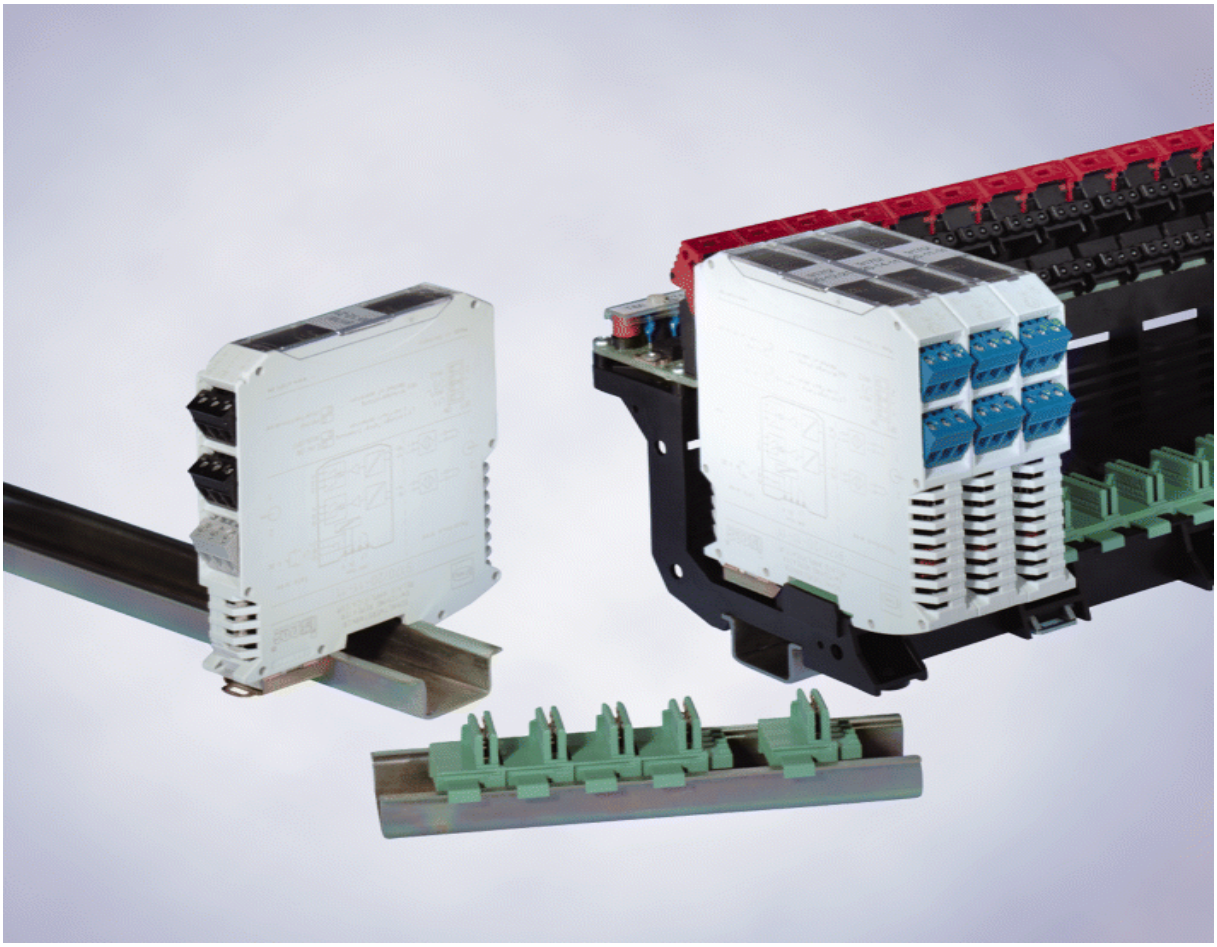


Engineering Guideline

pac-Carriers Type 9195

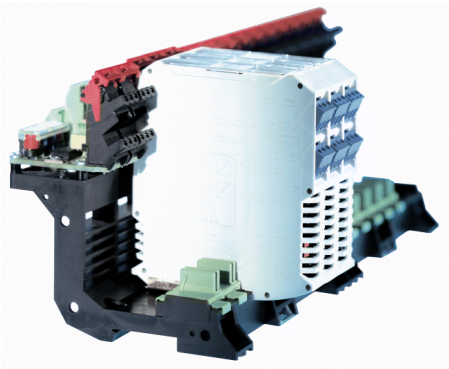
for Triconex by Schneider Electric
Tricon system

Content

pac- Carrier

9195/21A-TR1-04B7

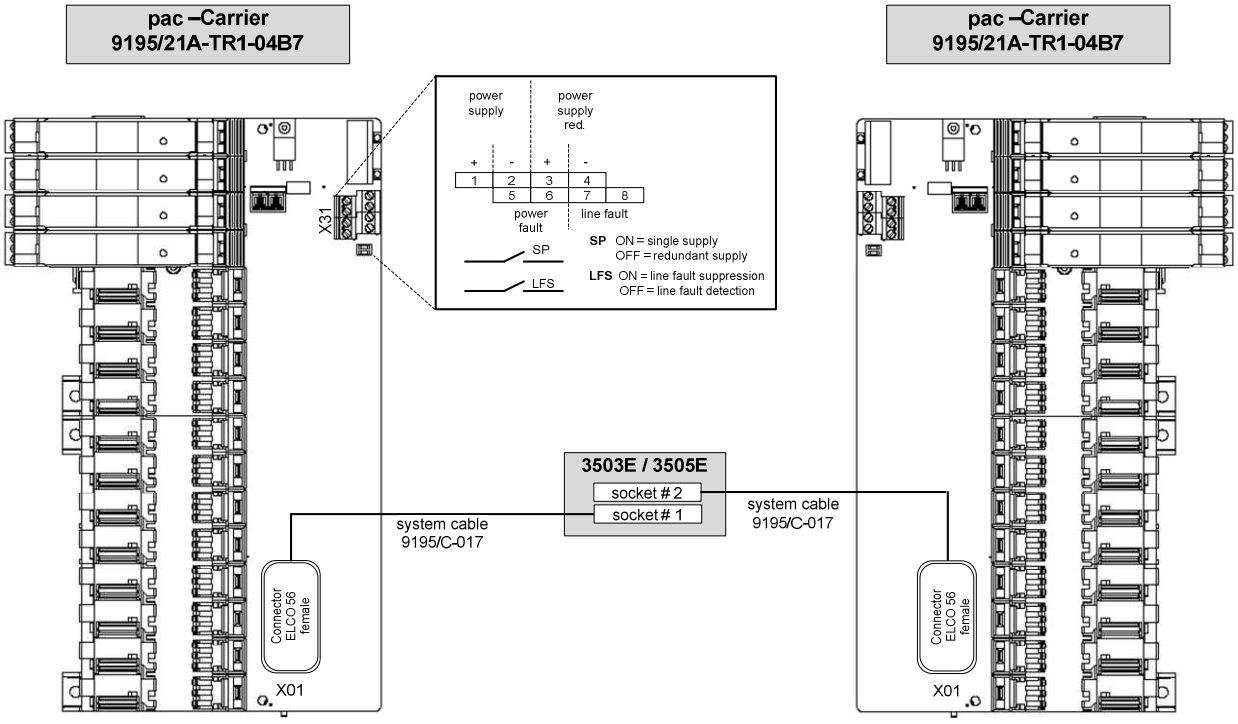
For Triconex / Version v9-v10 Tricon System / 3503E / 3505E



- Signal types: 32 x DI
- pac- Carrier for 16 modules, up to 16 signals
- ISpac isolators DI 9170/11-14-11 and 9170/11-11-11 can be used
- Customized system STAHL cables 9195/C-017 to Tricon automation systems.
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Triconex automation systems via system specific connection boards and system cables.

System overview



Selection table

ESD system				R. STAHL interface solution			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-V10 Tricon System	3503E 3505E	DI	2 x 16	9195/C-017	9170/11-14-11 9170/11-11-11	2 x 9195/21A-TR1-04B7

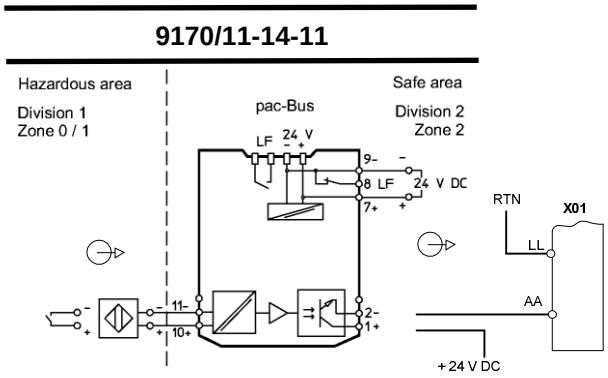
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	Ⓔx II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 3
Number of channels	16
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for single supply
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

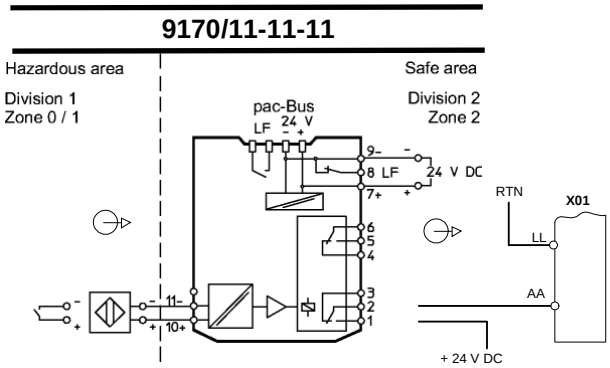
The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

Switching repeater (DI)

for NAMUR proximity switches and contacts
- electronic output



for NAMUR proximity switches and contacts
- contact output

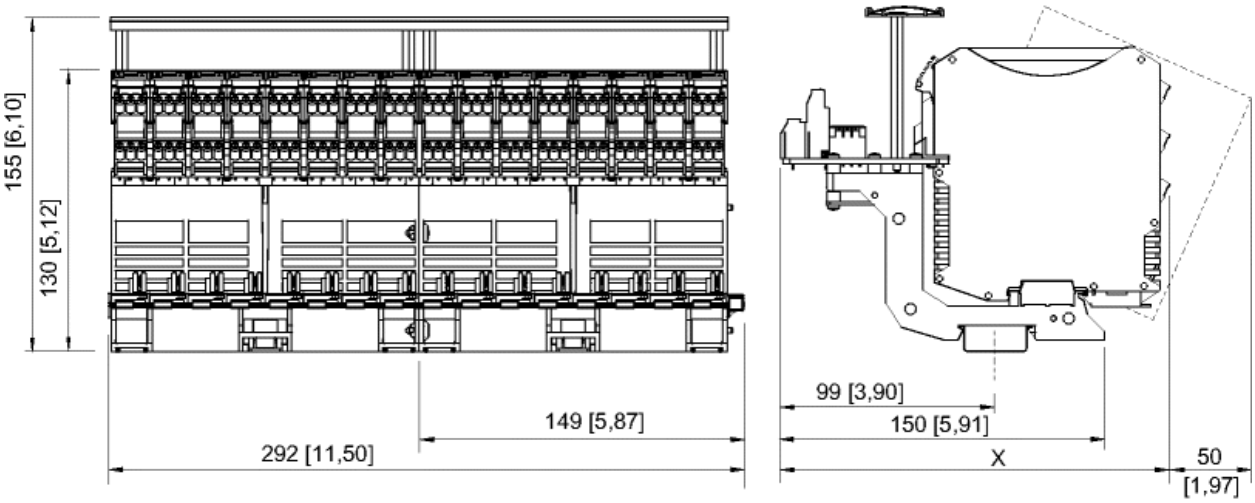


SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/21A-TR1-04B7	Backplane	3	EXIDA	STAHL 04/04-03 R002 (V1, Rev. R1.0)	91%	2.04E-05	10
9170/11-14-11	DI	2	EXIDA	STAHL 09/03-52 R019 (V2, Rev. R3)	92%	4.87E-04	5
9170/11-11-11	DI	2	EXIDA	STAHL 09/03-52 R019 (V2, Rev. R3)	78 %	6.19E-04	5

Accessories and Spare Parts			
Designation	Illustration	Description	**Order number**
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Connection list – pac-Carrier 1 and 2

Tricon Module 3503E / 3505E (DI 32 com. 24 V)

Terminal I.S. 9170/11-14-11 9170/11-11-11		Channel	Carrier slot	Carrier	Input No.	pin X01 1)	
						IN(+)	IN(-)
10	+	1	1	1	1	AA	LL
11	-						
10	+	2	2		2	z	EE
11	-						
10	+	3	3		3	p	v
11	-						
10	+	4	4		4	h	l
11	-						
10	+	5	5		5	e	b
11	-						
10	+	6	6		6	W	S
11	-						
10	+	7	7		7	L	F
11	-						
10	+	8	8		8	M	B
11	-						
10	+	9	9		9	BB	MM
11	-						
10	+	10	10		10	CC	HH
11	-						
10	+	11	11		11	t	x
11	-						
10	+	12	12		12	j	m
11	-						
10	+	13	13		13	f	c
11	-						
10	+	14	14		14	Z	U
11	-						
10	+	15	15		15	P	J
11	-						
10	+	16	16		16	N	C
11	-						

