

Engineering Guideline

pac-Carriers Type 9195

for Emerson system DeltaV



A solution designed for DeltaV

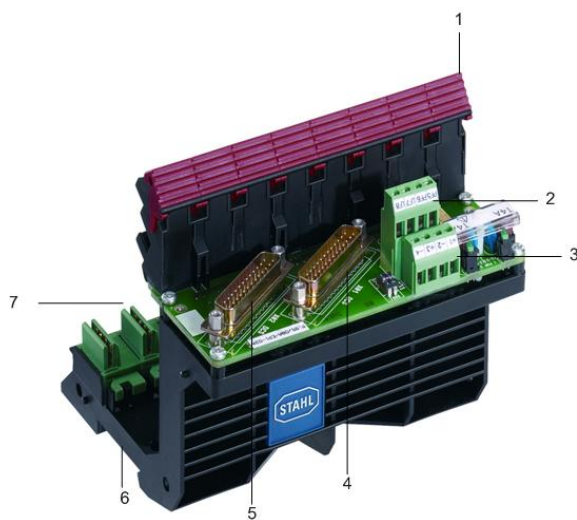
The pac-Carrier reflects the intention of R. STAHL to provide state-of-the-art concepts tailored to the needs of Emerson Process Management for the field of process automation. It is designed to reduce the cost of installation by space saving compact design and simplified installation.

The pac-Carrier solution offers an unmet flexibility as all DIN rail mountable isolators of the ISpac product family could be used for the backplane solution. The Ex i isolators can be mounted easily without the need for a tool. The intrinsically safe signal is directly connected to the modules by means of two different types of detachable connectors - screw type or cage clamp type.

The connection to the classic ID card is simply done by plugging the system cable into the socket of the pac-Carrier.

Your benefits

- The most flexible system for the integration of Ex i / I.S. signals
- Mixing of Ex i and Non-Ex i signals in one pac-Carrier
- Space saving and rugged installation



1. Ejector mechanism
2. Redundant and fused supply
3. Power supply failure and line fault signaling via relay contact
4. System cable plug (channel 1...8)
5. System cable plug (channel 9...16)
6. Installation on DIN rail or mounting plate
7. Integrated pac bus for power supply and line-fault signaling

Example of 8 Slots Carrier



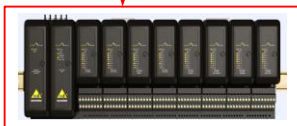
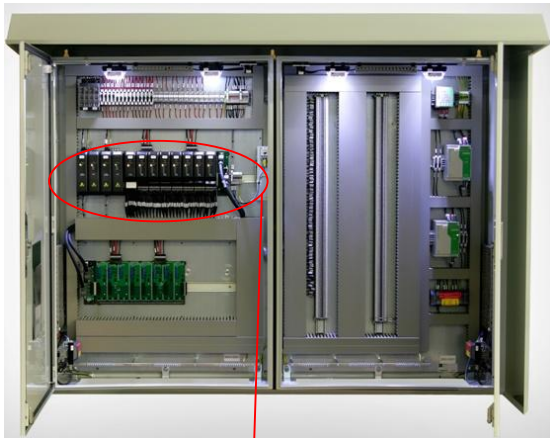
Integrated solutions for Emerson

R. STAHL offers a wide range of customized solutions which allow the user to integrate field signals into the Emerson systems (DeltaV und DeltaV SIS) in an easy and cost effective manner. The solutions designed for Emerson cover the different ways of connecting field devices to process control systems nowadays.

In addition to the products the R. STAHL Competence Centre provides the full range of services in consulting, engineering, commissioning and maintenance in order to contribute to Emerson's overall project business. We do not only regard ourselves as a manufacturer and supplier of components and systems, but also as a provider of comprehensive services.

Our engineers have many years of experience, from the engineering to the handling of smallest details, which is beneficial for you and your customer.

R. STAHL is able to manufacture completely equipped I.S. system cabinets for control room or field station. In addition to our approved R. STAHL standard components additional components from certified suppliers are used.




Example of a customer specific field station for an Emerson system

Your benefits

- Complete solutions for any kind of hazardous location world-wide
- Selection of the explosions protection method which fits best your needs – technically and economically
- Competent consulting and engineering
- In-house manufacturing ensures maximum flexibility and short delivery times
- Complete range of interface solutions – barriers, isolators, remote I/O, fieldbus, HMI and camera

Contents

Control system			pac-Carrier			
Signal type	I/O cards type	Channels	Slots	Stahl cable type	pac-Carrier type	page
DI	VE4001S2T1B1	8	8	9195/C-002	9195/08A-EP1-01A *)	7-11
	VE4001S2T2B1	8	8	9195/C-002	9195/08A-EP1-02A*)	13-18
	VE4001S2T1B3	8	8	9195/C-001	9195/08A-EP1-01A *)	7-11
	VE4001S2T2B3	8	8	9195/C-001	9195/08A-EP1-02A*)	13-18
	VE4001S2T2B5	32	16	9195/C-003	9195/16A-EP1-06U2	37-41
	VE4001S2T2B4	32	16	9195/C-008	9195/16A-EP1-06A9	43-47
DO	VE4002S1T1B1	8	8	9195/C-002	9195/08A-EP1-01A *)	7-11
	VE4002S1T2B1	8	8	9195/C-002	9195/08A-EP1-02A*)	13-18
	VE4002S1T1B3	8	8	9195/C-001	9195/08A-EP1-01A *)	7-11
	VE4002S1T2B3	8	8	9195/C-001	9195/08A-EP1-02A*)	13-18
	VE4002S1T2B5	32	16	9195/C-008	9195/16A-EP1-06A9	43-47
	VE4002S1T2B6	32	16	9195/C-003	9195/16A-EP1-06U2	37-41
AI	VE4003S2B1	8	8	9195/C-002	9195/08A-EP1-02A*)	13-18
	VE4003S2B4	8	8	9195/C-001	9195/08A-EP1-02A*)	13-18
	VE4003S3B4	8	8	9195/C-001**)	9195/08A-EP1-03A*)	19-23
	VE4003S2B6***) (KJ3223X1-BA1 & KJ4001X1-CK1)	16	8	9195/C-003	9195/08A-EP1-05U2	25-29
	VE4003S2B6	16	8	9195/C-007	9195/08A-EP1-05A5	31-35
AO	VE4005S2B1	8	8	9195/C-002	9195/08A-EP1-02A*)	13-18
	VE4005S2B3	8	8	9195/C-001	9195/08A-EP1-02A*)	13-18

*) 1 x pac-Carrier for 2 x DeltaV I/O cards and Mixture of DI/DO possible

**) For DeltaV I/O Module with screw terminal is a cable Sub-D / open end available Type 9195/C-002

***) With 40-pin Mass I/O Termination Block

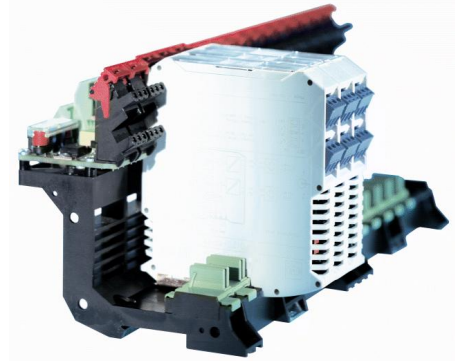




**pac-Carrier
Type 9195 / 08A – EP1 – 01A**

**For Emerson / DeltaV / VE4001S2T1B3,
VE4001S2T1B1, VE4002S1T1B3 or
VE4002S1T1B1**

- Signal types: 2 x (8 x DI) or 2 x (8 x DO) or (8 x DI + 8 x DO)
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9170/20-10-11, 9170/20-11-11, 9170/20-14-11, 9175/20-1x-11, 9176/20-1x-00 and 9172/21-11-00 can be used
- Customized system cable type 9195/C-001 or 9195/C-002*) to automation systems
- Redundant power supply with fault signalization 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, Zone 22

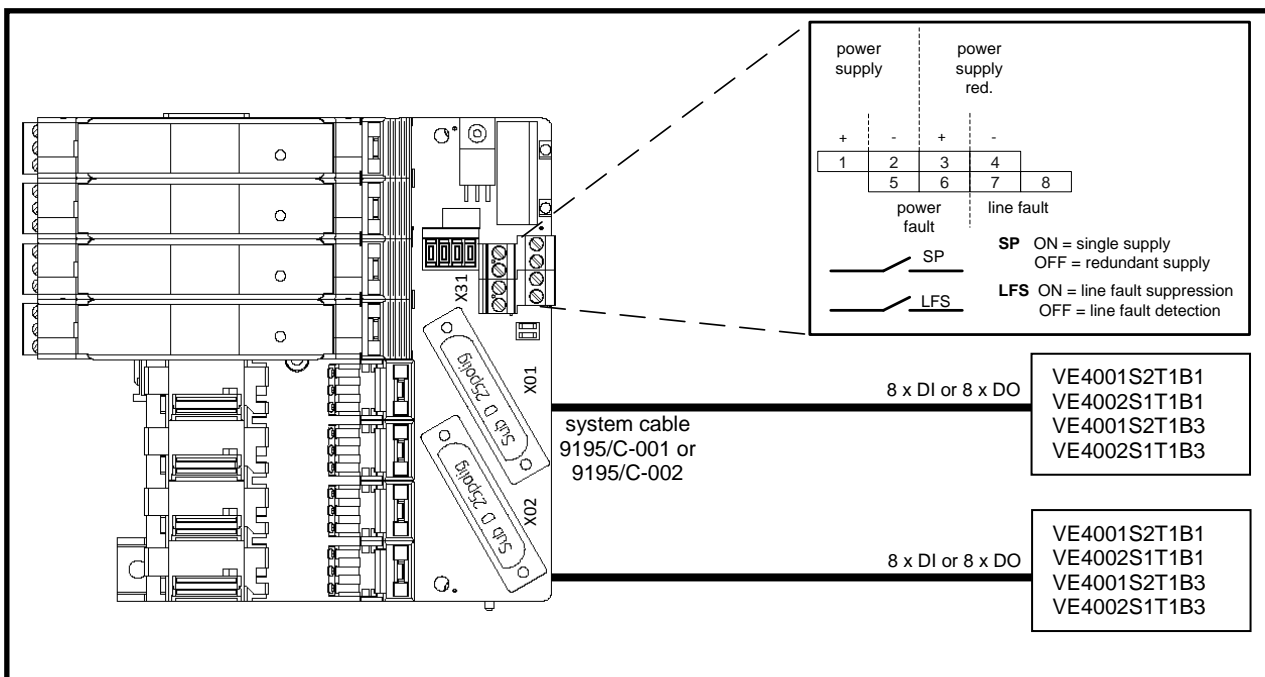


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Comfortable and simple integration of the I.S. isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.



