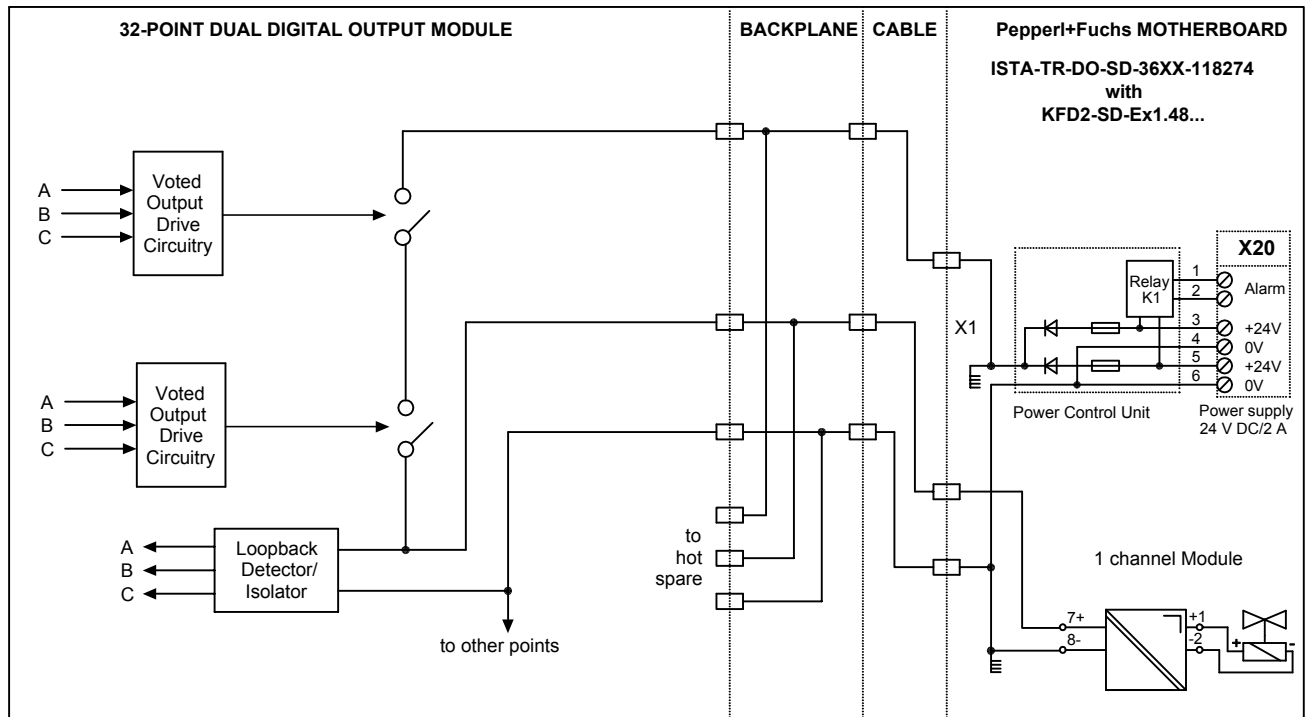
6. 3664 Application

(16 + 16 channels DO)

	Page
Simplified schematic 3664	6- 1
2 x Motherboard ISTA-TR-DO-SD-36XX-118274	6- 2
Part No.:	118274
Function:	Digital Output
Channels:	16
System cable:	(ELCO connector)
KF- Module:	KFD2-SD-Ex1.48... (single channel)
Simplified schematic:	drawing no. 36-9286
Wiring Diagram:	drawing no. 36-7430
Simplified schematic 3664	6- 5
2 x Motherboard ISTA-TR-DO-SL2-36XX-118273	6- 6
Part No.:	118273
Function:	Digital Output
Channels:	16
System cable:	(ELCO connector)
KF- Module:	KFD2-SL2-Ex2.B (dual channel)
Simplified schematic:	drawing no. 36-9287
Wiring Diagram:	drawing no. 36-7363
2 x Motherboard ISTA-TR-DO-SL2-36XX-118288	6- 8
Part No.:	118288
Function:	Digital Output
Channels:	16
System cable:	(ELCO connector)
KF- Module:	KFD2-SL2-Ex2 (dual channel)
Simplified schematic:	drawing no. 36-9287
Wiring Diagram:	drawing no. 36-7358

3664 DIGITAL OUTPUT MODULE

Simplified schematic of a typical 32-point commoned dual DC digital output module with self protection
(1 of 32 points shown)



Pin assignment of connector #A (56 pin ELCO female)