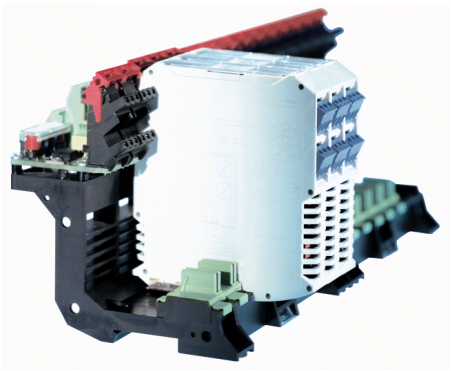
Terminal I.S. 9170/11-14-11 9170/11-11-11		Channel	Carrier slot	Carrier	Input No.	pin X01 1)	
						IN(+)	IN(-)
10	+	1	1	2	1	AA	LL
11	-						
10	+	2	2		2	z	EE
11	-						
10	+	3	3		3	p	v
11	-						
10	+	4	4		4	h	l
11	-						
10	+	5	5		5	e	b
11	-						
10	+	6	6		6	W	S
11	-						
10	+	7	7		7	L	F
11	-						
10	+	8	8		8	M	B
11	-						
10	+	9	9		9	BB	MM
11	-						
10	+	10	10		10	CC	HH
11	-						
10	+	11	11		11	t	x
11	-						
10	+	12	12		12	j	m
11	-						
10	+	13	13		13	f	c
11	-						
10	+	14	14		14	Z	U
11	-						
10	+	15	15		15	P	J
11	-						
10	+	16	16		16	N	C
11	-						

1) On terminal X01 Pins T, H, w, FF (CGND) not used.

pac- Carrier

9195/22A-TR1-04C9

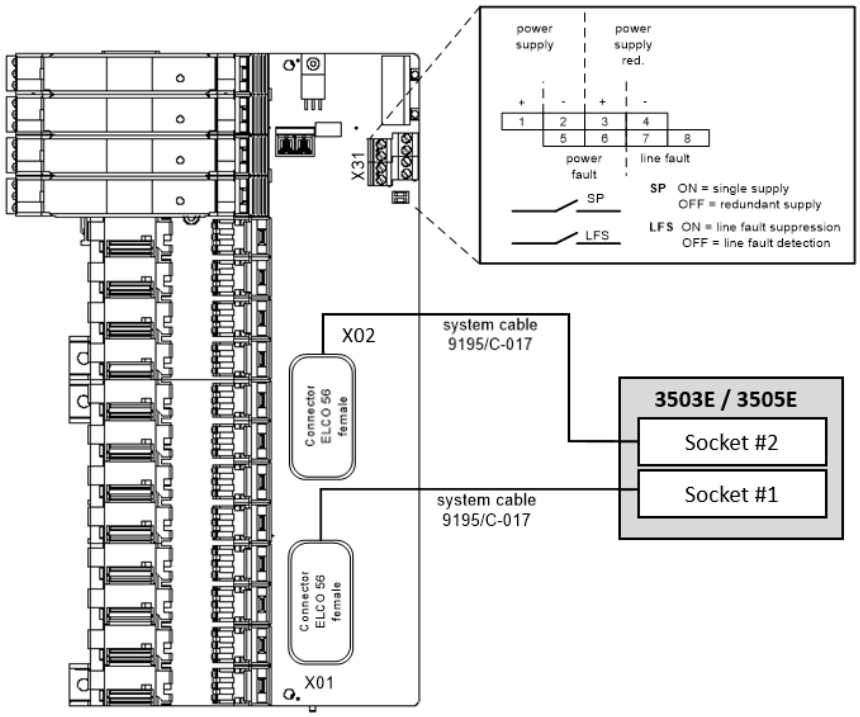
For Triconex / Version v9-v10 Tricon System / 3503E / 3505 E



- Signal types: 32 x DI
- pac-Carrier for 16 modules, up to 32 signals
- ISpac isolators DI 9170/21-14-11 and 9170/21-11-11 can be used
- Customized system STAHL cables 9195/C-017 to Tricon ESD system.
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Tricon ESD system via system specific connection boards and system cables.

System overview



Selection table

ESD system				R. STAHL interface solution			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-V10 Tricon System	3503E	DI	16	9195/C-017	9170/21-14-11 9170/21-11-11	9195/22A-TR1-04C9

Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 x LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01, X02)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 3
Number of channels	32
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	32
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of ISpac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for single supply
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g (without isolators)
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

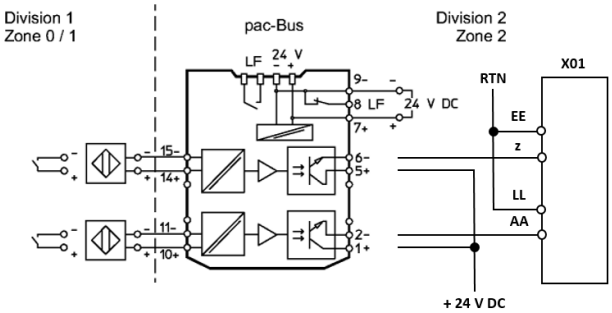
Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

Switching repeater (DI)

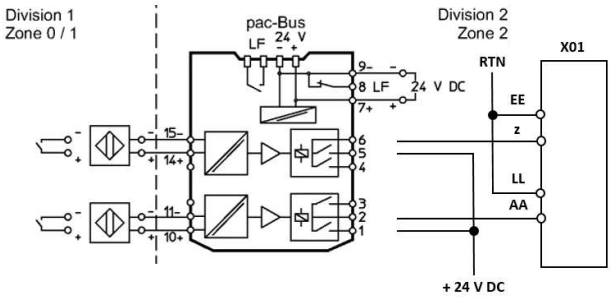
for NAMUR proximity switches and contacts
- electronic output

9170/21-14-11



for NAMUR proximity switches and contacts
- contact output

9170/2x-11-11

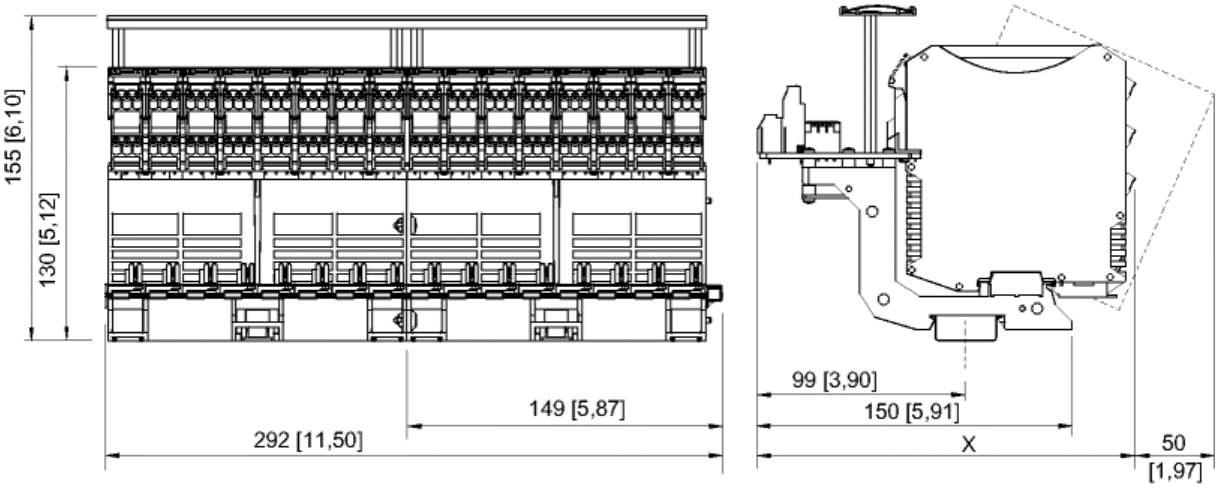


SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/22A-TR1-04C9	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9170/21-14-11	DI	2	EXIDA	STAHL 09/03-52 R019	92%	4.87E-04	5
9170/21-11-11	DI	2	EXIDA	STAHL 09/03-52 R019	78 %	6.19E-04	5

Accessories and Spare Parts			
Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Tricon Module 3503E / 3505E (DI 32 common 24 V)

Connector 1

Terminal I.S. 9170/21-14-11 9170/21-11-11		Channel	Carrier slot	Input No.	pin X01 1) IN(+)	pin X01 1) IN(-)
10	+	1	1	1	AA	LL
11	-					
14	+	2		2	z	EE
15	-					
10	+	3	2	3	p	v
11	-					
14	+	4		4	h	l
15	-					
10	+	5	3	5	e	b
11	-					
14	+	6		6	W	S
15	-					
10	+	7	4	7	L	F
11	-					
14	+	8		8	M	B
15	-					
10	+	9	5	9	BB	MM
11	-					
14	+	10		10	CC	HH
15	-					
10	+	11	6	11	t	x
11	-					
14	+	12		12	j	m
15	-					
10	+	13	7	13	f	c
11	-					
14	+	14		14	Z	U
15	-					
10	+	15	8	15	P	J
11	-					
14	+	16		16	N	C
15	-					

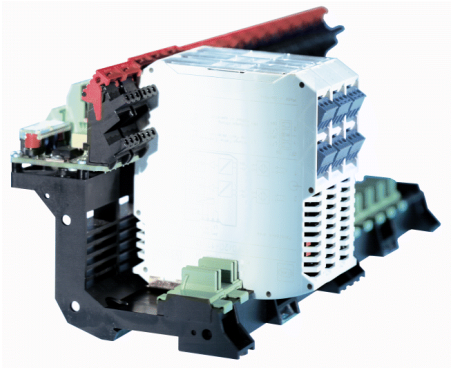
Connector 2

Terminal I.S. 9170/21-14-11 9170/21-11-11		Channel	Carrier slot	Input No.	pin X01 1) IN(+)	pin X01 1) IN(-)
10	+	17	9	1	AA	LL
11	-					
14	+	18		2	z	EE
15	-					
10	+	19	10	3	p	v
11	-					
14	+	20		4	h	l
15	-					
10	+	21	11	5	e	b
11	-					
14	+	22		6	W	S
15	-					
10	+	23	12	7	L	F
11	-					
14	+	24		8	M	B
15	-					
10	+	25	13	9	BB	MM
11	-					
14	+	26		10	CC	HH
15	-					
10	+	27	14	11	t	x
11	-					
14	+	28		12	j	m
15	-					
10	+	29	15	13	f	c
11	-					
14	+	30		14	Z	U
15	-					
10	+	31	16	15	P	J
11	-					
14	+	32		16	N	C
15	-					

1) On terminal X01 Pins T, H, w, FF (CGND) not used.

pac- Carrier

9195/21M-TR1-02G1
9195/21S-TR1-02G1

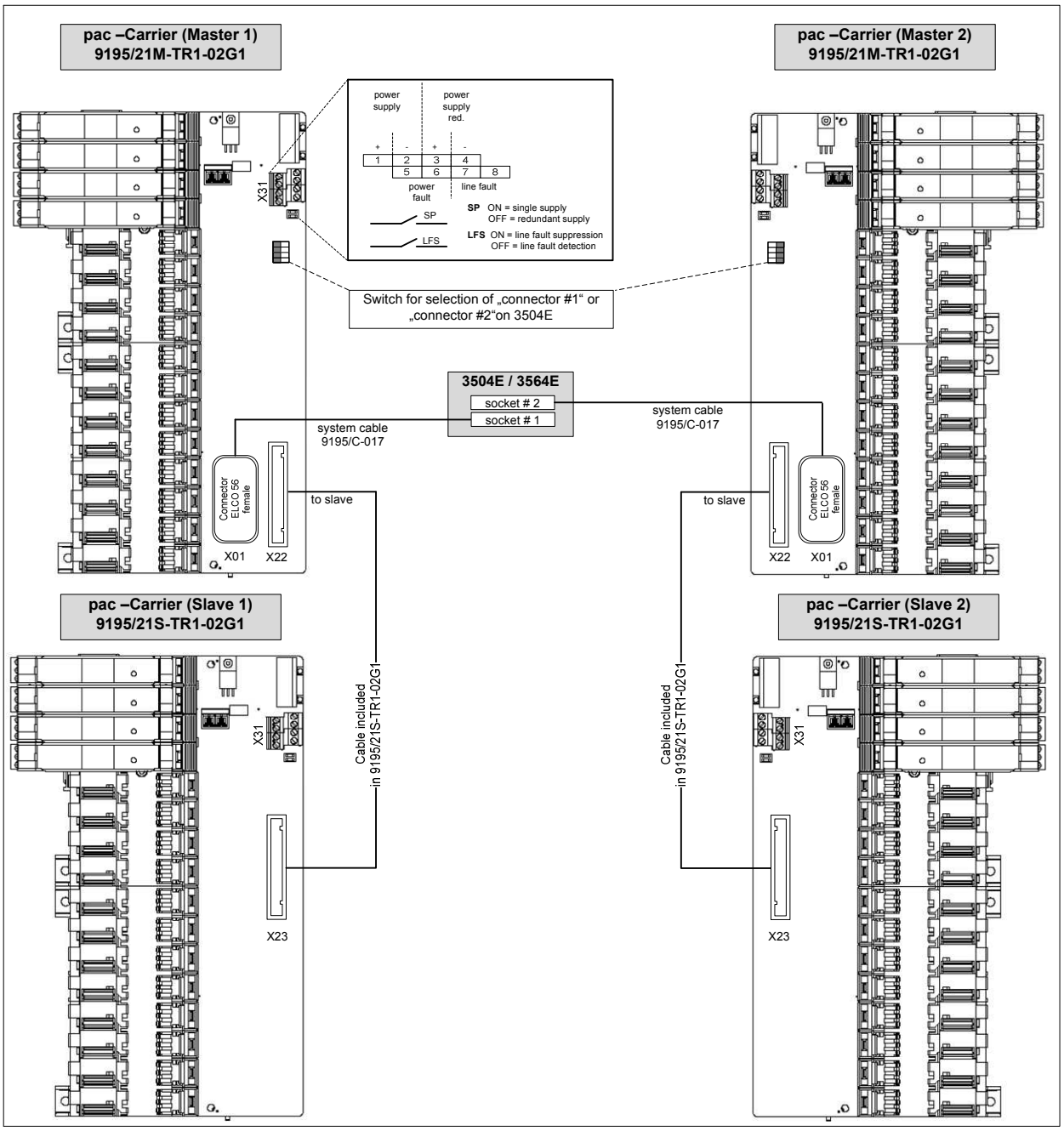


For Triconex / Version v9-v10 Tricon System / 3504E / 3564E

- Signal types: 64 x DI
- pac- Carrier for 16 modules, up to 16 signals
- ISpac isolator DI 9170/11-14-11, 9170/11-14-12 and 9170/11-11-11 can be used
- Customized system cables type 9195/C-017 to ESD system (Master)
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Tricon ESD system via system specific connection boards and system cables.