System overview



*) For DeltaV I/O Module with screw terminal is a cable Sub-D / open end available Type 9195/C-002

Selection table

Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl cable type	Type
Emerson	DeltaV	VE4001S2T1B1	8 x DI	8	9195/C-002	9195/08A-EP1-01A (1 x pac-Carrier for 2 x DeltaV I/O-cards. Mixture of DI and DO possible)
		VE4002S1T1B1	8 x DO		9195/C-002	
		VE4001S2T1B3	8 x DI		9195/C-001	
		VE4002S1T1B3	8 x DO		9195/C-001	

Technical data

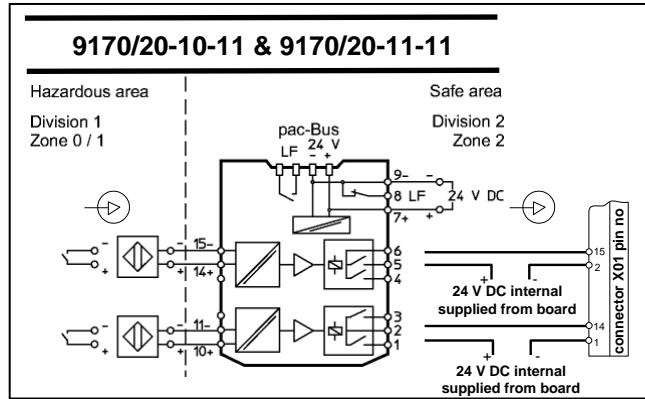
Certificates	BVS 03 ATEX E213 X
Explosion protection	⊕ II 3 G Ex nA nC II T4
Installation	In Zone 2, Zone 22 (non conductible dust), Div. 2 and in the safe area
Power supply	(X31)
Nominal voltage U_N	24 V DC (19 V ... 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	2 LED green „PWR1“; „PWR2“
Fuse	2 x TR5; T 2,0 A; exchangeable, for primary and redundant supply
Polarity reversal protection	yes
Connection field devices	
Connection	at the terminals of the I.S. isolators (see “signal loops”)
Number of channels	16
Connection automation system	(X01, X02)
Connection	plug Sub D 25 pole for 9195/C-001 or 9195/C-002
Number of channels	up to 16
Error messaging	(X31)
Power supply failure PF	Contact (35 V / 100 mA), closed in good conditions
Line fault LF (of ISpac modules)	Contact (35 V / 100 mA), closed in good conditions
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail, EN 50022 (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.

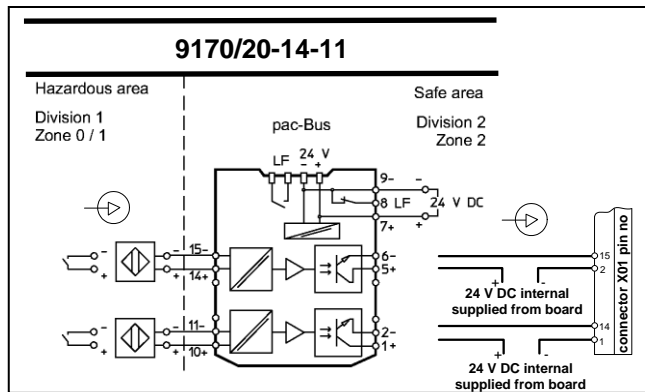
Switching repeater (DI)

for NAMUR proximity switches and contacts
- relay output



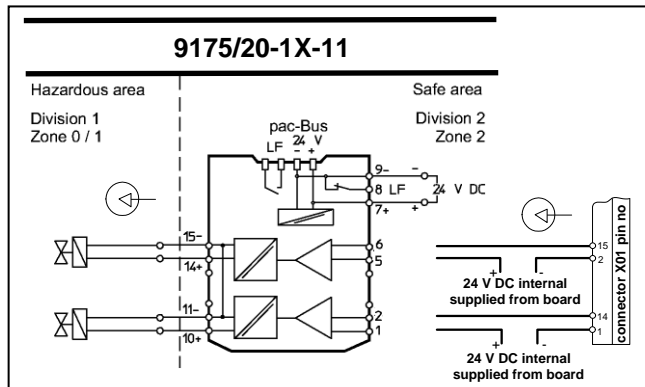
Switching repeater (DI)

for NAMUR proximity switches and contacts
- electronic output



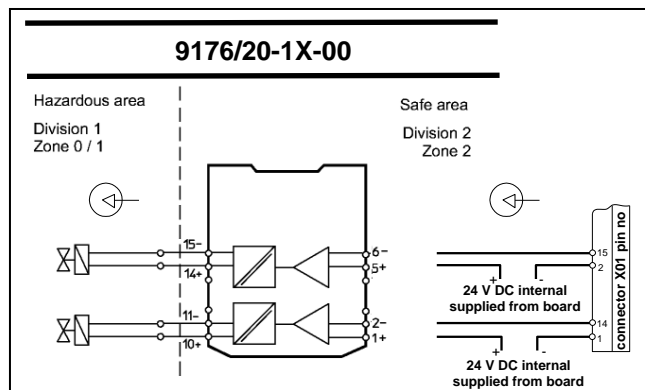
Digital output (DO)

for solenoid valves and indicators



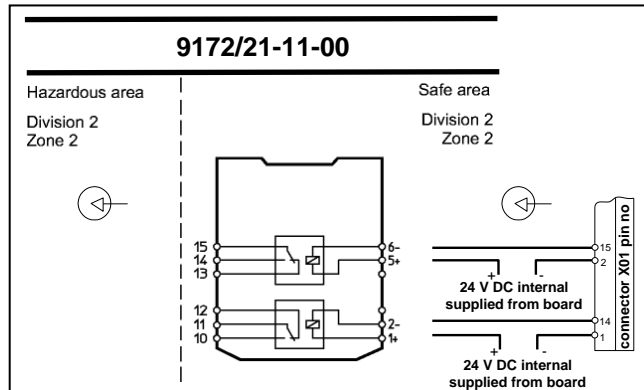
Digital output (DO)

for solenoid valves and indicators
- loop powered




Relay Module (DO)

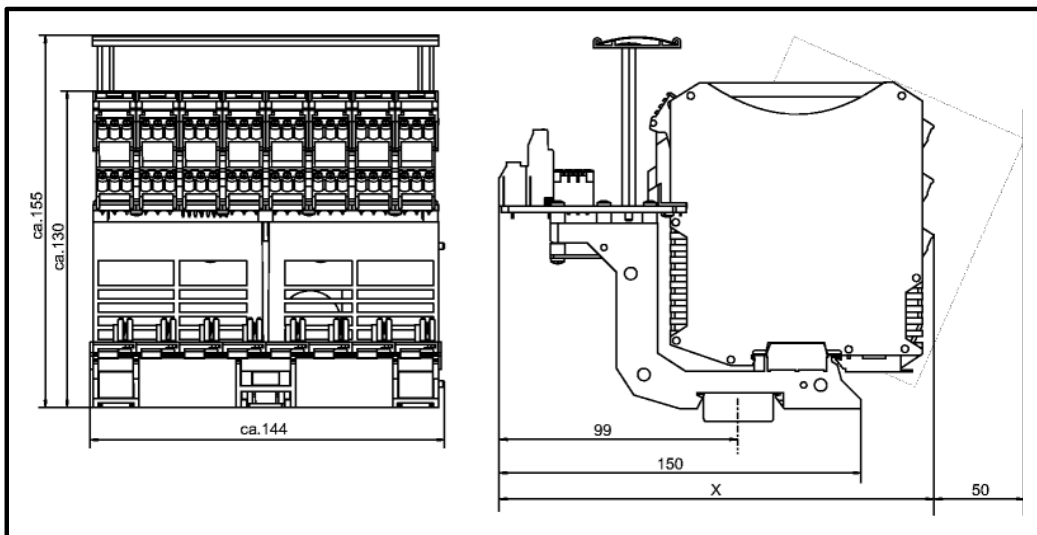
For digital Signals and control circuits



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
System cable		Customized system cable Pin on 16-pin Mass Termination Block	9195/C-001
		Customized system cable type 9195/C-002 for DeltaV I/O Module with Sub-D 25 system cable 16 x 0,35 (AWG 28) grey	9195/C-002

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



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	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

I/O card-no	terminal	I.S.	carrier slot: input no.	channel	pin (Sub D 25pole) X01 system cable X01		pin (Sub D 25pole) X02 system cable X02		Cable type 9195/C-002
1	1*)	+	slot 1	1	+	14			white
					-	1			brown
	1*)	+	slot 1	2	+	15			green
					-	2			yellow
	1*)	+	slot 2	3	+	16			grey
					-	3			pink
	1*)	+	slot 2	4	+	17			blue
					-	4			red
	1*)	+	slot 3	5	+	18			black
					-	5			violet
	1*)	+	slot 3	6	+	19			grey / pink
					-	6			red / blue
	1*)	+	slot 4	7	+	20			white / green
					-	7			brown / green
	1*)	+	slot 4	8	+	21			white / yellow
					-	8			yellow / brown
2	1*)	+	slot 5	9	+	14			white
					-	9			brown
	1*)	+	slot 5	10	+	15			green
					-	10			yellow
	1*)	+	slot 6	11	+	16			grey
					-	11			pink
	1*)	+	slot 6	12	+	17			blue
					-	12			red
	1*)	+	slot 7	13	+	18			black
					-	13			violet
	1*)	+	slot 7	14	+	19			grey / pink
					-	14			red / blue
	1*)	+	slot 8	15	+	20			white / green
					-	15			brown / green
	1*)	+	slot 8	16	+	21			white / yellow
					-	16			yellow / brown

*) different possibilities of field device connections; for further information see: manual of 9170/20-10-11 or 9170/20-11-11 9170/20-14-11 or 9172/21-11-00 or 9175/20-1x-11 or 9176/20-1x-00



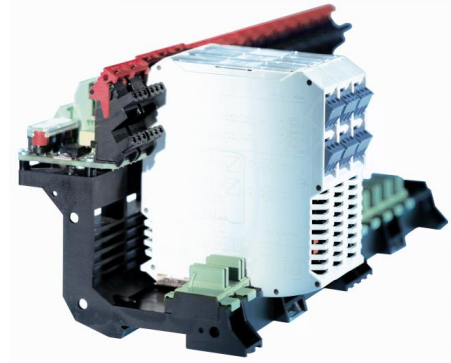
We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustration cannot be considered binding.