Pin	AA	KK	LL	z	DD	EE	p	u	v	h	k	l	e	a
Signal	PWR1	LOAD1	RTN1	PWR2	LOAD2	RTN2	PWR3	LOAD3	RTN3	PWR4	LOAD4	RTN4	PWR5	LOAD5
Pin	b	W	R	S	L	E	F	M	A	B	BB	NN	MM	CC
Signal	RTN5	PWR6	LOAD6	RTN6	PWR7	LOAD7	RTN7	PWR8	LOAD8	RTN8	PWR9	LOAD9	RTN9	PWR10
Pin	JJ	HH	t	y	x	j	n	m	f	d	c	Z	V	U
Signal	LOAD10	RTN10	PWR11	LOAD11	RTN11	PWR12	LOAD12	RTN12	PWR13	LOAD13	RTN13	PWR14	LOAD14	RTN14
Pin	P	K	J	N	D	C	T	H	w	FF	r	s	X	Y
Signal	PWR15	LOAD15	RTN15	PWR16	LOAD16	RTN16	CGND	CGND	CGND	CGND	**	**	**	**

Pin assignment of connector #B (56 pin ELCO female)

Pin	AA	KK	LL	z	DD	EE	p	u	v	h	k	l	e	a
Signal	PWR17	LOAD17	RTN17	PWR18	LOAD18	RTN18	PWR19	LOAD19	RTN19	PWR20	LOAD20	RTN20	PWR21	LOAD21
Pin	b	W	R	S	L	E	F	M	A	B	BB	NN	MM	CC
Signal	RTN21	PWR22	LOAD22	RTN22	PWR23	LOAD23	RTN23	PWR24	LOAD24	RTN24	PWR25	LOAD25	RTN25	PWR26
Pin	JJ	HH	t	y	x	j	n	m	f	d	c	Z	V	U
Signal	LOAD26	RTN26	PWR27	LOAD27	RTN27	PWR28	LOAD28	RTN28	PWR29	LOAD29	RTN29	PWR30	LOAD30	RTN30
Pin	P	K	J	N	D	C	T	H	w	FF	r	s	X	Y
Signal	PWR31	LOAD31	RTN31	PWR32	LOAD32	RTN32	CGND	CGND	CGND	CGND	**	**	**	**