System overview



Selection table							
ESD system				**R. STAHL interface solution**			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	3504E 3564E	DI	2 x 16	2 x 9195/C-017	9170/11-14-11 9170/11-14-12 9170/11-11-11	2 x 9195/21M-TR1-02G1
				2 x 16	--		2 x 9195/21S-TR1-02G1

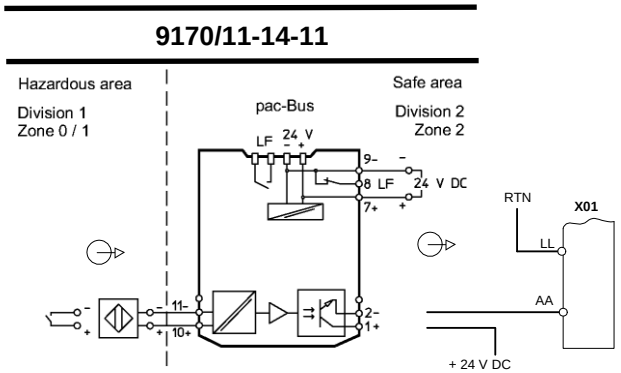
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 x LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 3
Number of channels	32
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Connection to SLAVE carrier	**(X22)**
Connection	IEC 60603-13 (DIN 41651) 34 pole, male
Number of channels	16
Connection to MASTER carrier	**(X23)**
Connection	IEC 60603-13 (DIN 41651) 34 pole, male
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

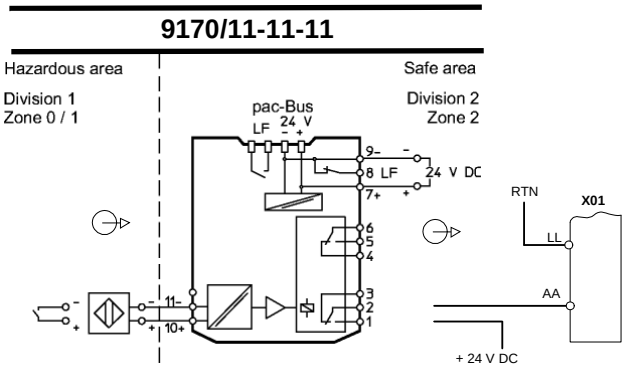
Switching repeater (DI)

for NAMUR proximity switches and contacts
- electronic output



Switching repeater (DI)

for NAMUR proximity switches and contacts
- contact output

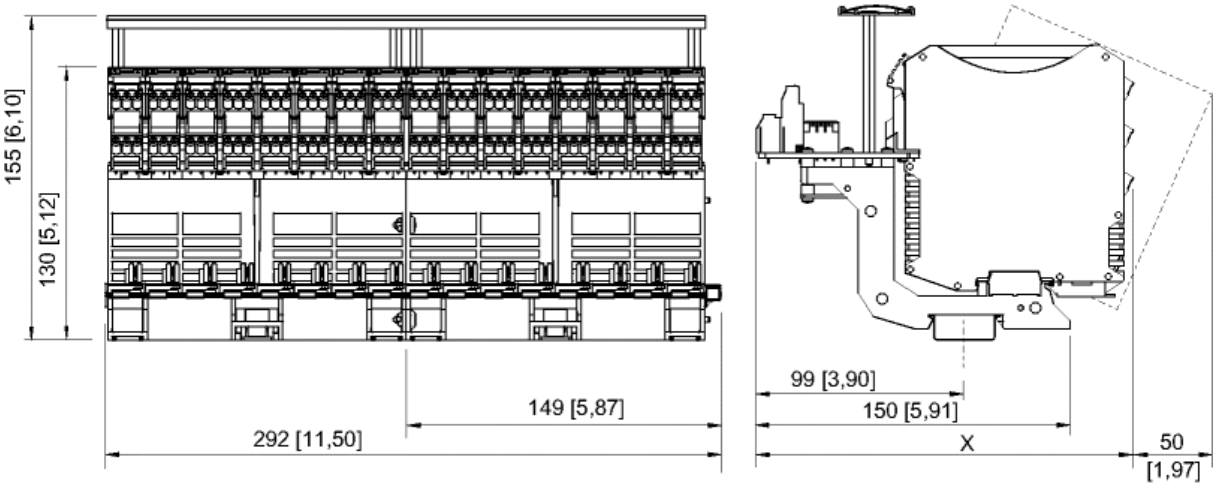


SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/21A-TR1-04B7	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9170/11-14-11	DI	2	EXIDA	STAHL 09/03-52 R019	92%	4.87E-04	5
9170/11-11-11	DI	2	EXIDA	STAHL 09/03-52 R019	78 %	6.19E-04	5

Accessories and Spare Parts			
Designation	Illustration	Description	**Order number**
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Connection list – Master 1 and 2
Tricon module 3504E / 3564E (DI 64 com. 24 V)

terminal I.S. 9170/11-14-11 9170/11-11-11		channel	carrier slot	carrier	input no.	pin X01 conn. # 1 (Elco 56 female)
10	+	1	1	Master 1	1	AA
11	-					
10	+	2	2		2	LL
11	-					
10	+	3	3		3	z
11	-					
10	+	4	4		4	EE
11	-					
10	+	5	5		5	p
11	-					
10	+	6	6		6	v
11	-					
10	+	7	7		7	h
11	-					
10	+	8	8		8	l
11	-					
10	+	9	9		9	e
11	-					
10	+	10	10		10	b
11	-					
10	+	11	11		11	W
11	-					
10	+	12	12		12	S
11	-					
10	+	13	13		13	L
11	-					
10	+	14	14		14	F
11	-					
10	+	15	15		15	M
11	-					
10	+	16	16		16	B
11	-					

terminal I.S. 9170/11-14-11 9170/11-11-11		channel	carrier slot	carrier	input no.	pin X01 conn. # 2 (Elco 56 female)
10	+	33	1	Master 2	33	AA
11	-					
10	+	34	2		34	LL
11	-					
10	+	35	3		35	z
11	-					
10	+	36	4		36	EE
11	-					
10	+	37	5		37	p
11	-					
10	+	38	6		38	v
11	-					
10	+	39	7		39	h
11	-					
10	+	40	8		40	l
11	-					
10	+	41	9		41	e
11	-					
10	+	42	10		42	b
11	-					
10	+	43	11		43	W
11	-					
10	+	44	12		44	S
11	-					
10	+	45	13		45	L
11	-					
10	+	46	14		46	F
11	-					
10	+	47	15		47	M
11	-					
10	+	48	16		48	B
11	-					

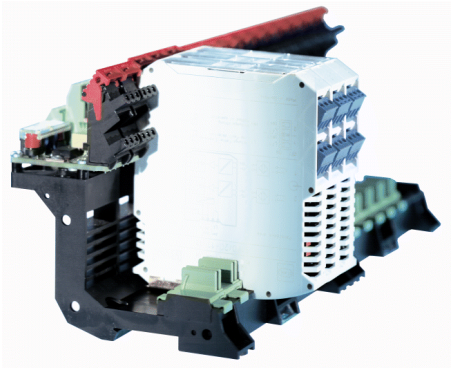
Connection list – Slave 1 and 2
Tricon module 3504E / 3564E (DI 64 com. 24 V)

terminal I.S. 9170/11-14-11 9170/11-11-11		channel	carrier slot	carrier	input no.	pin X01 conn. # 1 (Elco 56 female)
10	+	17	1	Slave 1	17	BB
11	-					
10	+	18	2		18	MM
11	-					
10	+	19	3		19	CC
11	-					
10	+	20	4		20	HH
11	-					
10	+	21	5		21	t
11	-					
10	+	22	6		22	x
11	-					
10	+	23	7		23	j
11	-					
10	+	24	8		24	m
11	-					
10	+	25	9		25	f
11	-					
10	+	26	10		26	c
11	-					
10	+	27	11		27	Z
11	-					
10	+	28	12		28	U
11	-					
10	+	29	13		29	P
11	-					
10	+	30	14		30	J
11	-					
10	+	31	15		31	N
11	-					
10	+	32	16		32	C
11	-					

terminal I.S. 9170/11-14-11 9170/11-11-11		channel	carrier slot	carrier	input no.	pin X01 conn. # 2 (Elco 56 female)
10	+	49	1	Slave 2	49	BB
11	-					
10	+	50	2		50	MM
11	-					
10	+	51	3		51	CC
11	-					
10	+	52	4		52	HH
11	-					
10	+	53	5		53	t
11	-					
10	+	54	6		54	x
11	-					
10	+	55	7		55	j
11	-					
10	+	56	8		56	m
11	-					
10	+	57	9		57	f
11	-					
10	+	58	10		58	c
11	-					
10	+	59	11		59	Z
11	-					
10	+	60	12		60	U
11	-					
10	+	61	13		61	P
11	-					
10	+	62	14		62	J
11	-					
10	+	63	15		63	N
11	-					
10	+	64	16		64	C
11	-					

pac- Carrier

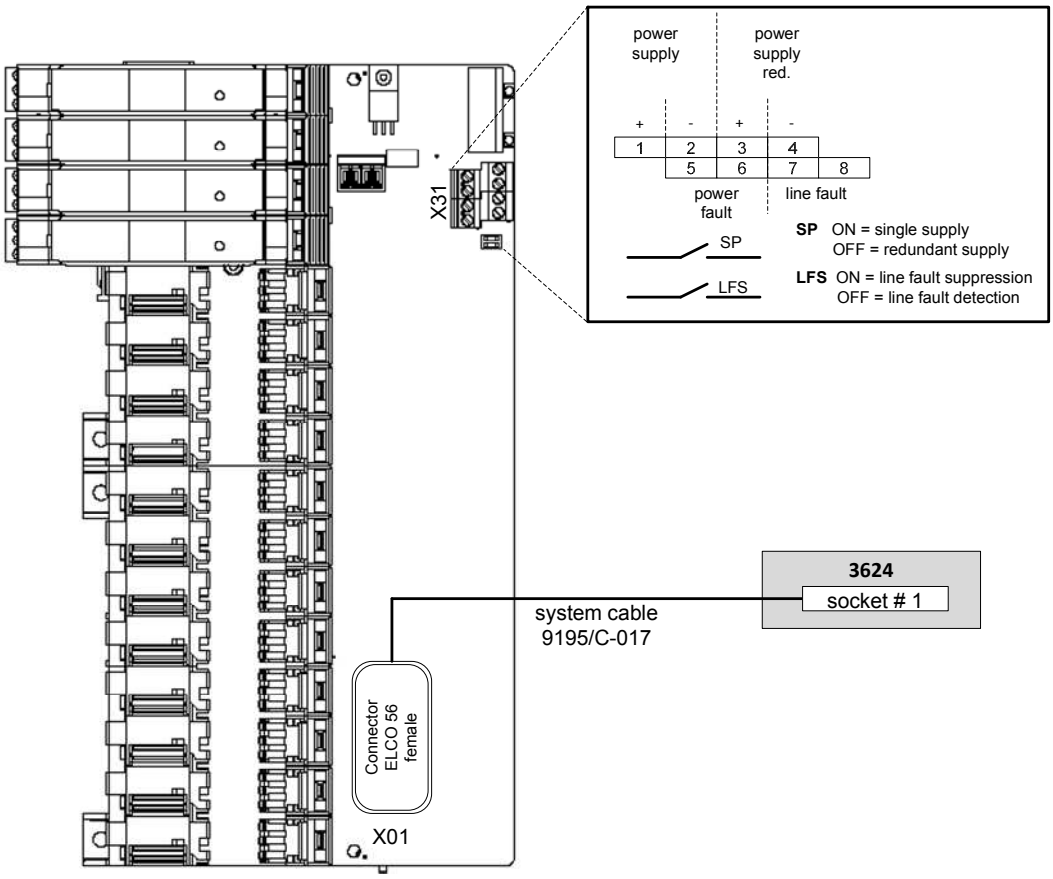
9195/21A-TR1-03B7



- **For Triconex / Version v9-v10 Tricon System / 3624**
- Signal types: 16 x DO
- pac- Carrier for 16 modules, up to 16 signals
- ISpac isolator DO 9175/10-12-11, 9175/10-14-11, 9175/10-16-11 can be used
- Customized system cables type ELCO 56 to automation systems
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Tricon ESD system via system specific connection boards and system cables.