**pac-Carrier
Type 9195 / 08A – EP1 – 02A**

**For Emerson / DeltaV / VE4003S2B1,
VE4005S2B1, VE4001S2T2B1, VE4002S1T2B1
VE4001S2T2B3, VE4002S1T2B3, VE4003S2B4
or VE4005S2B3**

- Signal types: 2 x (8 x DI) or 2 x (8 x DO) or 2 x (8 x AI) or 2 x (8 x AO) or the Mixture of DI, DO, AI and AO possible
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9170/20-10-11, 9170/20-11-11, 9170/20-14-11, 9175/20-1x-11, 9160/23-10-11, 9163/23-10-11, 9167/2x-11-00 and 9165/26-11-11 can be used
- Customized system cable type 9195/C-001 or 9195/C-002*) 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

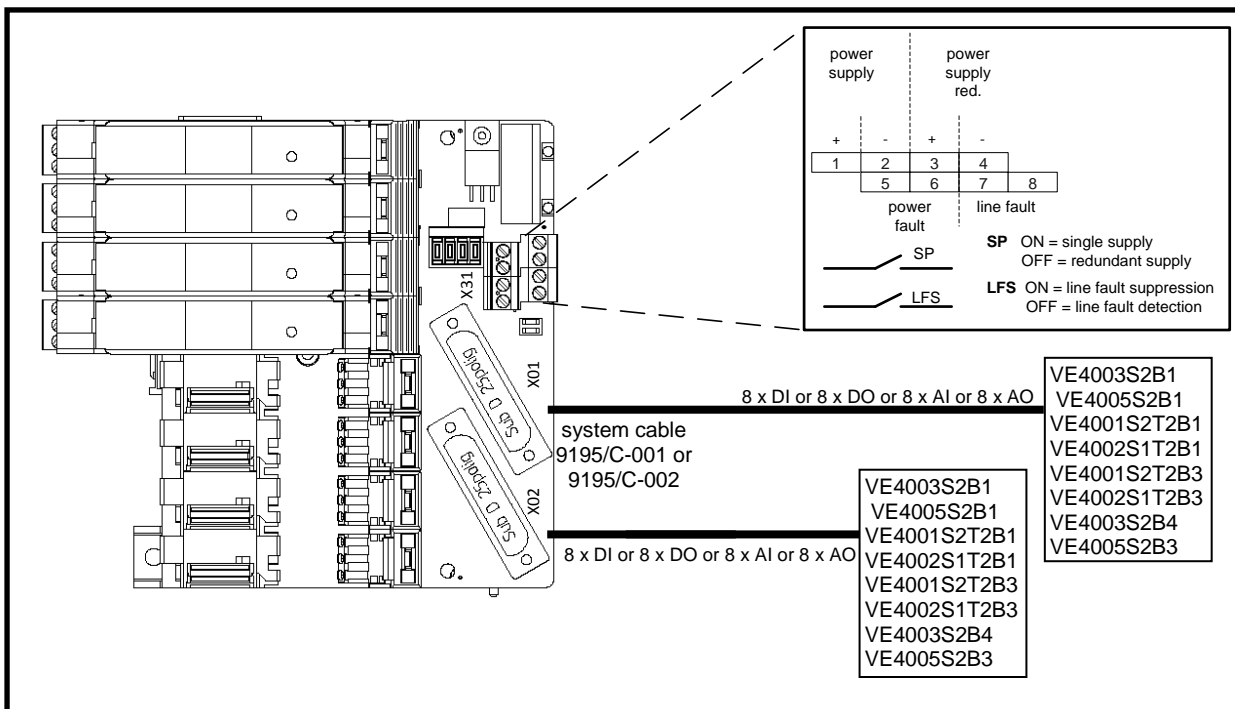


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Comfortable and simple integration of the I.S. isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.



System overview



*) For DeltaV I/O Module with screw terminal is a cable Sub-D / open end available Type 9195/C-002

Selection table						
Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4003S2B1	8 x AI	8	9195/C-002	9195/08A-EP1-02A (1 x pac-Carrier for 2 x DeltaV I/O-cards. Mixture of DI, DO, AI and AO possible)
		VE4003S2B1	8 x AI		9195/C-002	
		VE4001S2T2B1	8 x DI		9195/C-002	
		VE4002S1T2B1	8 x DO		9195/C-002	
		VE4001S2T2B3	8 x DI		9195/C-001	
		VE4002S1T2B3	8 x DO		9195/C-001	
		VE4003S2B4	8 x AI		9195/C-001	
		VE4005S2B3	8 x AO		9195/C-001	
Technical data						
Certificates		BVS 03 ATEX E213 X				
Explosion protection		⊕ II 3 G Ex nA nC II T4				
Installation		In Zone 2, Zone 22 (non conductible dust), 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 field devices						
Connection		at the terminals of the I.S. isolators (see "signal loops")				
Number of channels		16				
Connection automation system		(X01, X02)				
Connection		plug Sub-D 25 pole for 9195/C-001 or 9195/C-002				
Number of channels		up to 16				
Error messaging		(X31)				
Power supply failure PF		Contact (35 V / 100 mA), closed in good conditions				
Line fault LF (of ISpac modules)		Contact (35 V / 100 mA), closed in good conditions				
Setting switch „SP“		Power failure message suppressed for redundant supply (single supply)				
Setting switch „LFS“		Line fault message suppressed				
Ambient conditions						
Ambient temperature		max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)				
Storage temperature		- 40 °C ... + 80 °C				
Relative humidity (no condensation)		≤95 %				
Mechanical data						
Weight		approx. 320 g				
Mounting type		on DIN rail, EN 50022 (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				

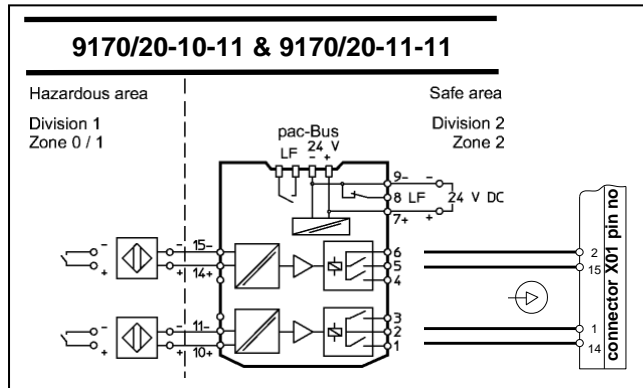


Signal loops

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.

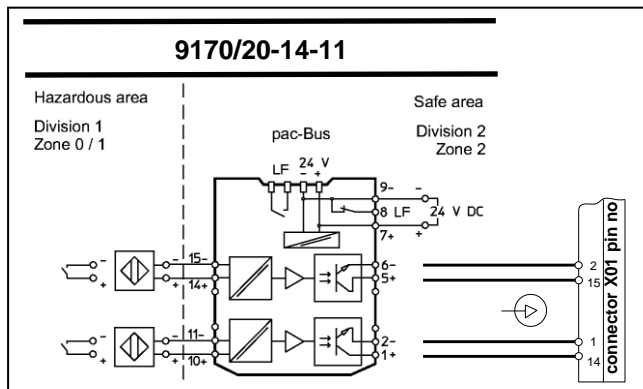
Switching repeater (DI)

for NAMUR proximity switches and contacts
- relay output



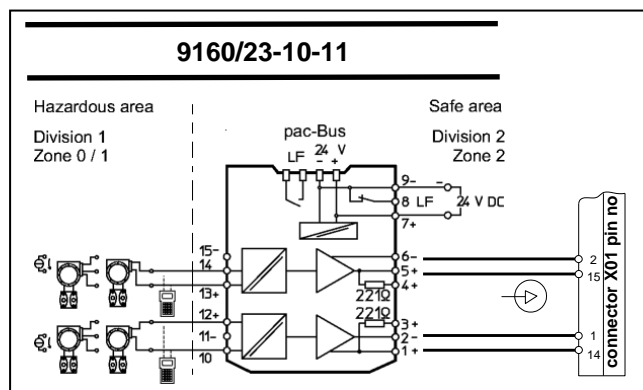
Switching repeater (DI)

for NAMUR proximity switches and contacts
- electronic output



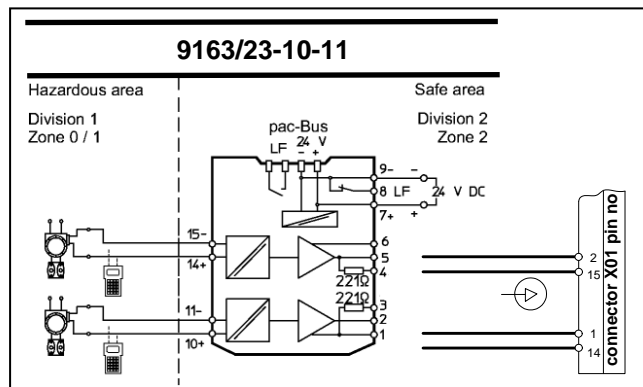
Transmitter supply unit (AI)

for 2-, 3-wire transmitter and mA-sources
for 2-wire transmitter with HART

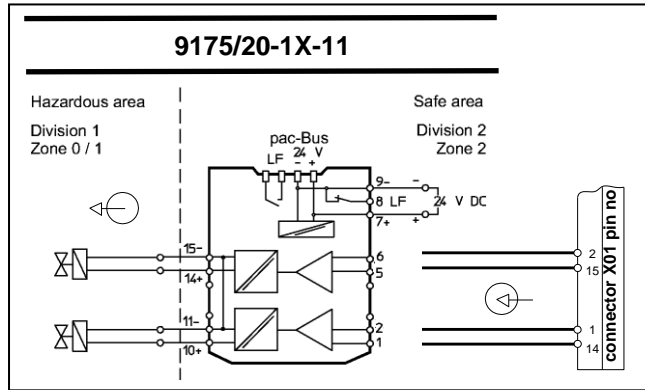


Isolating repeater (AI)

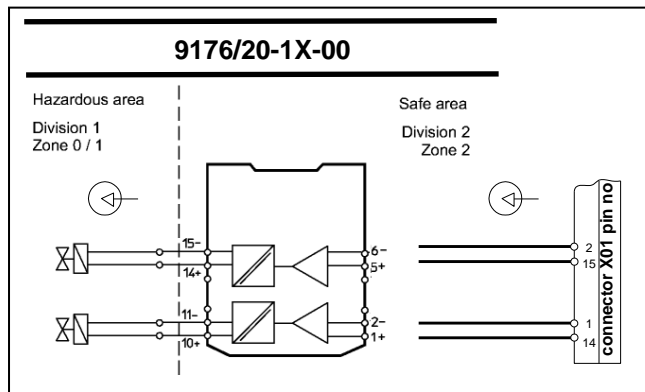
for 4-wire transmitter and mA-sources
bi-directional HART communication



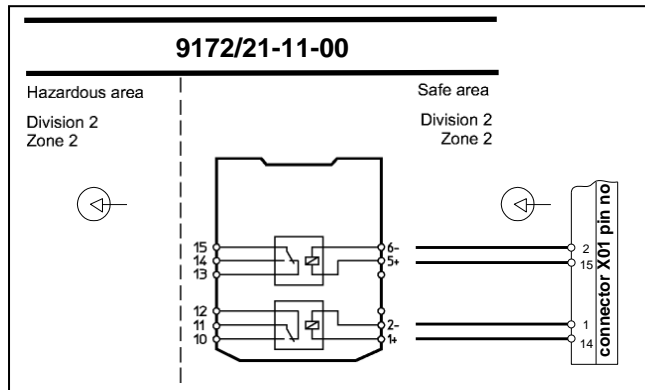
Digital output (DO)
for solenoid valves and indicators