** not used

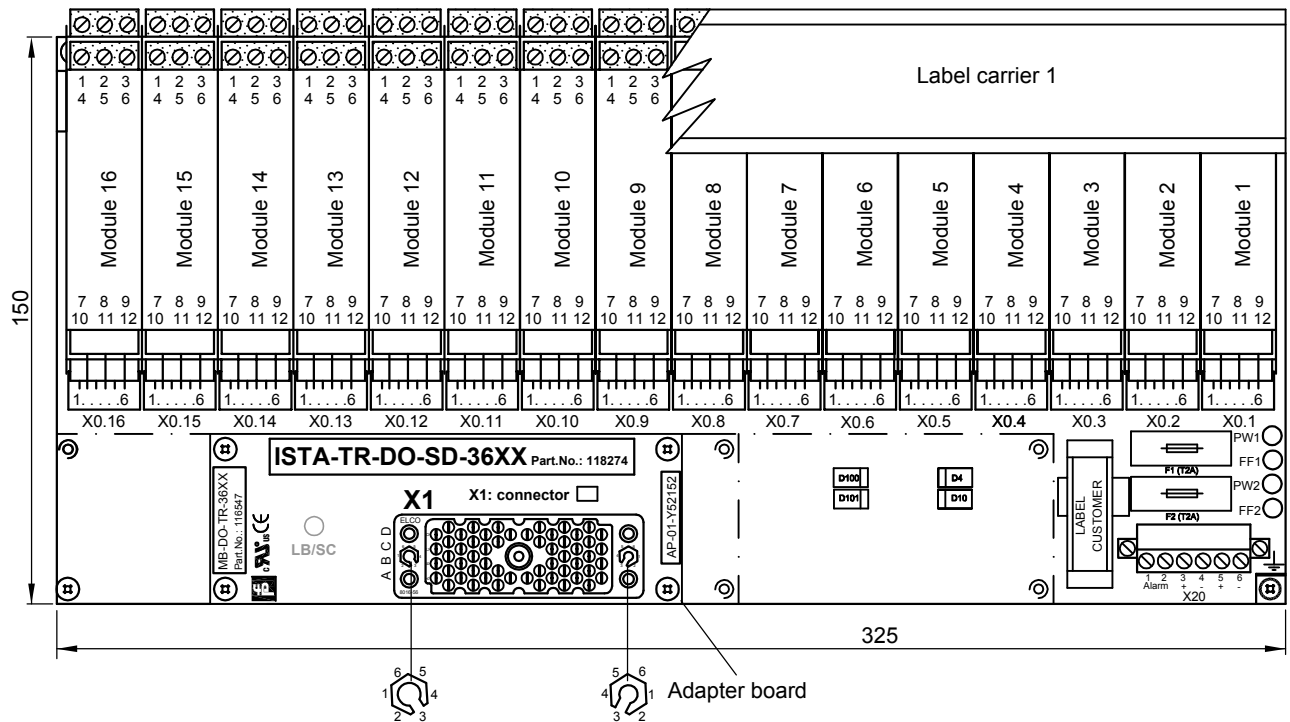
CGND is the chassis ground

21.07.99		AJ	AJ	- -	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-9286				
vB/Bro	Replaces: XXXXX / 36-XXXX				
Up date: 23.03.04	Sheet 1				
	Scale: - : - of 1				



PEPPERL+FUCHS
Mannheim-Schönau

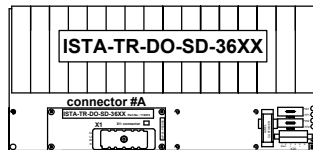
D-TR-3664



APPLICATION:

TRICONEX I/O card 3604E:
16 points, non commoned

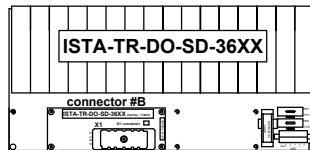
Motherboard 1: connected with connector #A
Module 1 ... 16, channels 1 ... 16



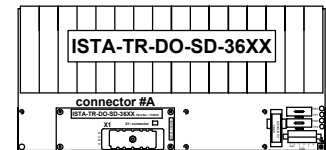
APPLICATION:

TRICONEX I/O card 3664: will be required 2 x ISTA-TR-DO-SD-36XX-118274
16 + 16 points, non commoned, diff., DC coupled

Motherboard 2: connected with connector #B
Module 1 ... 16, channels 1 ... 16



Motherboard 1: connected with connector #A
Module 1 ... 16, channels 1 ... 16



Name	Note
X1	56 pin female system connector ELCO (small key: 3, large key: 3)
----	----
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

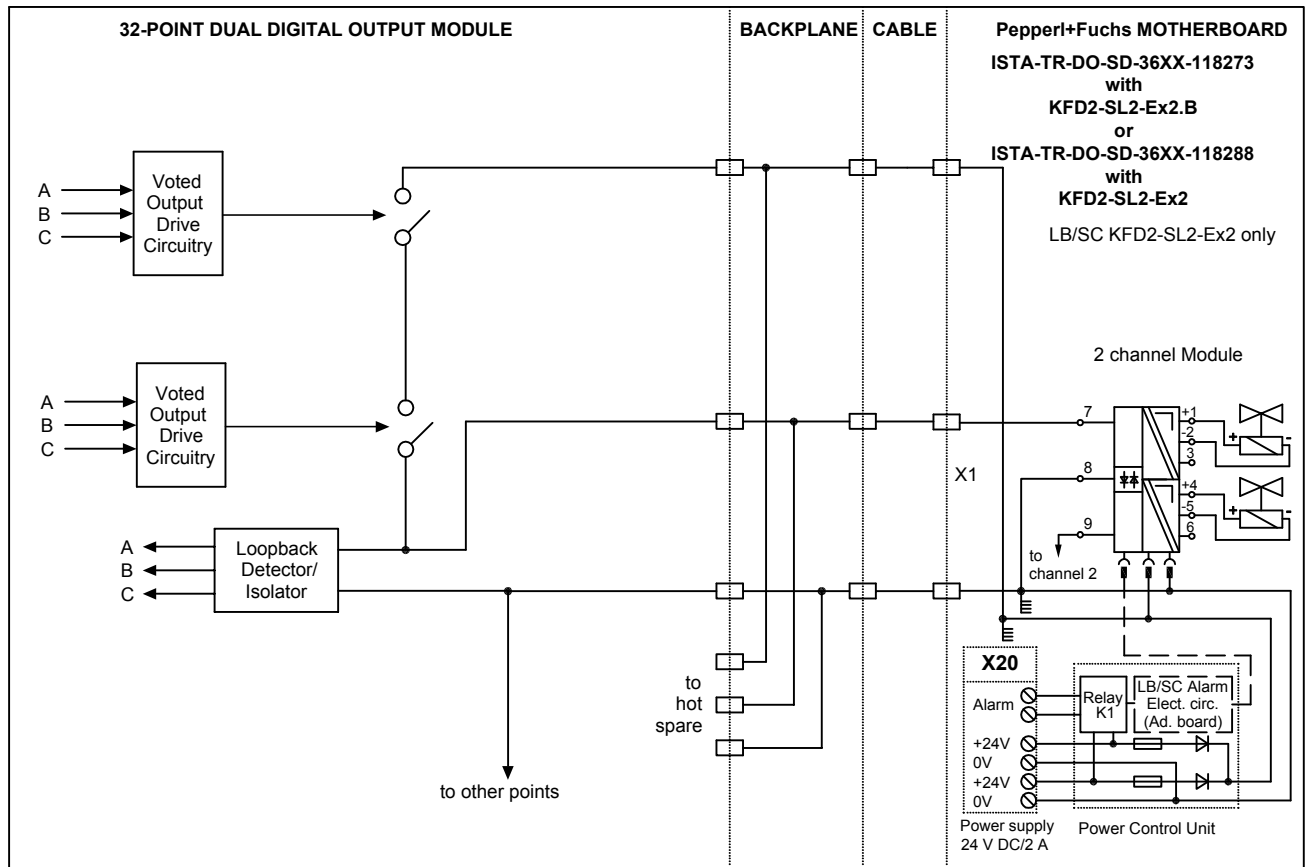
Ordering information: ISTA-TR-DO-SD-36XX-118274