System overview



Selection table							
ESD system				**R. STAHL interface solution**			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	3624	DO	16	9195/C-017	9175/10-12-11 9175/10-14-11 9175/10-16-11	9195/21A-TR1-03B7

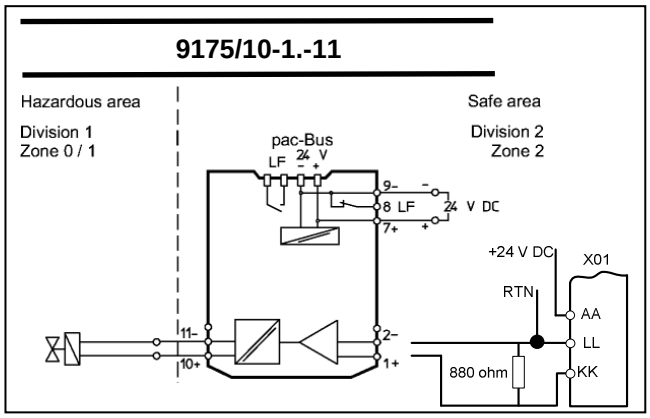
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	Ⓔx II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 3, Large 3
Number of channels	16
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of ISpac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

Digital Output (DO)
for Solenoid valves and indicators

Please check the holding current of the solenoid valve by means of the individual spec sheet.
Line fault detection circuit ISpac 9175: Current: 0,5...1,1 mA
If necessary, LFD can be switched off



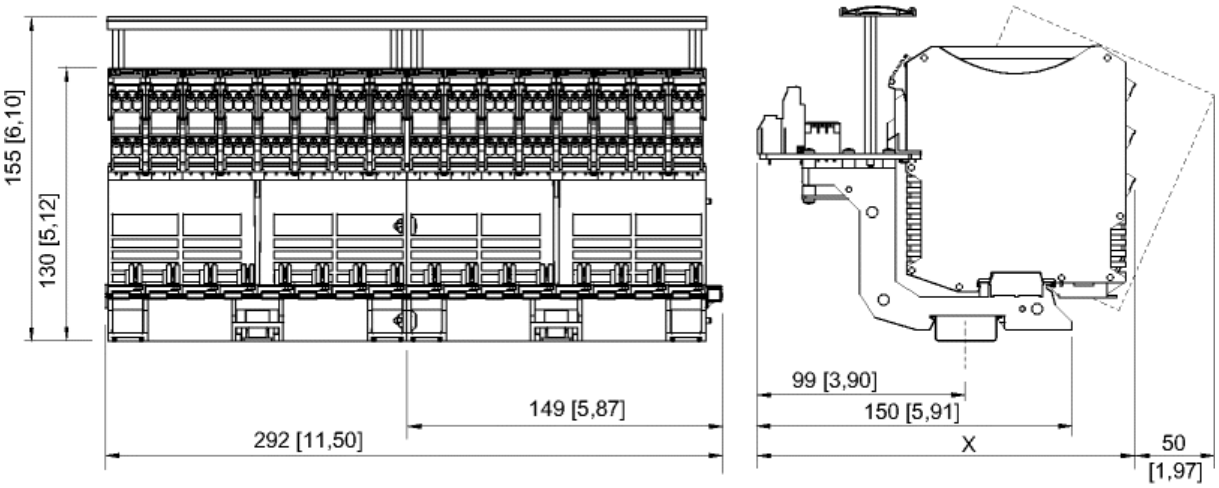
SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/21A-TR1-03B7	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9175/10-1*-11	DO	3	EXIDA	STAHL 07/10-01 R012	94%	8,12E-05	2

Accessories and Spare Parts

Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Tricon Module 3624 (DO 16 at 24 V)

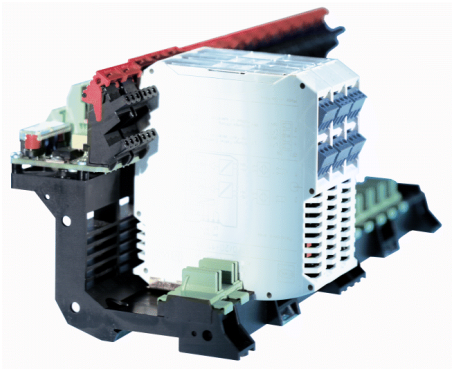
Channel	Terminal i.s.		Carrier slot	Terminal X01 1)			Output No.
				PWR	RTN	LOAD	
1	10	+	1	AA	LL	KK	1
	11	-					
2	10	+	2	z	EE	DD	2
	11	-					
3	10	+	3	p	v	u	3
	11	-					
4	10	+	4	h	l	k	4
	11	-					
5	10	+	5	e	b	a	5
	11	-					
6	10	+	6	W	S	R	6
	11	-					
7	10	+	7	L	F	E	7
	11	-					
8	10	+	8	M	B	A	8
	11	-					
9	10	+	9	BB	MM	NN	9
	11	-					
10	10	+	10	CC	HH	JJ	10
	11	-					
11	10	+	11	t	x	y	11
	11	-					
12	10	+	12	j	m	n	12
	11	-					
13	10	+	13	f	c	d	13
	11	-					
14	10	+	14	Z	U	V	14
	11	-					
15	10	+	15	P	J	K	15
	11	-					
16	10	+	16	N	C	D	16
	11	-					

On terminal X01 Pins T, H, w, FF are CGND

pac- Carrier

9195/21A-TR1-06B7

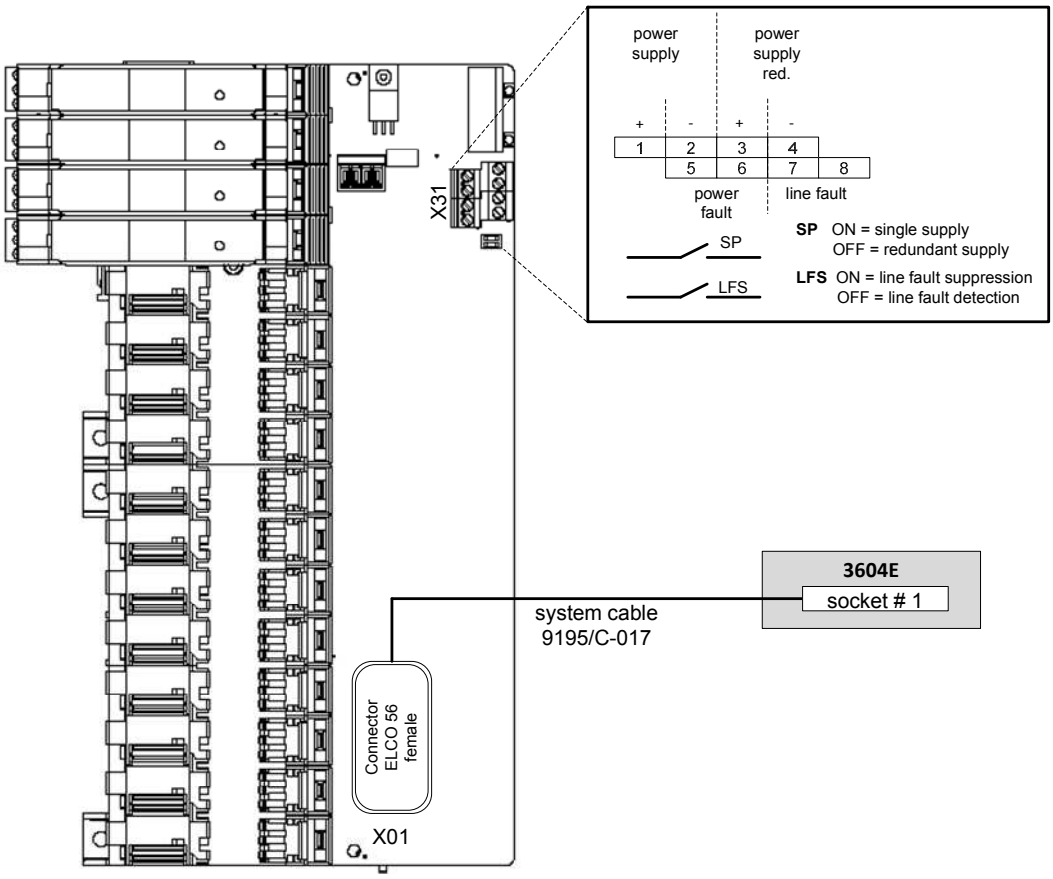
For Triconex / Version v9-v10 Tricon System / 3604E / 3625 / 3625A / 3664 / 3674



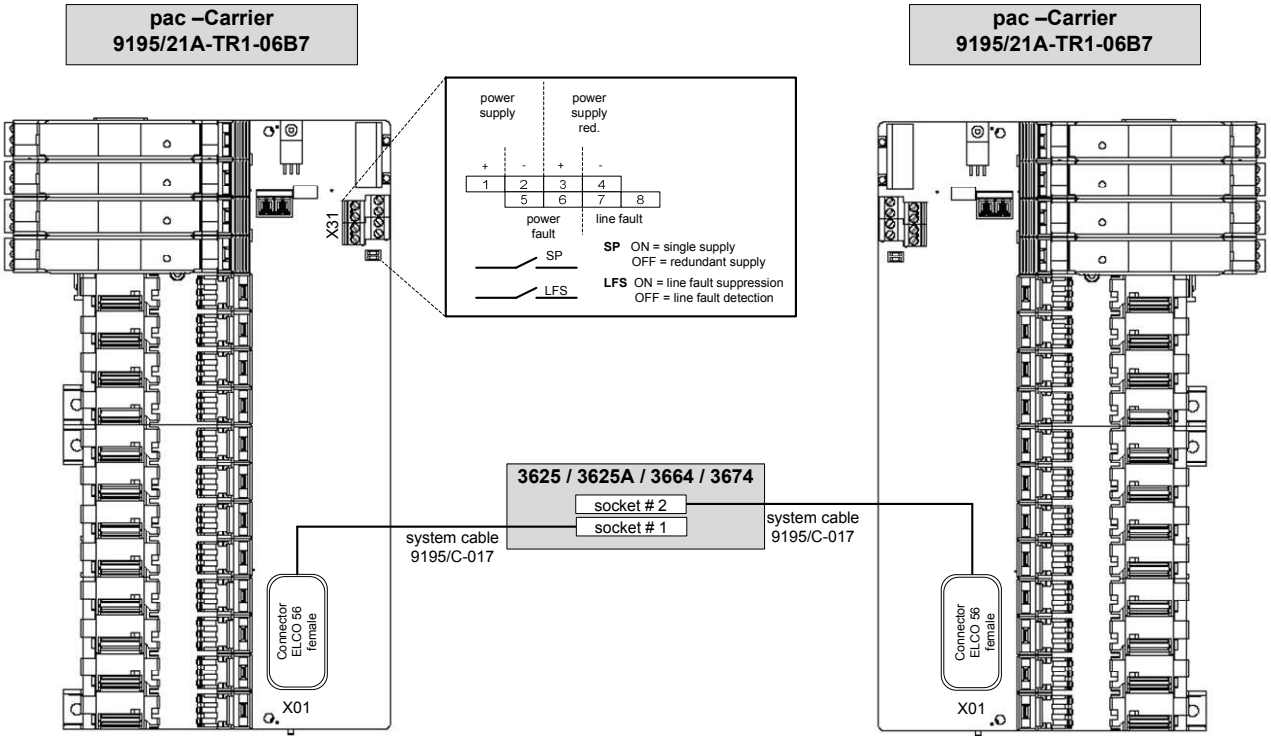
- Signal types: 16 x DO by 3604E
- Signal types: 16 x DO by 3625, 3625A, 3664 and 3674A
- pac-Carrier for 16 modules, up to 16 signals
- ISpac isolator DO 9175/10-12-11, 9175/10-14-11, 9175/10-16-11 can be used
- Customized system cables type ELCO 56 to automation systems
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Triconex automation systems via system specific connection boards and system cables.