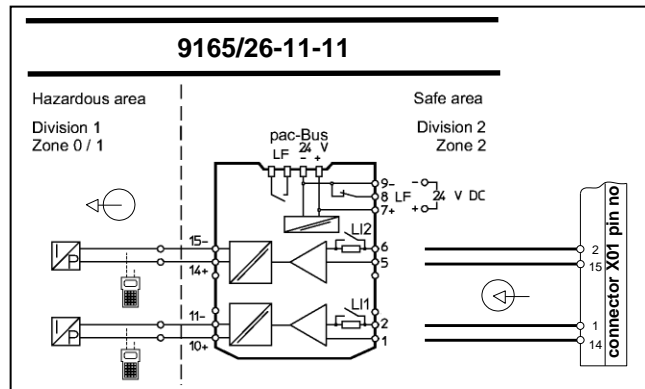
Digital output (DO)
for solenoid valves and indicators
- loop powered



Relay Module (DO)
For digital Signals and control circuits

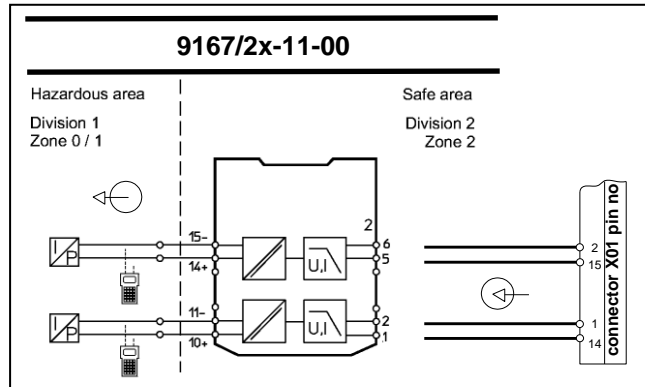


Isolating repeater (AO)
for control valves, i/p-converters or indicators
bi-directional HART communication




Isolating repeater (AO)

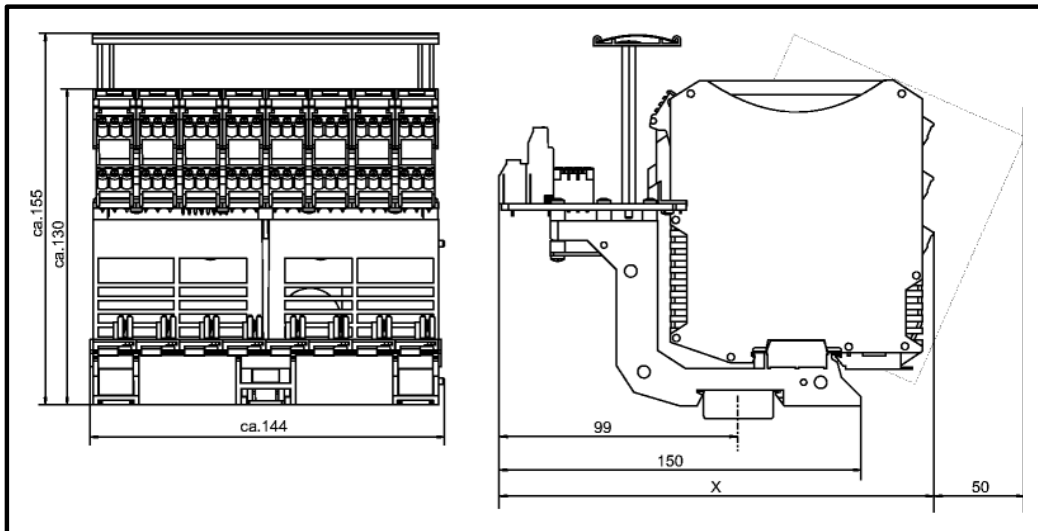
Loop-powered, for control valves,
i/p-converters or indicators
bi-directional HART communication



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
System cable		Customized system cable Pin on 16-pin Mass Termination Block	9195/C-001
		Customized system cable type 9195/C-002 for DeltaV I/O Module with Sub-D 25 system cable 16 x 0,35 (AWG 28) grey	9195/C-002

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



12471E00

	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

I/O card-no	terminal I.S.	carrier slot: output no.	channel	pin (Sub D 25pole) X01 system cable X01	pin (Sub D 25pole) X02 system cable X02	Cable type 9195/C-002
1	1*) + -	slot 1	1	+ 14		white
	- -		1	- 1		brown
	1*) + -	slot 1	2	+ 15		green
	- -		2	- 2		yellow
	1*) + -	slot 2	3	+ 16		grey
	- -		3	- 3		pink
	1*) + -	slot 2	4	+ 17		blue
	- -		4	- 4		red
1*) + -	slot 3	5	+ 18	black		
- -		5	- 5	violet		
1*) + -	slot 3	6	+ 19	grey / pink		
- -		6	- 6	red / blue		
1*) + -	slot 4	7	+ 20	white / green		
- -		7	- 7	brown / green		
1*) + -	slot 4	8	+ 21	white / yellow		
- -		8	- 8	yellow / brown		
2	1*) + -	slot 5	9	+ 14	white	
	- -		9	- 1	brown	
	1*) + -	slot 5	10	+ 15	green	
	- -		10	- 2	yellow	
	1*) + -	slot 6	11	+ 16	grey	
	- -		11	- 3	pink	
	1*) + -	slot 6	12	+ 17	blue	
	- -		12	- 4	red	
1*) + -	slot 7	13	+ 18	black		
- -		13	- 5	violet		
1*) + -	slot 7	14	+ 19	grey / pink		
- -		14	- 6	red / blue		
1*) + -	slot 8	15	+ 20	white / green		
- -		15	- 7	brown / green		
1*) + -	slot 8	16	+ 21	white / yellow		
- -		16	- 8	yellow / brown		

*) different possibilities of field device connections; for further information see: manual of

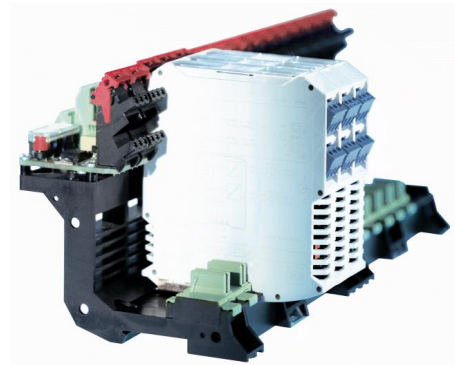
9160/23-10-11 or 9163/23-10-11 or 9165/26-11-11 or 9167/2x-11-00 or 9170/20-10-11 or 9170/20-11-11 or 9170/20-14-11 or 9172/21-11-00 or 9175/20-1x-11 or 9176/20-1x-00



We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustration cannot be considered binding.

pac-Carrier
Type 9195 / 08A – EP1 – 03A

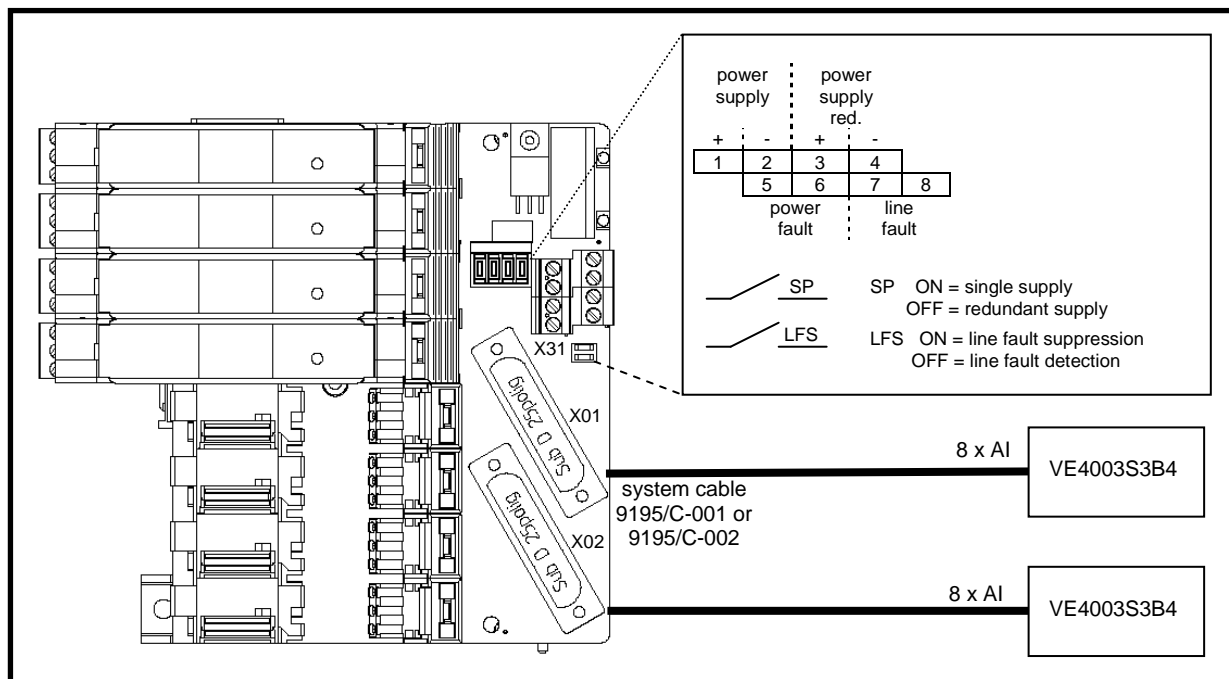
- For Emerson / DeltaV / VE4003S3B4
- Signal types: 2 x (8 x AI)
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9160/23-11-11, 9163/23-11-11, 9146/20-11-11 and 9182/20-51-11 can be used
- Customized system cable type 9195/C-001 or 9195/C-002 *) to automation systems
- Redundant power 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, Zone 22 (non conductive dust) and Div. 2



05179E00

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

System overview



*) For DeltaV I/O Module with screw terminal is a cable Sub-D / open end available Type 9195/C-002



Selection table

Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O-cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4003S3B4	8 x AI	8	9195/C-001 9195/C-002	9195/08A-EP1-03A (1 x pac-Carrier for 2 x DeltaV I/O-cards)

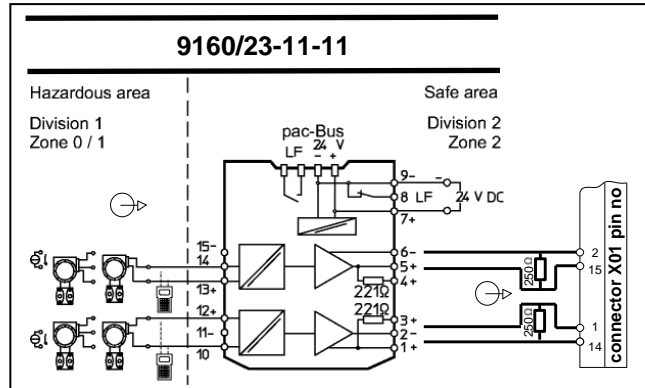
Technical data

Certificates	BVS 03 ATEX E213 X
Explosion protection	⊕ II 3 G Ex nA nC II T4
Installation	In Zone 2, Zone 22 (non conductible dust), 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 field devices	
Connection	at the terminals of the I.S. isolators (see "signal loops")
Number of channels	16
Connection automation system	(X01, X02)
Connection	plug Sub D 25 pole for 9195/C-001 or 9195/C-002
Number of channels	up to 16
Error messaging	(X31)
Power supply failure PF	Contact (35 V / 100 mA), closed in good conditions
Line fault LF (of ISpac modules)	Contact (35 V / 100 mA), closed in good conditions
Setting switch „SP“	Power failure message suppressed for redundant supply (single supply)
Setting switch „LFS“	Line fault message suppressed
Ambient conditions	
Ambient temperature	max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)
Storage temperature	- 40 °C ... + 80 °C
Relative humidity (no condensation)	≤95 %
Mechanical data	
Weight	approx. 320 g
Mounting type	on DIN rail, EN 50022 (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