Basic components:	Description
16 pieces: KFD2-SD-Ex1.48... (DO)	KF-Module type (function)
1 piece: MB-DO-TR-36XX-116547	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-Y52152	Adapter board
1 piece: KFD0-LC1-16M-99144	Label carrier 1
16 pieces: FSY-L450-98833	Cable tree connection KF-Module-Motherboard

		21.03.02		KT	vB	vB/Sb	
		Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
	PEPPERL+FUCHS Mannheim-Schöna	Motherboard unit Digital Output 16 channels ISTA-TR-DO-SD-36XX	Dept.: PA-VP		Nr. 36-7430		
			Up date: 22.03.04		Replaces: 116547 / 36-7621		Sheet 1
			MB-16U5L		Scale: 1 : 2 (1 : 8)		of 3

3664 DIGITAL OUTPUT MODULE

Simplified schematic of a typical 32-point commoned dual DC digital output module with self protection
(1 of 32 points shown)



Pin assignment of connector #A (56 pin ELCO female)

Pin	AA	KK	LL	z	DD	EE	p	u	v	h	k	l	e	a
Signal	PWR1	LOAD1	RTN1	PWR2	LOAD2	RTN2	PWR3	LOAD3	RTN3	PWR4	LOAD4	RTN4	PWR5	LOAD5
Pin	b	W	R	S	L	E	F	M	A	B	BB	NN	MM	CC
Signal	RTN5	PWR6	LOAD6	RTN6	PWR7	LOAD7	RTN7	PWR8	LOAD8	RTN8	PWR9	LOAD9	RTN9	PWR10
Pin	JJ	HH	t	y	x	j	n	m	f	d	c	Z	V	U
Signal	LOAD10	RTN10	PWR11	LOAD11	RTN11	PWR12	LOAD12	RTN12	PWR13	LOAD13	RTN13	PWR14	LOAD14	RTN14
Pin	P	K	J	N	D	C	T	H	w	FF	r	s	X	Y
Signal	PWR15	LOAD15	RTN15	PWR16	LOAD16	RTN16	CGND	CGND	CGND	CGND	**	**	**	**

Pin assignment of connector #B (56 pin ELCO female)

Pin	AA	KK	LL	z	DD	EE	p	u	v	h	k	l	e	a
Signal	PWR17	LOAD17	RTN17	PWR18	LOAD18	RTN18	PWR19	LOAD19	RTN19	PWR20	LOAD20	RTN20	PWR21	LOAD21
Pin	b	W	R	S	L	E	F	M	A	B	BB	NN	MM	CC
Signal	RTN21	PWR22	LOAD22	RTN22	PWR23	LOAD23	RTN23	PWR24	LOAD24	RTN24	PWR25	LOAD25	RTN25	PWR26
Pin	JJ	HH	t	y	x	j	n	m	f	d	c	Z	V	U
Signal	LOAD26	RTN26	PWR27	LOAD27	RTN27	PWR28	LOAD28	RTN28	PWR29	LOAD29	RTN29	PWR30	LOAD30	RTN30
Pin	P	K	J	N	D	C	T	H	w	FF	r	s	X	Y
Signal	PWR31	LOAD31	RTN31	PWR32	LOAD32	RTN32	CGND	CGND	CGND	CGND	**	**	**	**

** not used

CGND is the chassis ground

21.07.99		AJ	AJ	--	
Date	S	TZ	Off. in ch.	contr. techn.	contr. Norm
Dept.: PA-VP	Nr. 36-9287				
Up date: 23.03.04	Replaces: XXXXX / 36-XXXX				
	Scale: - : - of 1				



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Mannheim-Schöna

D-TR-3664