System overview for Tricon 3604E



System overview for Tricon 3625 / 3625A / 3664 and 3674



Selection table

ESD system				R. STAHL interface solution			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	3604E	DO	16	9195/C-017	9175/10-12-11 9175/10-14-11 9175/10-16-11	9195/21A-TR1-03B7
Triconex by Schneider Electric	v9-v10 Tricon System	3625 3625A 3664 3674A	DO	2 x 16	2 x 9195/C-017	9175/10-12-11 9175/10-14-11 9175/10-16-11	2 x 9195/21A-TR1-03B7

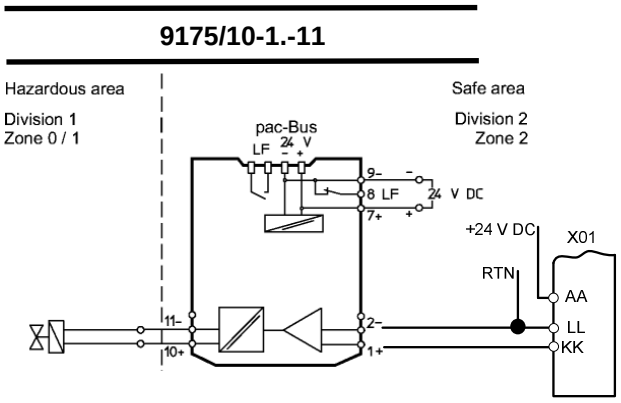
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 x LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 3, Large 3
Number of channels	16
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

Digital Output (DO)
for Solenoid valves and indicators

Please check the holding current of the solenoid valve by means of the individual spec sheet.
Line fault detection circuit ISpac 9175: Current: 0,5...1,1 mA
If necessary, LFD can be switched off



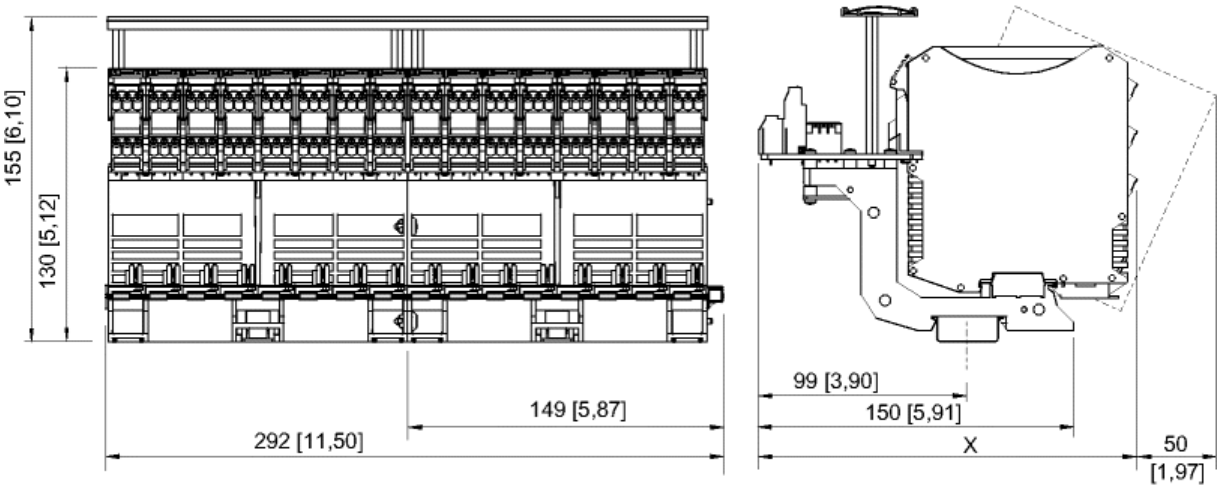
SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/21A-TR1-03B7	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9175/10-1*-11	DO	3	exida	STAHL 07/10-01 R012	94%	8,12E-05	2

Accessories and Spare Parts

Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

pac-Carrier 1 for connector #1

For Tricon module 3604E (DO 16 at 24 V)

Channel	Terminal I.S.		Carrier slot	Terminal X01 ELCO56 1) PWR	RTN	LOAD	Output No.
1	10	+	1	AA	LL	KK	1
	11	-					
2	10	+	2	z	EE	DD	2
	11	-					
3	10	+	3	p	v	u	3
	11	-					
4	10	+	4	h	l	k	4
	11	-					
5	10	+	5	e	b	a	5
	11	-					
6	10	+	6	W	S	R	6
	11	-					
7	10	+	7	L	F	E	7
	11	-					
8	10	+	8	M	B	A	8
	11	-					
9	10	+	9	BB	MM	NN	9
	11	-					
10	10	+	10	CC	HH	JJ	10
	11	-					
11	10	+	11	t	x	y	11
	11	-					
12	10	+	12	j	m	n	12
	11	-					
13	10	+	13	f	c	d	13
	11	-					
14	10	+	14	Z	U	V	14
	11	-					
15	10	+	15	P	J	K	15
	11	-					
16	10	+	16	N	C	D	16
	11	-					

pac-Carrier 2 for connector #2

For Tricon module 3625 / 3625A / 3664 and 3674 (2 x DO 16 at 24 V)

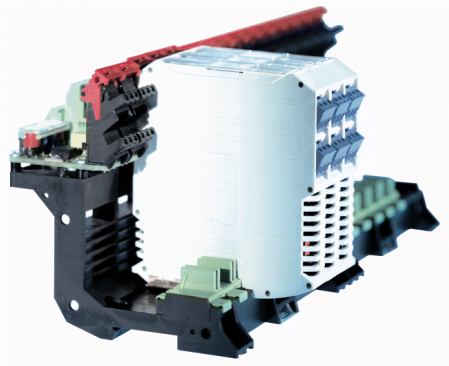
Channel	Terminal I.S.		Carrier slot	Terminal X01 ELCO56 1) PWR	RTN	LOAD	Output No.
17	10	+	1	AA	LL	KK	17
	11	-					
18	10	+	2	z	EE	DD	18
	11	-					
19	10	+	3	p	v	u	19
	11	-					
20	10	+	4	h	l	k	20
	11	-					
21	10	+	5	e	b	a	21
	11	-					
22	10	+	6	W	S	R	22
	11	-					
23	10	+	7	L	F	E	23
	11	-					
24	10	+	8	M	B	A	24
	11	-					
25	10	+	9	BB	MM	NN	25
	11	-					
26	10	+	10	CC	HH	JJ	26
	11	-					
27	10	+	11	t	x	y	27
	11	-					
28	10	+	12	j	m	n	28
	11	-					
29	10	+	13	f	c	d	29
	11	-					
30	10	+	14	Z	U	V	30
	11	-					
31	10	+	15	P	J	K	31
	11	-					
32	10	+	16	N	C	D	32
	11	-					

On terminal X01 Pins T, H, w, FF are CGND

pac- Carrier

9195/21H-TR1-05B7

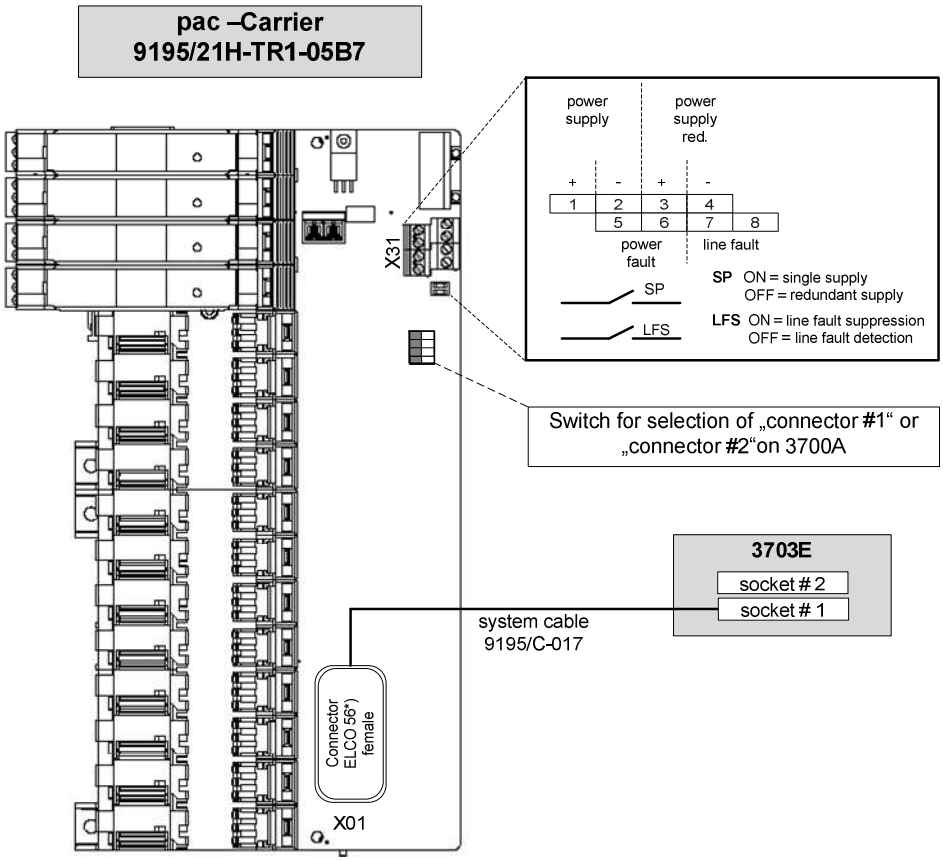
For Triconex / Version v9-v10 Tricon System / 3700 / 3700A / 3703 / 3721



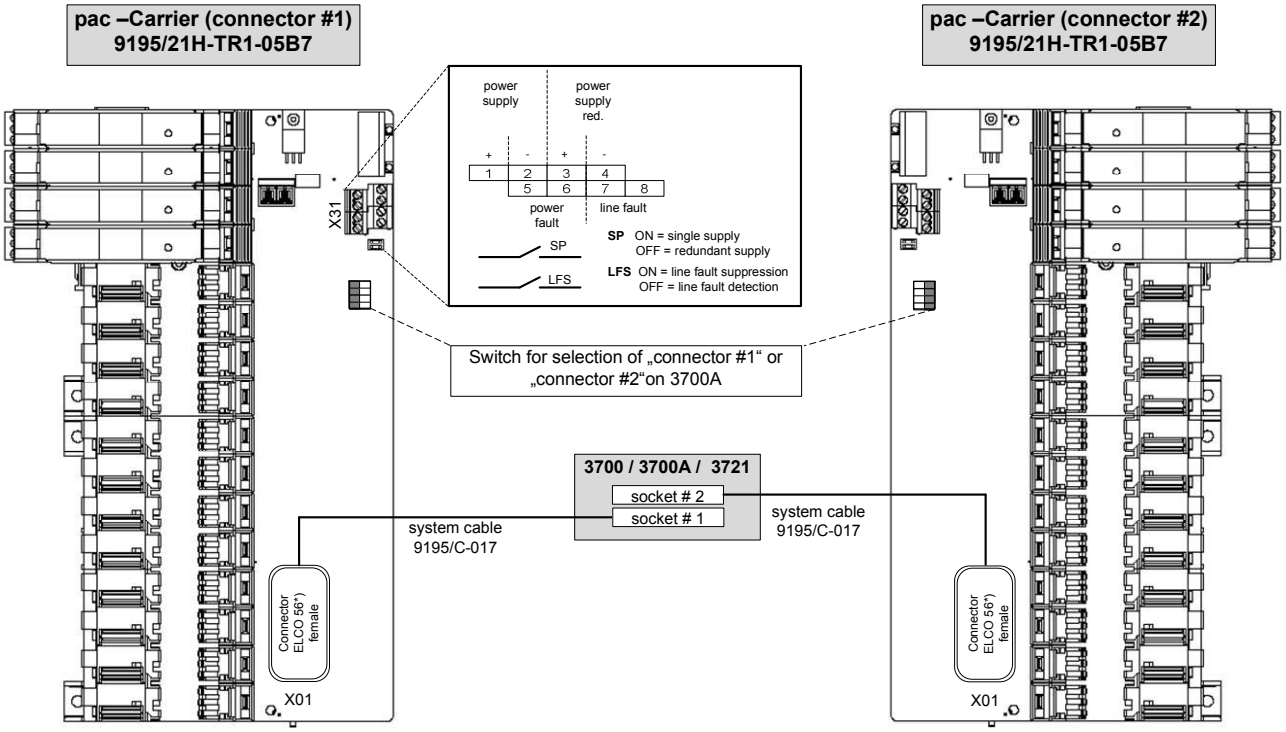
- Signal types: 32 x AI for 3700 / 3700A / 3721
- Signal types: 16 x AI for 3703E
- pac-Carrier for 16 modules, up to 16 signals
- ISpac isolator AI 9160/13-11-10, 9160/13-11-13, 9163/13-11-10, 9163/11-81-10, 9182/10-51-13 can be used
- Customized system cables type 9195/C-017 to automation systems (Master)
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Tricon ESD system via system specific connection boards and system cables.