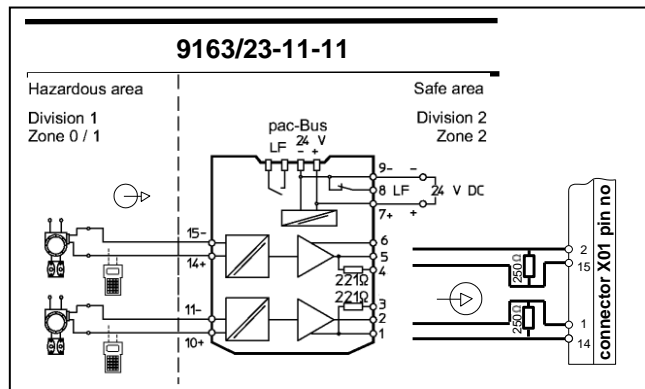
Signal loops

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.

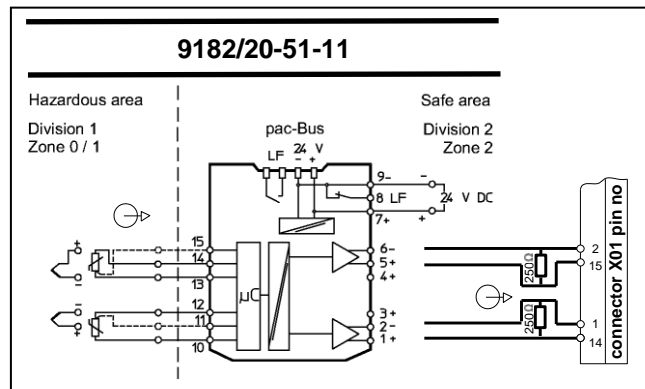
Transmitter supply unit (AI)
for 2-, 3-wire transmitter and mA sources
for 2-wire transmitter with HART



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

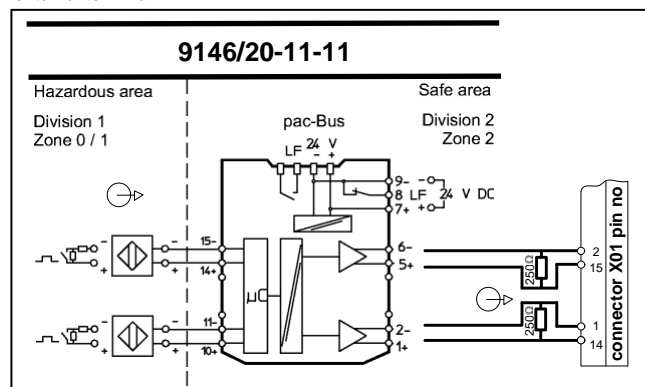


Temperature transmitter (AI)
for resistance thermometer,
thermocouple and RTD
(Configuration by means of DIP
switches or ISpac Wizard software)




*) Suitable for 4-wire (Pins: 10, 11, 12, and 14).
The connection of two sensors in 4-wire scheme requires an additional external terminal.

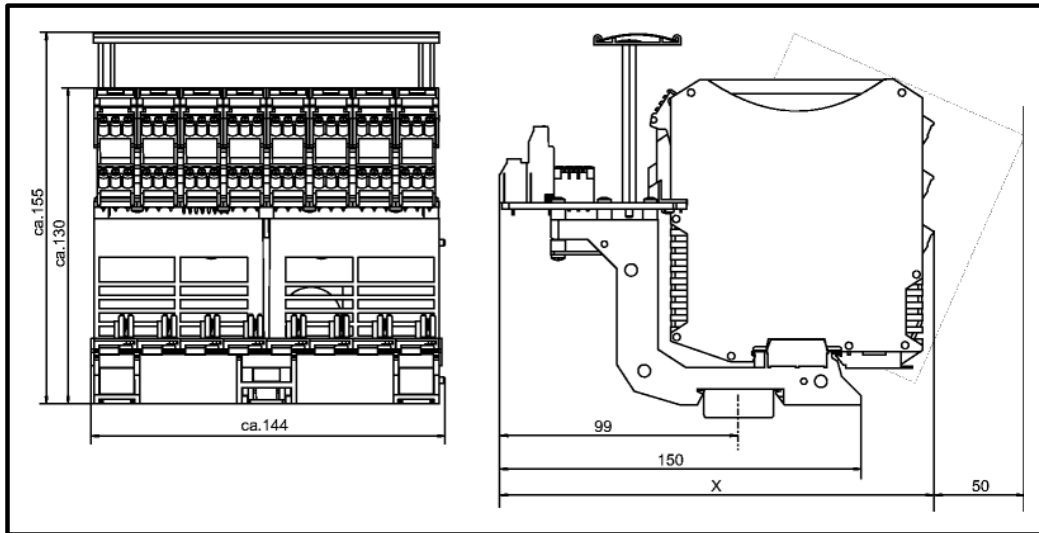
Frequency transmitter
The frequency transmitter allows
to monitor the speed of rotating
devices in the hazardous area



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
System cable		Customized system cable Pin on 16-pin Mass Termination Block	9195/C-001
		Customized system cable type 9195/C-002 for DeltaV I/O Module with Sub-D 25 system cable 16 x 0,35 (AWG 28) grey	9195/C-002

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



12471E00



	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

I/O card-no	terminal I.S.	carrier slot output no.	channel	pin (Sub D 25pole) X01 system cable X01	pin (Sub D 25pole) X02 system cable X02	Cable type 9195/C-002
1	1*) + -	slot 1	1	+ 14		white
			1	- 1		brown
	1*) + -	slot 1	2	+ 15		green
			2	- 2		yellow
	1*) + -	slot 2	3	+ 16		grey
			3	- 3		pink
	1*) + -	slot 2	4	+ 17		blue
			4	- 4		red
1*) + -	slot 3	5	+ 18	black		
		5	- 5	violet		
1*) + -	slot 3	6	+ 19	grey / pink		
		6	- 6	red / blue		
1*) + -	slot 4	7	+ 20	white / green		
		7	- 7	brown / green		
1*) + -	slot 4	8	+ 21	white / yellow		
		8	- 8	yellow / brown		
2	1*) + -	slot 5	9	+ 14	white	
			9	- 1	brown	
	1*) + -	slot 5	10	+ 15	green	
			10	- 2	yellow	
	1*) + -	slot 6	11	+ 16	grey	
			11	- 3	pink	
	1*) + -	slot 6	12	+ 17	blue	
			12	- 4	red	
1*) + -	slot 7	13	+ 18	black		
		13	- 5	violet		
1*) + -	slot 7	14	+ 19	grey / pink		
		14	- 6	red / blue		
1*) + -	slot 8	15	+ 20	white / green		
		15	- 7	brown / green		
1*) + -	slot 8	16	+ 21	white / yellow		
		16	- 8	yellow / brown		

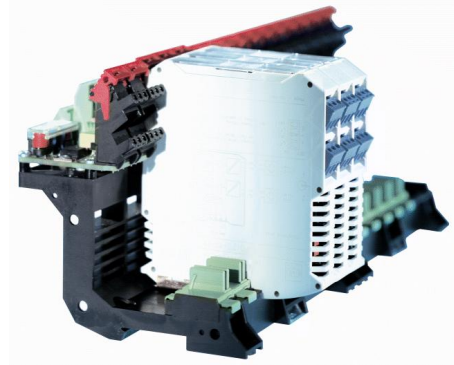
*) different possibilities of field device connections; for further information see: manual of 9160/23-11-11 or 9163/23-11-11 or 9182/20-51-11 or 9146/20-11-11





**pac-Carrier
Type 9195/08A-EP1-05U2**

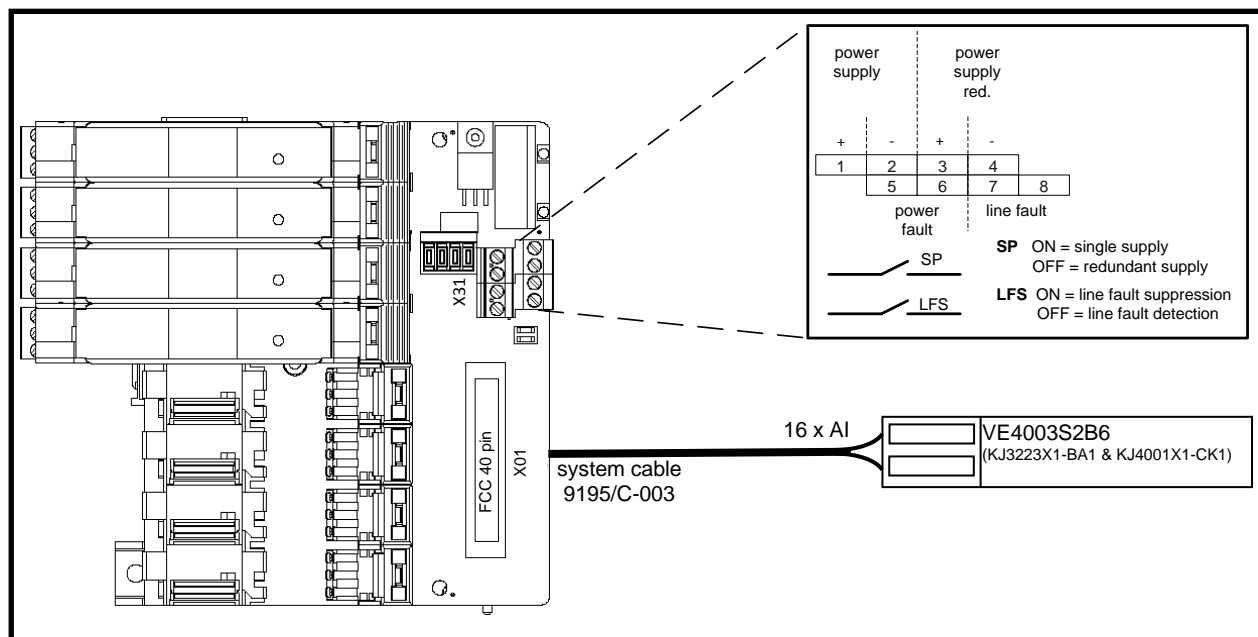
- For Emerson / DeltaV / VE4003S2B6 *) with KJ3223X1-BA1 & KJ4001X1-CK1
- Signal types: 16 x AI
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9160/23-10-11, 9163/23-10-11 and 9182/20-59-11 can be used
- Customized system cable type 9195/C-003 to automation systems
- Redundant power supply 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, Zone 22 (non conductible dust) and Div. 2



05179E00

Comfortable and simple integration of the Ex i isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.