System overview for Tricon 3703E



System overview for Tricon 3700 / 3700A / 3721



Selection table							
ESD system				**R. STAHL interface solution**			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	3703E	AI	1 x 16	1 x 9195/C-017	9160/13-11-10 9160/13-11-13 9160/14-11-11	1 x 9195/21H-TR1-05B7
Triconex by Schneider Electric	v9-v10 Tricon System	3700 3700A 3721	AI	2 x 16	2 x 9195/C-017	9163/13-11-10 9163/11-81-10 9182/10-51-13	2 x 9195/21H-TR1-05B7

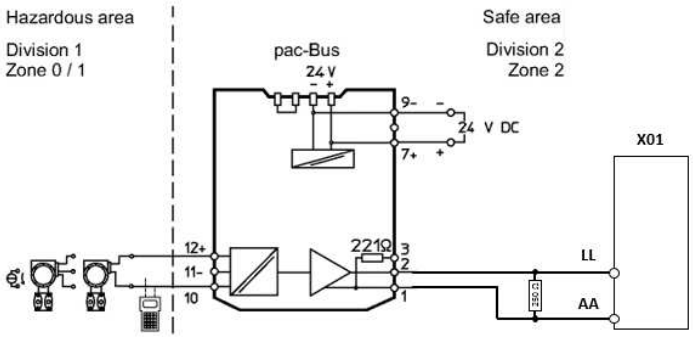
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 x LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 5
Number of channels	32
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

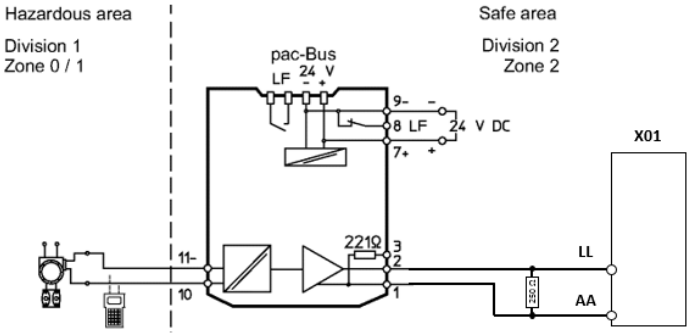
Transmitter supply unit (AI)
for 2-,3- wire transmitter and mA- sources
for 2- wire transmitter with HART
(without line fault contact)

9160/13-11-10



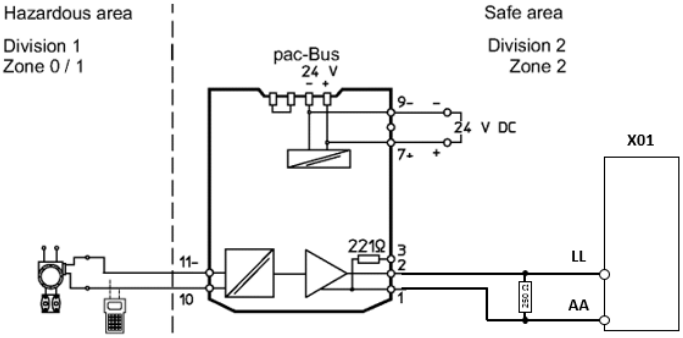
Transmitter supply unit (AI)
for 2-,3- wire transmitter and mA- sources
for 2- wire transmitter with HART
9160/13-11-13 SIL 3 version
9160/14-11-11 High power version

9160/13-11-13 & 9160/14-11-11



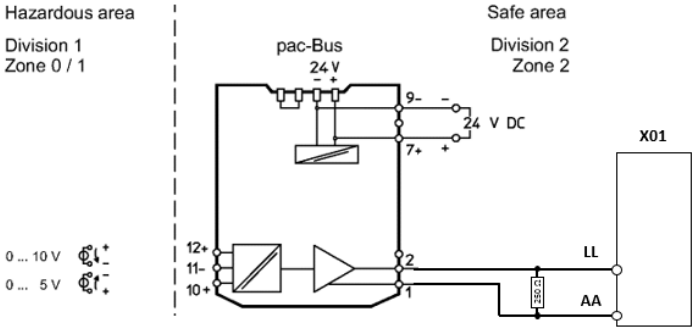
Isolating repeater (AI)
for 4- wire transmitter and mA- sources
bi- directional HART communication

9163/13-11-10

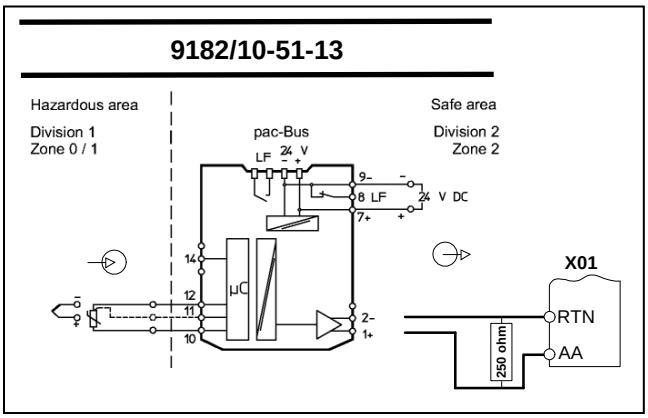


Isolating repeater (AI)
For voltage signals

9163/11-81-10



Temperature transmitter (AI)
for resistance thermometer,
thermocouple and RTD
(Configuration by means of ISpac Wizard software)

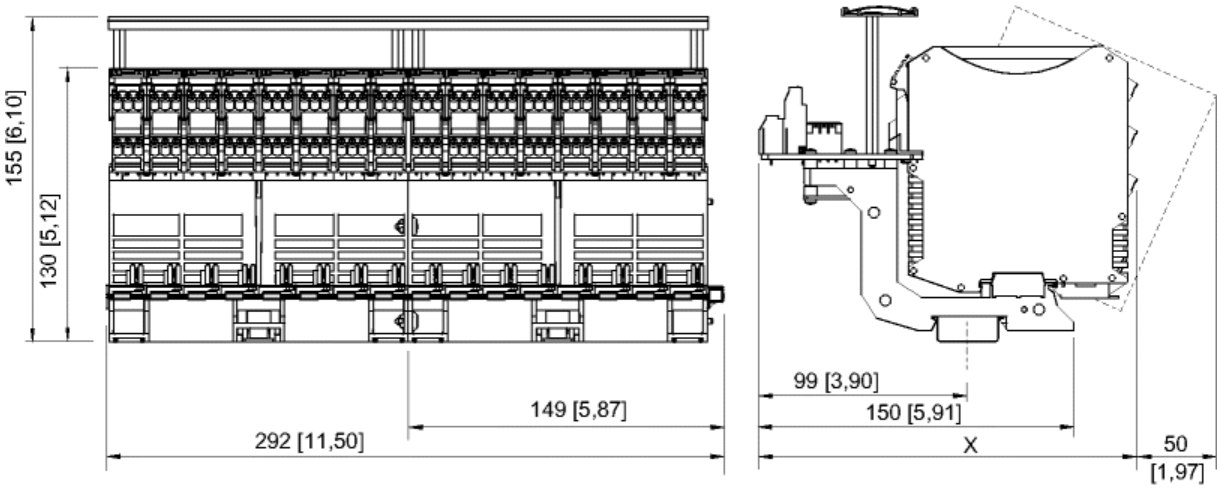


SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/16M-TR1-01G1 9195/16S-TR1-01H1	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9160/13-11-11	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9160/13-11-13	AI	3	EXIDA	STAHL 10/02-01 R027	95%	5,96E-05	1
9160/14-11-11	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9163/13-11-11	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9163/11-81-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9182/10-51-13	TI	2	EXIDA	STAHL 07/07-23 R016	71%	7.59E-04	1

Accessories and Spare Parts			
Designation	Illustration	Description	**Order number**
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Tricon modules / 3700 / 3700A / 3703E*) / 3721 (AI 32, 0-5 V)

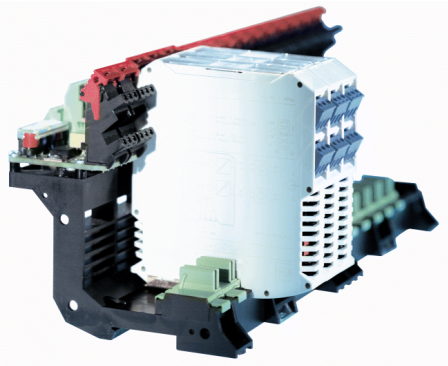
terminal I.S.		channel	carrier slot	carrier	input no.	pin X01 conn. # 1 (Elco 56 female)		terminal I.S.		channel	carrier slot	carrier	input no.	pin X01 conn. # 2 (Elco 56 female)
10	+	1	1	Connector # 1	1	AA		10	+	33	1	Connector # 2	33	AA
11	-							11	-					
10	+	2	2		2	LL		10	+	34	2		34	LL
11	-							11	-					
10	+	3	3		3	z		10	+	35	3		35	z
11	-							11	-					
10	+	4	4		4	EE		10	+	36	4		36	EE
11	-							11	-					
10	+	5	5		5	p		10	+	37	5		37	p
11	-							11	-					
10	+	6	6		6	v		10	+	38	6		38	v
11	-							11	-					
10	+	7	7		7	h		10	+	39	7		39	h
11	-							11	-					
10	+	8	8		8	l		10	+	40	8		40	l
11	-							11	-					
10	+	9	9		9	e		10	+	41	9		41	e
11	-							11	-					
10	+	10	10		10	b		10	+	42	10		42	b
11	-							11	-					
10	+	11	11		11	W		10	+	43	11		43	W
11	-							11	-					
10	+	12	12		12	S		10	+	44	12		44	S
11	-							11	-					
10	+	13	13		13	L		10	+	45	13		45	L
11	-							11	-					
10	+	14	14		14	F		10	+	46	14		46	F
11	-							11	-					
10	+	15	15		15	M		10	+	47	15		47	M
11	-							11	-					
10	+	16	16		16	B		10	+	48	16		48	B
11	-							11	-					

The Tricon module 3703E is only with connector# 1

pac- Carrier

9195/22H-TR1-05C9

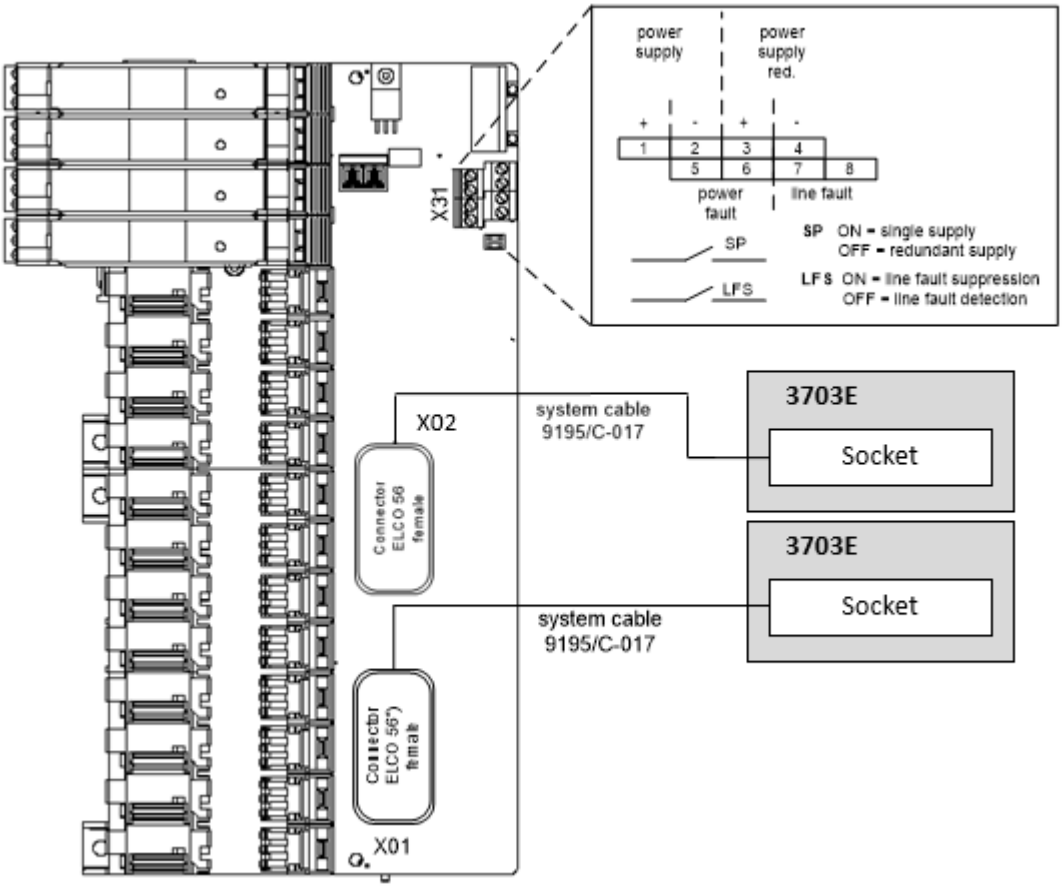
For Triconex / Version v9-v10 Tricon System / 3700 / 3700A / 3703 / 3721



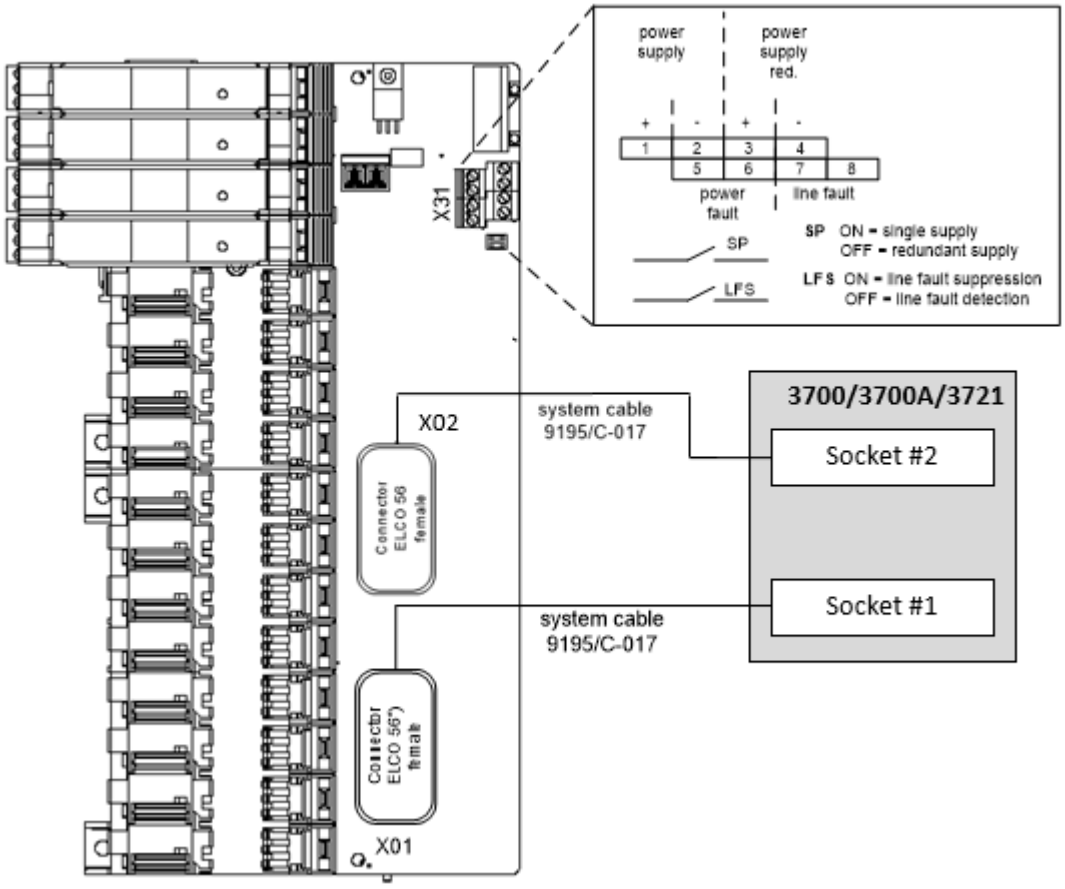
- Signal types: 32 x AI for 3700 / 3700A / 3721
- Signal types: 32 x AI for 2 x 3703E
- pac- Carrier for 16 modules, up to 32 signals
- ISpac isolator AI 9160/23-11-10, 9163/23-11-10 can be used
- Customized system cables type 9195/C-017 to automation systems
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Tricon ESD system via system specific connection boards and system cables.