System overview



*) With 40-pin Mass I/O Termination Block or the I/O-cards types KJ3223X1-BA1 and KJ4001X1-CK1



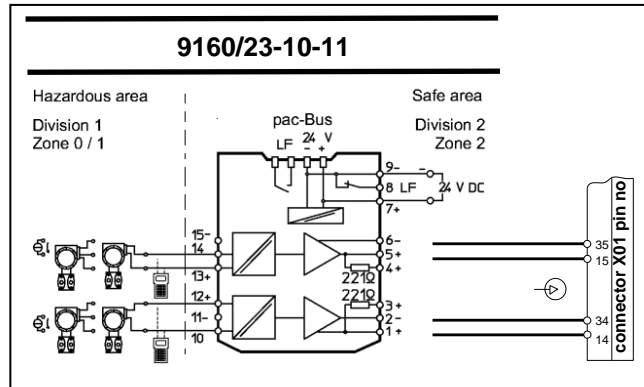
Selection table						
Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4003S2B6	16 x AI	8	9195/C-003	9195/08A-EP1-05U2
Technical data						
Certificates		BVS 03 ATEX E213 X				
Explosion protection		⊕ II 3 G Ex nA nC II T4				
Installation		In Zone 2, Zone 22 (non conductible dust), 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 field devices						
Connection		at the terminals of the I.S. isolators (see “signal loops”)				
Number of channels		16				
Connection automation system		(X01)				
Connection		plug FCC 40 pole for 9195/C-003 (40-pin Mass Termination Block)				
Number of channels		up to 16				
Error messaging		(X31)				
Power supply failure PF		Contact (35 V / 100 mA), closed in good conditions				
Line fault LF (of ISpac modules)		Contact (35 V / 100 mA), closed in good conditions				
Setting switch „SP“		Power failure message suppressed for redundant supply (single supply)				
Setting switch „LFS“		Line fault message suppressed				
Ambient conditions						
Ambient temperature		max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)				
Storage temperature		- 40 °C ... + 80 °C				
Relative humidity (no condensation)		≤95 %				
Mechanical data						
Weight		approx. 320 g				
Mounting type		on DIN rail, EN 50022 (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.

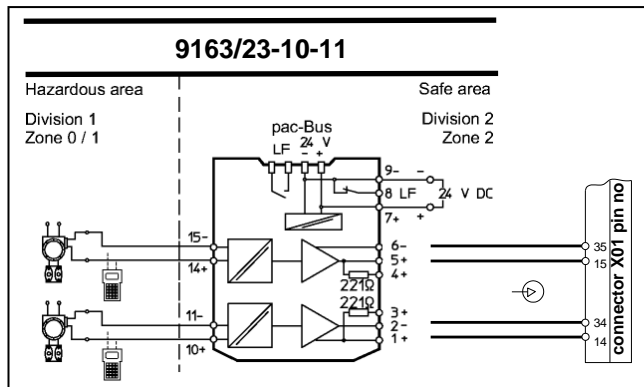
Transmitter supply unit (AI)

for 2-, 3-wire transmitter and mA sources
for 2-wire transmitter with HART



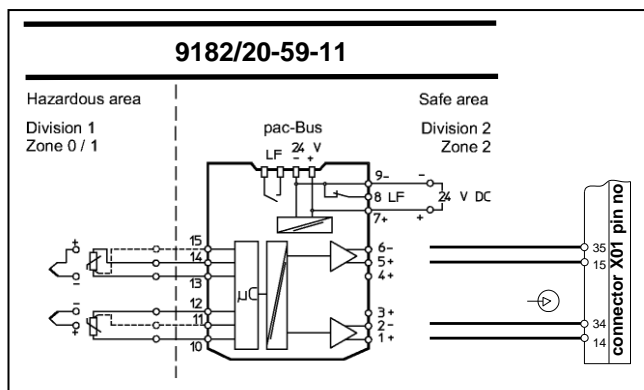
Isolating Repeater (AI)

Suitable for 4-wire HART transmitters
and (HART) mA sources



Temperature transmitter (AI)


for resistance thermometer, thermocouple and RTD
(Configuration by means of DIP Switches or
ISpac Wizard software)



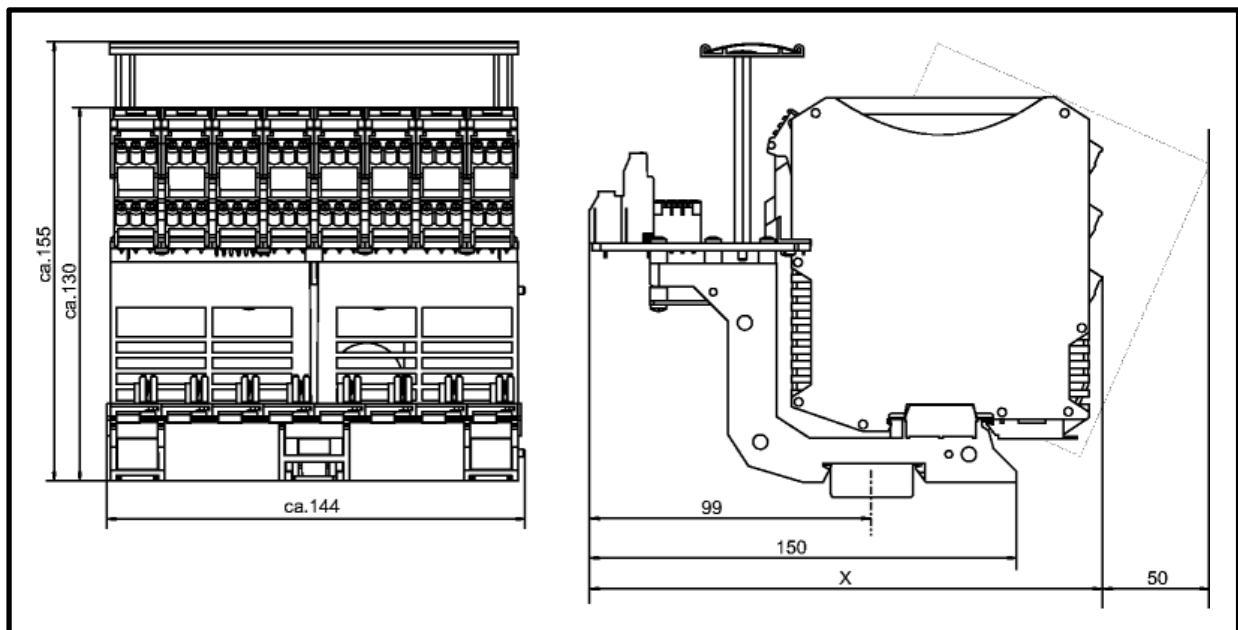
*) Suitable for 4-wire (Pins: 10, 11, 12, and 14).
The connection of two sensors in 4-wire scheme requires an additional
external terminal.



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
System cable		Customized system cable type 9195/C-003 for DeltaV I/O Module with flat-cable connector (FCC) system cable 34 x 0,127 (AWG 28) grey	9195/C-003

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



12472E00

	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

channel	terminal I.S. modules		carrier slot	X01 (FCC40)		KJ4001X1-CK1		input no.
	AI: 9160 AI: 9163 AI: 9182	polarity		pin no.	polarity	J3	J4	
1	1*)	+	1	14	+	14		1
		-		34	-		14	
2	1*)	+	1	15	+	15		2
		-		35	-		15	
3	1*)	+	2	16	+	16		3
		-		36	-		16	
4	1*)	+	2	12	+	12		4
		-		32	-		12	
5	1*)	+	3	18	+	18		5
		-		38	-		18	
6	1*)	+	3	13	+	13		6
		-		33	-		13	
7	1*)	+	4	10	+	10		7
		-		30	-		10	
8	1*)	+	4	11	+	11		8
		-		31	-		11	
9	1*)	+	5	7	+	7		9
		-		27	-		7	
10	1*)	+	5	8	+	8		10
		-		28	-		8	
11	1*)	+	6	4	+	4		11
		-		24	-		4	
12	1*)	+	6	20	+	20		12
		-		40	-		20	
13	1*)	+	7	5	+	5		13
		-		25	-		5	
14	1*)	+	7	1	+	1		14
		-		21	-		1	
15	1*)	+	8	2	+	2		15
		-		22	-		2	
16	1*)	+	8	3	+	3		16
		-		23	-		3	

*) different possibilities of field device connections; for further information see: manual of 9160/23-10-11 or 9163/23-10-11 or 9182/20-59-11

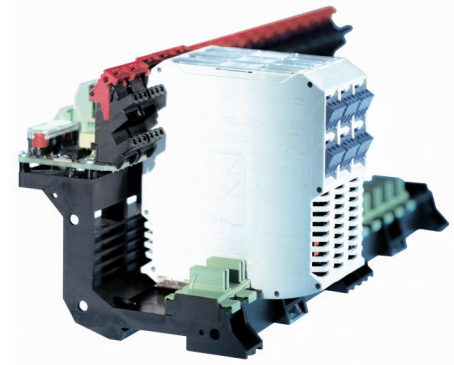
We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustration cannot be considered binding.





**pac-Carrier
Type 9195/08A-EP1-05A2**

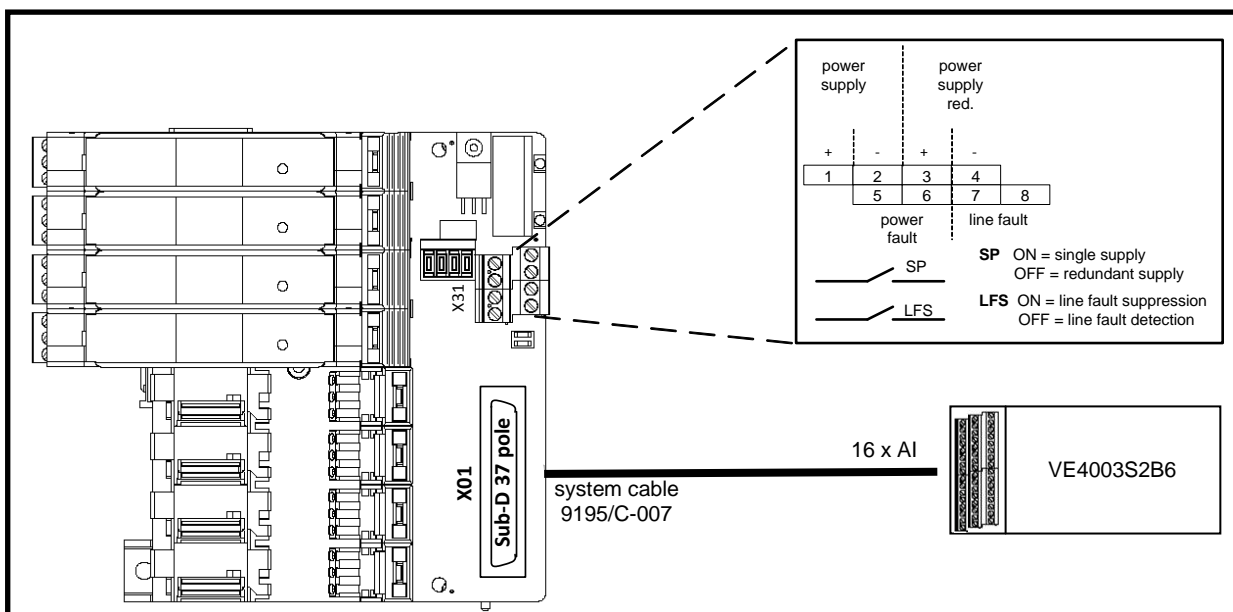
- For Emerson / DeltaV / VE4003S2B6
- Signal types: 16 x AI
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9160/23-10-11, 9163/23-10-11 and 9182/20-59-11 can be used
- Customized system cable type 9195/C-007 to automation systems
- Redundant power supply with message contact and exchangeable 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, Zone 22 (non conductible dust) and Div. 2



05179E00

Comfortable and simple integration of the Ex i isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.

System overview



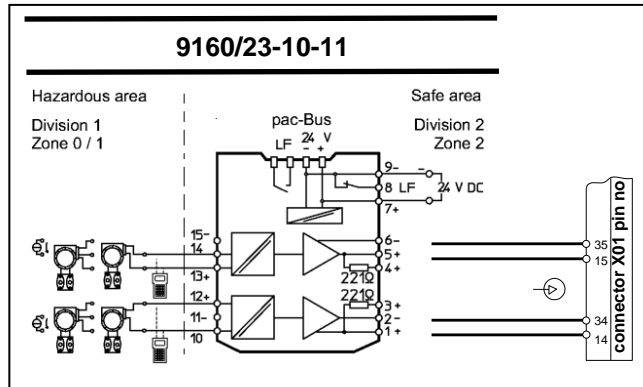
Selection table						
Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4003S2B6	16 x AI	8	9195/C-007	9195/08A-EP1-05A5
Technical data						
Certificates		BVS 03 ATEX E213 X				
Explosion protection		⊕ II 3 G Ex nA nC II T4				
Installation		In Zone 2, Zone 22 (non conductible dust), 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 field devices						
Connection		at the terminals of the I.S. isolators (see “signal loops”)				
Number of channels		16				
Connection automation system		(X01)				
Connection		plug Sub-D 37 pole for 9195/C-007 (40-pin Termination Block)				
Number of channels		up to 16				
Error messaging		(X31)				
Power supply failure PF		Contact (35 V / 100 mA), closed in good conditions				
Line fault LF (of ISpac modules)		Contact (35 V / 100 mA), closed in good conditions				
Setting switch „SP“		Power failure message suppressed for redundant supply (single supply)				
Setting switch „LFS“		Line fault message suppressed				
Ambient conditions						
Ambient temperature		max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)				
Storage temperature		- 40 °C ... + 80 °C				
Relative humidity (no condensation)		≤95 %				
Mechanical data						
Weight		approx. 320 g				
Mounting type		on DIN rail, EN 50022 (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.

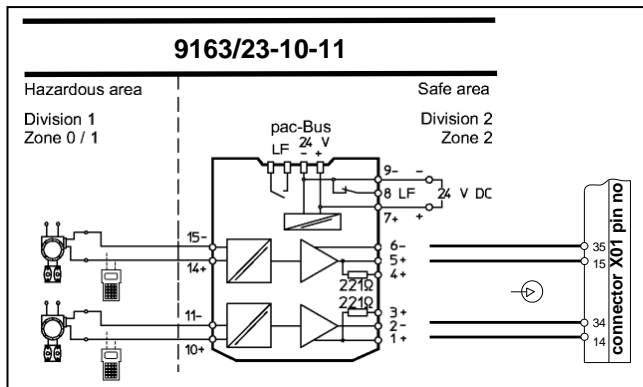
Transmitter supply unit (AI)

for 2-, 3-wire transmitter and mA sources
for 2-wire transmitter with HART



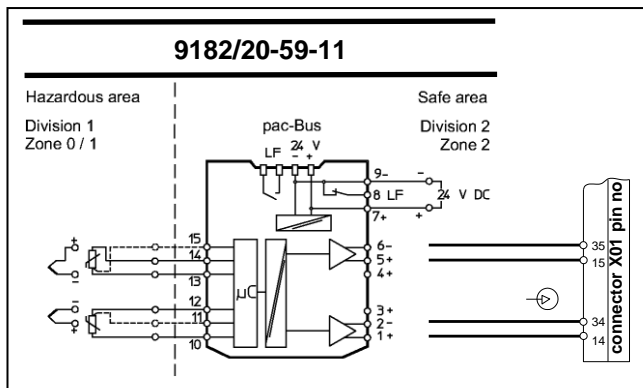
Isolating Repeater (AI)

Suitable for 4-wire HART transmitters
and (HART) mA sources



Temperature transmitter (AI)


for resistance thermometer, thermocouple and RTD
(Configuration by means of DIP Switches or
ISpac Wizard software)



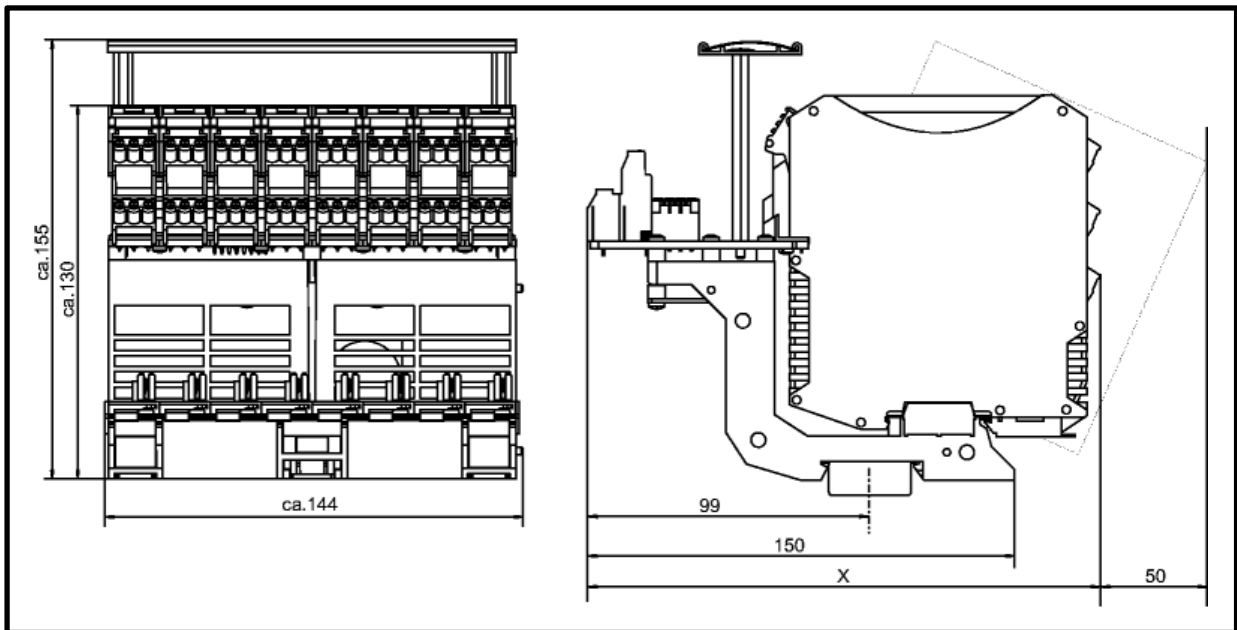
*) Suitable for 4-wire (Pins: 10, 11, 12, and 14).
The connection of two sensors in 4-wire scheme requires an additional external terminal.



Accessories and Spare Parts

Designation	Illustration	Description	Order number
Non-Ex i Termination Module	 <p>06314E00</p>	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
System cable		Customized system cable type 9195/C-008 for DeltaV I/O Module with Sub-D 37 system cable 40 x 0,35 (AWG 28) grey	9195/C-007

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



12472E00

	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

channel	terminal I.S. modules		carrier slot	X01 (Sub-D 37)		Cable 9195/C-007 color code
	AI: 9160 AI: 9163 AI: 9182	polarity			polarity	
1	1*)	+	1	1	+	White
		-		20	-	Brown
2	1*)	+	1	2	+	Green
		-		21	-	Yellow
3	1*)	+	2	3	+	Gray
		-		22	-	Pink
4	1*)	+	2	4	+	Blue
		-		23	-	Red
5	1*)	+	3	5	+	Black
		-		24	-	Purple
6	1*)	+	3	6	+	gray-pink
		-		25	-	red-blue
7	1*)	+	4	7	+	white-green
		-		26	-	brown-green
8	1*)	+	4	8	+	white-yellow
		-		27	-	yellow-brown
9	1*)	+	5	9	+	white-gray
		-		28	-	gray-brown
10	1*)	+	5	10	+	white-pink
		-		29	-	pink-brown
11	1*)	+	6	11	+	white-blue
		-		30	-	brown-blue
12	1*)	+	6	12	+	white-red
		-		31	-	brown-red
13	1*)	+	7	13	+	white-black
		-		32	-	brown-black
14	1*)	+	7	14	+	gray-green
		-		33	-	yellow-gray
15	1*)	+	8	15	+	pink-green
		-		34	-	yellow-pink
16	1*)	+	8	16	+	green-blue
		-		35	-	yellow-blue
	not used			17		green-red
	not used			36		yellow-red
	not used			18		green-black
	not used			37		yellow-black
	not used			19		gray-blue
	not used			38		pink-blue
	not used			39		gray-red
	not used			40		pink-red

*) different possibilities of field device connections; for further information see: manual of: 9160/23-10-11 or 9163/23-10-11 or 9182/20-59-11

We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustration cannot be considered binding



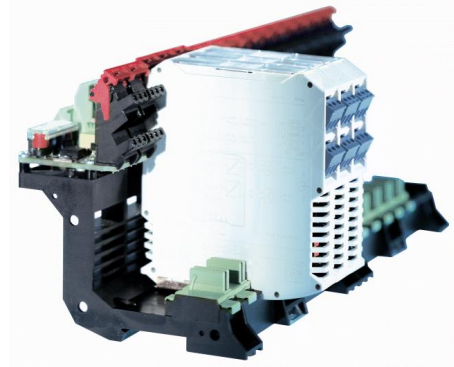


**pac-Carrier
Type 9195/16A-EP1-06U2**

**For Emerson / DeltaV / VE4001S2T2B5 or
VE4002S1T2B6**

Signal types: (32 x DI or 32 x DO; common return)