System overview for Tricon 3703E



System overview for Tricon 3700 / 3700A / 3721



Selection table							
ESD system				**R. STAHL interface solution**			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	2 x 3703E	AI	1 x 16	2 x 9195/C-017	9160/23-11-10 9163/23-11-10	1 x 9195/22H-TR1-05C9
Triconex by Schneider Electric	v9-v10 Tricon System	3700 3700A 3721	AI	2 x 16	2 x 9195/C-017	9160/23-11-10 9163/23-11-10	1 x 9195/22H-TR1-05C9

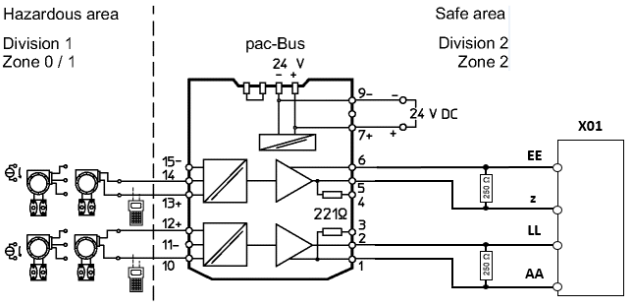
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	Ⓔx II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01, X02)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 5
Number of channels	32
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	32
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

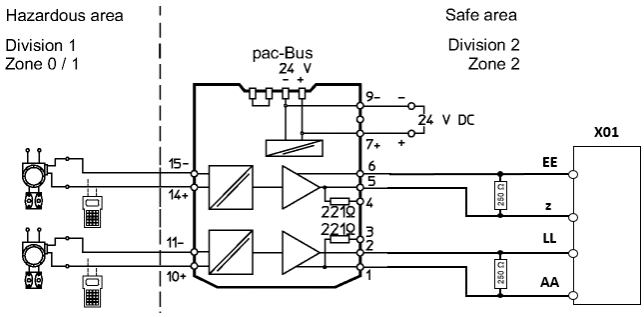
Transmitter supply unit (AI)
for 2- wire transmitter with HART
for 3- wire transmitter and mA- sources

9160/23-11-10



Isolating repeater (AI)
for 4- wire transmitter and mA- sources
with HART communication

9163/23-11-10



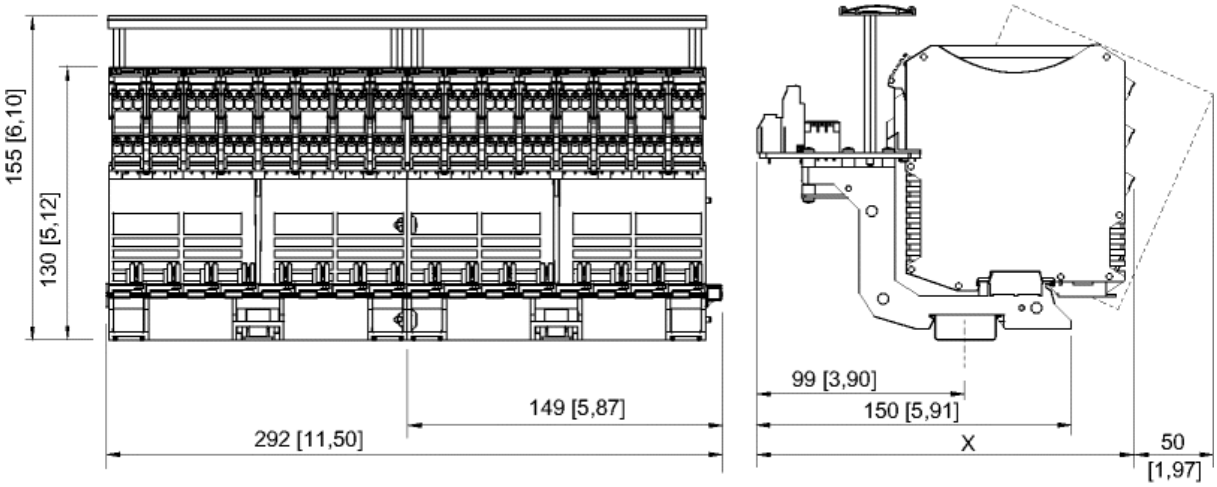
SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/22H-TR1-05C9	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9160/23-11-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9163/23-11-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5

Accessories and Spare Parts

Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex I field circuits into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits in the same backplane.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Tricon modules / 3700 / 3700A / 3703E / 3721 (AI 32, 0-5 V)

1 x 3703E						
Channel	Terminal i.s.		Carrier slot	pin X01 1) ELCO56 IN(+)	pin X01 1) ELCO56 IN(-)	Input No.
1	10	+	1	AA	LL	1
	11	-				
2	14	+		z	EE	2
	15	-				
3	10	+	2	p	v	3
	11	-				
4	14	+		h	l	4
	15	-				
5	10	+	3	e	b	5
	11	-				
6	14	+		W	S	6
	15	-				
7	10	+	4	L	F	7
	11	-				
8	14	+		M	B	8
	15	-				
9	10	+	5	BB	MM	9
	11	-				
10	14	+		CC	HH	10
	15	-				
11	10	+	6	t	x	11
	11	-				
12	14	+		j	m	12
	15	-				
13	10	+	7	f	c	13
	11	-				
14	14	+		Z	U	14
	15	-				
15	10	+	8	P	J	15
	11	-				
16	14	+		N	C	16
	15	-				

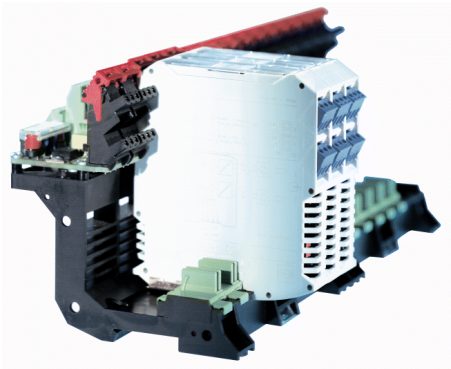
1 x 3703E						
Channel	Terminal i.s.		Carrier slot	pin X02 1) ELCO56 IN(+)	pin X02 1) ELCO56 IN(-)	Input No.
17	10	+	9	AA	LL	1
	11	-				
18	14	+		z	EE	2
	15	-				
19	10	+	10	p	v	3
	11	-				
20	14	+		h	l	4
	15	-				
21	10	+	11	e	b	5
	11	-				
22	14	+		W	S	6
	15	-				
23	10	+	12	L	F	7
	11	-				
24	14	+		M	B	8
	15	-				
25	10	+	13	BB	MM	9
	11	-				
26	14	+		CC	HH	10
	15	-				
27	10	+	14	t	x	11
	11	-				
28	14	+		j	m	12
	15	-				
29	10	+	15	f	c	13
	11	-				
30	14	+		Z	U	14
	15	-				
31	10	+	16	P	J	15
	11	-				
32	14	+		N	C	16
	15	-				

1) On terminal X01 and X02 Pins X, Y, r, s, T, H, w, FF not used.

pac- Carrier

9195/21M-TR1-01G1
9195/21S-TR1-01G1

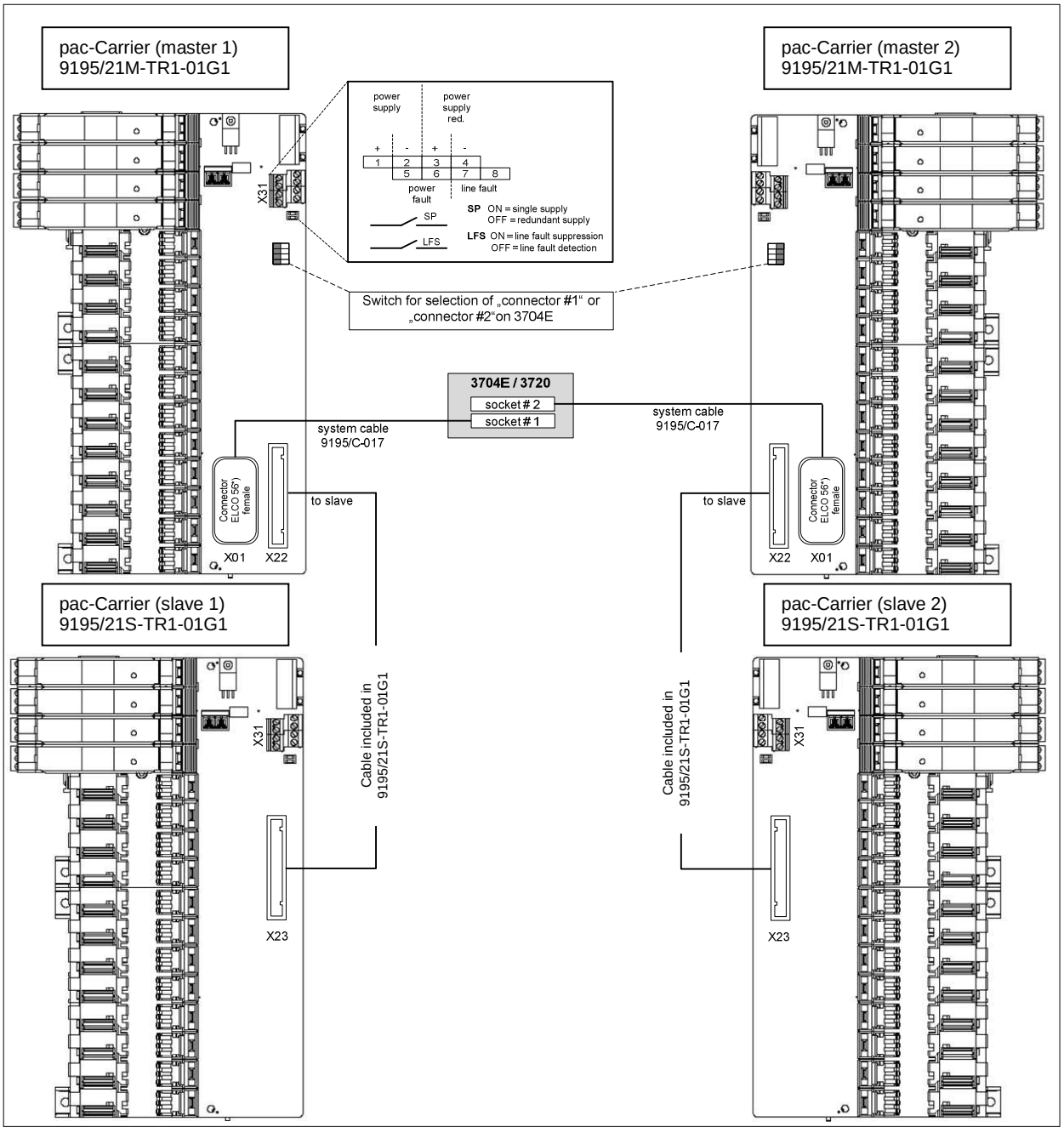
For Triconex / Version v9-v10 Tricon System / 3704E / 3720



- Signal types: 64 x AI
- pac- Carrier for 16 modules, up to 16 signals
- ISpac isolator AI 9160/13-11-10, 9160/13-11-13, 9160/14-11-11, 9163/13-11-10, 9163/11-81-10, 9182/10-51-13 can be used
- Customized system cables type 9195/C-017 to automation systems (Master)
- Redundant power supply with message contact and exchangeable fuses
- Horizontal or vertical installation
- Simple installation on DIN rail or mounting plate
- Many labeling possibilities
- Fast and secure installation of the isolators without tools
- Comfortable exchange of the isolators with secured ejector mechanism
- Installation possible in Zone 2 and Div. 2

Comfortable and simple integration of the I.S. isolators ISpac into Triconex automation systems via system specific connection boards and system cables.

System overview



Selection table

ESD system				R. STAHL interface solution			
ESD system vendor	**ESD system type**	**I/O type**	**Signal type**	**Slots**	**System cable**	**ISpac type**	**pac-Carrier type**
Triconex by Schneider Electric	v9-v10 Tricon System	3704E 3720	DI	2 x 16	2 x 9195/C-017	9160/13-11-10 9160/13-11-13 9160/14-11-11 9163/13-11-10 9163/11-81-10 9182/10-51-13	2 x 9195/21M-TR1-01G1
				2 x 16			2 x 9195/21S-TR1-01G1

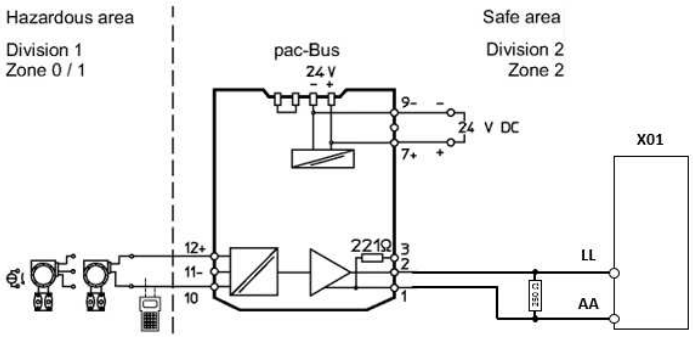
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4 Gc
Installation	In Zone 2, Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection to automation system	**(X01)**
Connection	ELCO 56 female, Key-Code: Small 1, Large 5
Number of channels	32
Connection field devices – Ex i / I.S.	
Connection	at the terminals of the Ex i isolators (see “signal loops”)
Number of channels	16
Connection to SLAVE carrier	**(X22)**
Connection	IEC 60603-13 (DIN 41651) 34 pole, male
Number of channels	16
Connection to MASTER carrier	**(X23)**
Connection	IEC 60603-13 (DIN 41651) 34 pole, male
Number of channels	16
Error messaging	**(X31)**
Power supply failure PF	Contact (35 V / 100 mA), closed in non-failure condition
Line fault LF (of IS pac modules)	Contact (35 V / 100 mA), closed in non-failure condition
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	- 20 °C ... + 70 °C (see specification of Ex i isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤ 95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail (NS35 / 15, NS35 / 7.5) or mounting plate (4 x screw M6)
Mounting position	horizontal or vertical
Casing / Terminal protection class	IP 00 / IP 20
Casing material	PA 6.6
Fire protecting class (UL-94)	V0

Signal loops

The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

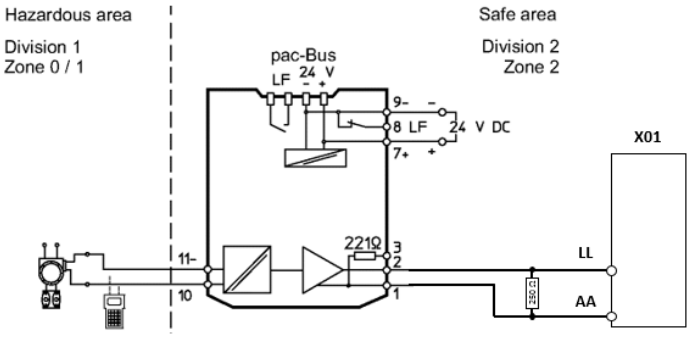
Transmitter supply unit (AI)
for 2-,3- wire transmitter and mA- sources
for 2- wire transmitter with HART
(without line fault contact)

9160/13-11-10



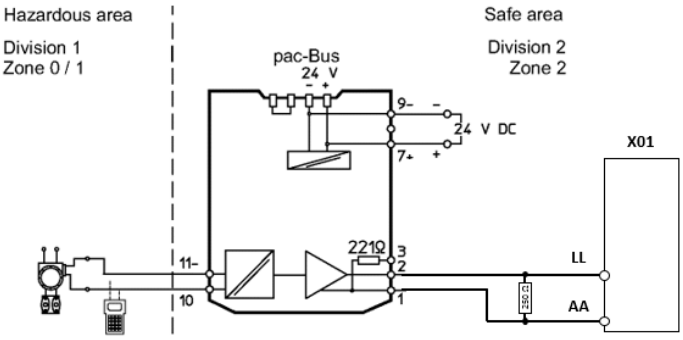
Transmitter supply unit (AI)
for 2-,3- wire transmitter and mA- sources
for 2- wire transmitter with HART
9160/13-11-13 SIL 3 version
9160/14-11-11 High power version

9160/13-11-13 & 9160/14-11-11



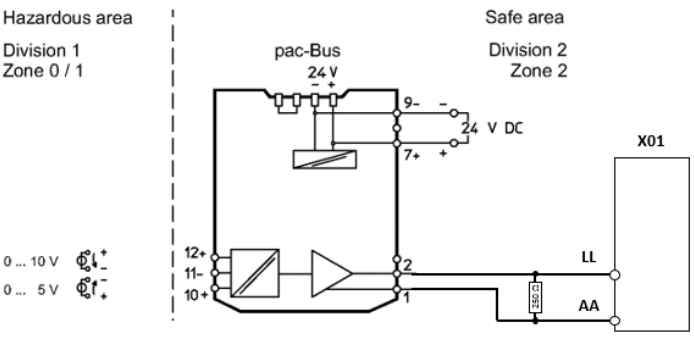
Isolating repeater (AI)
for 4- wire transmitter and mA- sources
bi- directional HART communication

9163/13-11-10



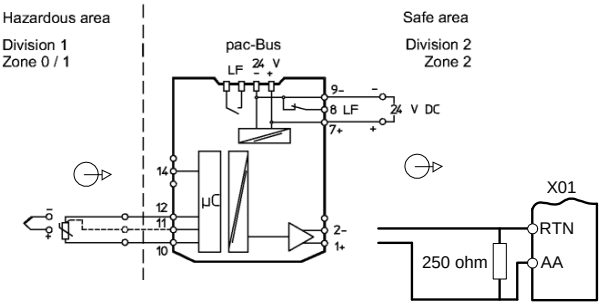
Isolating repeater (AI)
For voltage signals

9163/11-81-10



Temperature transmitter (AI)
for resistance thermometer,
thermocouple and RTD
(Configuration by means of ISpac Wizard software)

9182/10-51-13



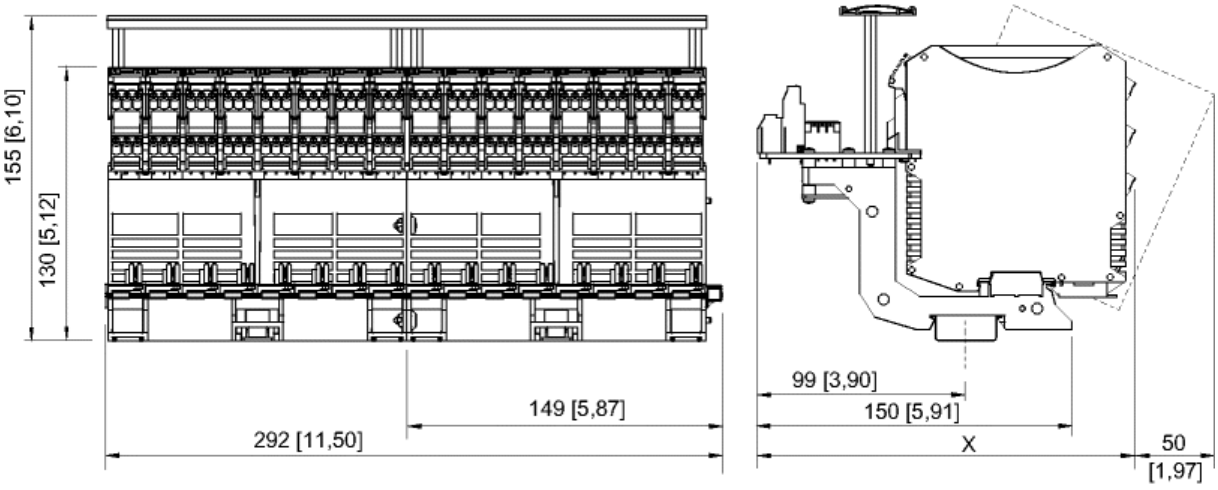
SIL specification

ISpac type	Function	SIL	Tested by	Test report Number	SFF	PFD	Tproof
9195/16N-TR1-01G1 9195/16T-TR1-01H1	backplane	3	EXIDA	STAHL 04/04-03 R002	91%	2.04E-05	10
9160/13-11-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9160/13-11-13	AI	3	EXIDA	STAHL 10/02-01 R027	95%	5,96E-05	1
9160/14-11-11	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9163/13-11-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9163/11-81-10	AI	2	EXIDA	STAHL 10/02-01 R027	85%	6,64E-04	5
9182/10-51-13	TI	2	EXIDA	STAHL 07/07-23 R016	71%	7.59E-04	1

Accessories and Spare Parts

Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 06314E00	The termination module is used to integrate non-Ex i field circuit into the system integration solution pac- Carrier type 9195. In such a way it enables a flexible mixture of Ex i and non-Ex i field circuits.	**9191/20-00-50s**
Cover 17,6 yellow transparent (10 pieces)	 01955E00	The yellow covers mark the isolators used for SIL applications. Delivered in packages of 10 pieces.	**200914**
Fuse		Fuse T2,000A 250 V TR5. Minimum order is 10 pieces	**111336**

Dimension drawings (all dimensions in mm) - subject to alterations



5178E00

	Dimension x
Screw terminals	196 mm
Cage clamp terminals	206 mm

Please note: In order to snap in the ISpac modules an extra space of approx. 50 mm is required.
Please read the “ISpac engineering guideline” carefully before you start to engineer the enclosures with incorporated ISpac modules with or without pac- Carriers. The “ISpac engineering guideline” can be downloaded from: www.ispac.info.

Connection list

Connection list – Master 1 and 2
Tricon module 3704E / 3720 (AI 64, 0-5 V)

terminal I.S. 1)		channel	carrier slot	carrier	input no.	pin X01 conn. # 1 (Elco 56 female)		terminal I.S. 1)		channel	carrier slot	carrier	input no.	pin X01 conn. # 2 (Elco 56 female)
10	+	1	1	Master 1	1	AA		10	+	33	1	Master 2	33	AA
11	-							11	-					
10	+	2	2		2	LL		10	+	34	2		34	LL
11	-							11	-					
10	+	3	3		3	z		10	+	35	3		35	z
11	-							11	-					
10	+	4	4		4	EE		10	+	36	4		36	EE
11	-							11	-					
10	+	5	5		5	p		10	+	37	5		37	p
11	-							11	-					
10	+	6	6		6	v		10	+	38	6		38	v
11	-							11	-					
10	+	7	7		7	h		10	+	39	7		39	h
11	-							11	-					
10	+	8	8		8	l		10	+	40	8		40	l
11	-							11	-					
10	+	9	9		9	e		10	+	41	9		41	e
11	-							11	-					
10	+	10	10		10	b		10	+	42	10		42	b
11	-							11	-					
10	+	11	11		11	W		10	+	43	11		43	W
11	-							11	-					
10	+	12	12		12	S		10	+	44	12		44	S
11	-							11	-					
10	+	13	13		13	L		10	+	45	13		45	L
11	-							11	-					
10	+	14	14		14	F		10	+	46	14		46	F
11	-							11	-					
10	+	15	15		15	M		10	+	47	15		47	M
11	-							11	-					
10	+	16	16		16	B		10	+	48	16		48	B
11	-							11	-					

Connection list – Slave 1 and 2

terminal I.S. 1)		channel	carrier slot	carrier	input no.	pin X01 conn. # 1 (Elco 56 female)
10	+	17	1	Slave 1	17	BB
11	-					
10	+	18	2		18	MM
11	-					
10	+	19	3		19	CC
11	-					
10	+	20	4		20	HH
11	-					
10	+	21	5		21	t
11	-					
10	+	22	6		22	x
11	-					
10	+	23	7		23	j
11	-					
10	+	24	8		24	m
11	-					
10	+	25	9		25	f
11	-					
10	+	26	10		26	c
11	-					
10	+	27	11		27	Z
11	-					
10	+	28	12		28	U
11	-					
10	+	29	13		29	P
11	-					
10	+	30	14		30	J
11	-					
10	+	31	15		31	N
11	-					
10	+	32	16		32	C
11	-					

terminal I.S. 1)		channel	carrier slot	carrier	input no.	pin X01 conn. # 2 (Elco 56 female)
10	+	49	1	Slave 2	49	BB
11	-					
10	+	50	2		50	MM
11	-					
10	+	51	3		51	CC
11	-					
10	+	52	4		52	HH
11	-					
10	+	53	5		53	t
11	-					
10	+	54	6		54	x
11	-					
10	+	55	7		55	j
11	-					
10	+	56	8		56	m
11	-					
10	+	57	9		57	f
11	-					
10	+	58	10		58	c
11	-					
10	+	59	11		59	Z
11	-					
10	+	60	12		60	U
11	-					
10	+	61	13		61	P
11	-					
10	+	62	14		62	J
11	-					
10	+	63	15		63	N
11	-					
10	+	64	16		64	C
11	-					

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S – EG / EP – 9195 – 06 – en – 06/2016