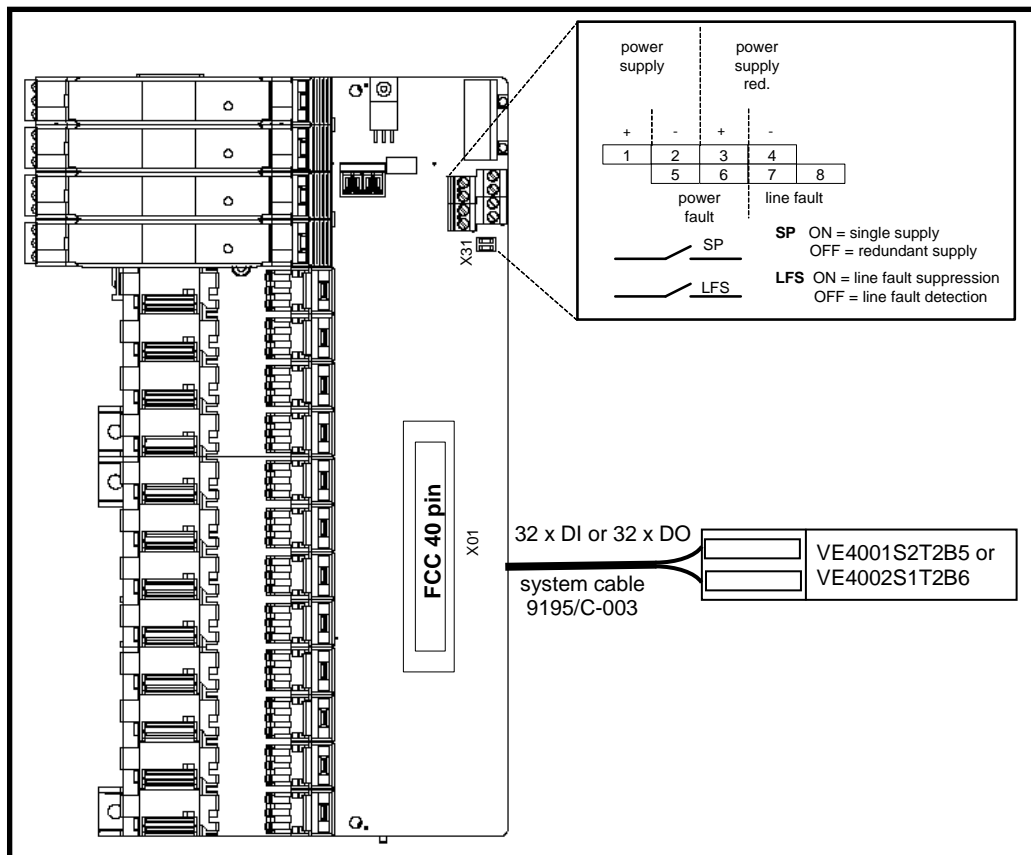
- pac-Carrier for 16 modules, up to 32 signals
- ISpac isolator 9170/20-10-11, 9170/20-11-11, 9170/20-14-11, 9172/21-11-00, 9175/20-1x-11 and 9176/20-1x-00 can be used
- Customized system cable type 9195/C-003 to automation systems
- Redundant power supply with message contact and exchangeable fuses
- 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, Zone 22 (non conductible dust) and Div. 2



05179E00

Comfortable and simple integration of the Ex i isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.

System overview



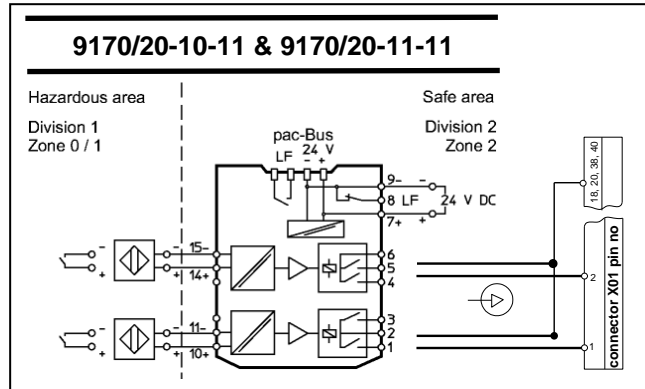
Selection table						
Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4001S2T2B5 VE4002S1T2B6	32 x DI 32 x DO	16	9195/C-003	9195/16A-EP1-06U2
Technical data						
Certificates		BVS 03 ATEX E213 X				
Explosion protection		⊕ II 3 G Ex nA nC II T4				
Installation		In Zone 2, Zone 22 (non conductible dust), 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 field devices						
Connection		at the terminals of the I.S. isolators (see “signal loops”)				
Number of channels		32				
Connection automation system		(X01)				
Connection		plug FCC 40 pole for 9195/C-003 (40-pin Mass Termination Block)				
Number of channels		up to 32				
Error messaging		(X31)				
Power supply failure PF		Contact (35 V / 100 mA), closed in good conditions				
Line fault LF (of ISpac modules)		Contact (35 V / 100 mA), closed in good conditions				
Setting switch „SP“		Power failure message suppressed for redundant supply (single supply)				
Setting switch „LFS“		Line fault message suppressed				
Ambient conditions						
Ambient temperature		max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)				
Storage temperature		- 40 °C ... + 80 °C				
Relative humidity (no condensation)		≤95 %				
Mechanical data						
Weight		approx. 320 g				
Mounting type		on DIN rail, EN 50022 (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.

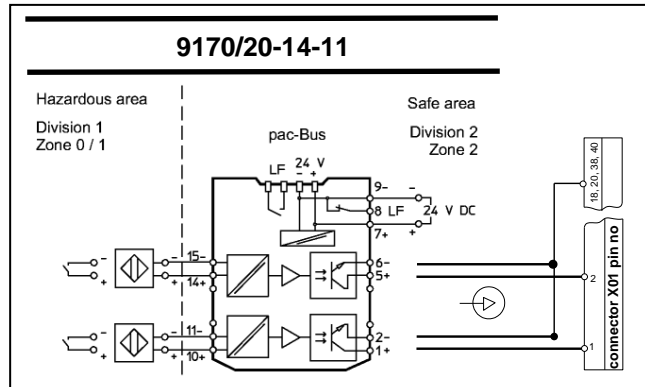
Switching repeater (DI)

for NAMUR proximity switches and contacts
- relay output



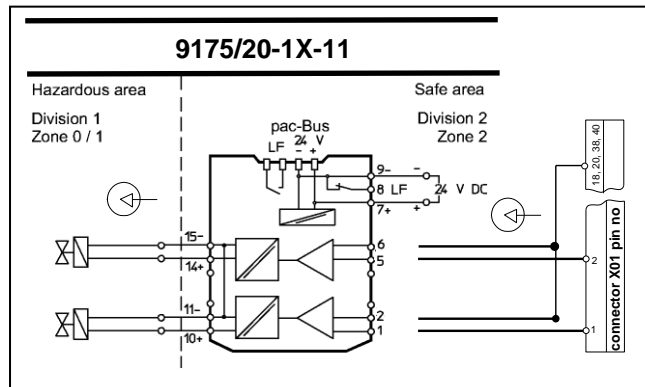
Switching repeater (DI)

for NAMUR proximity switches and contacts
- electronic output



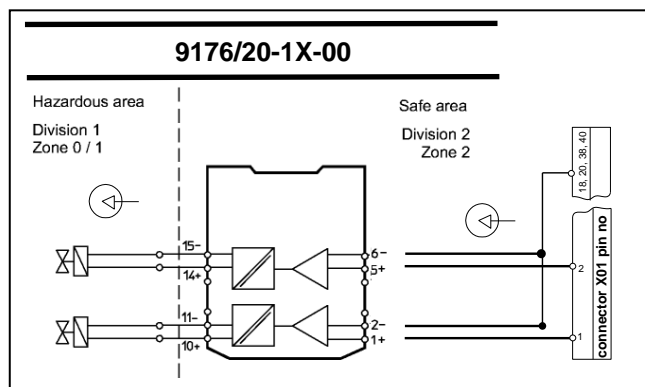
Digital output (DO)

for solenoid valves and indicators



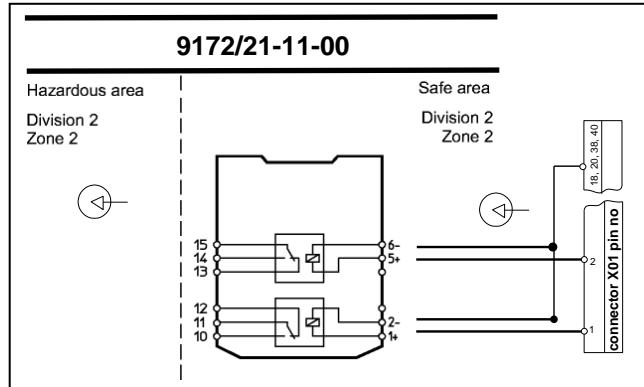
Digital output (DO)

for solenoid valves and indicators
- loop powered



Relay Module (DO)

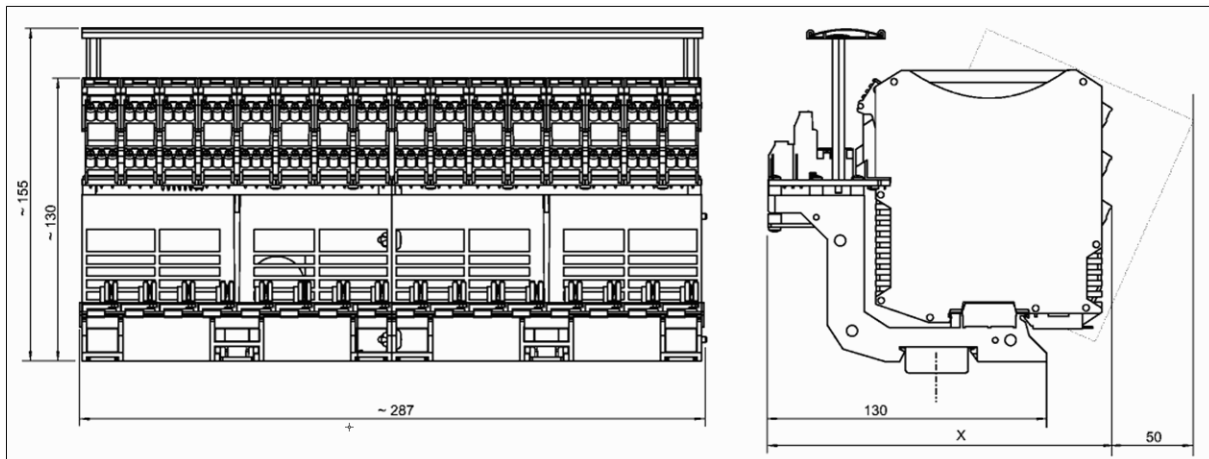
For digital Signals and control circuits



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
System cable		Customized system cable type 9195/C-003 for DeltaV I/O Module with flat-cable connector (FCC) system cable 34 x 0,127 (AWG 28) grey	9195/C-003

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



12472E00

	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

channel	terminal I.S. modules	carrier slot	X01 (FCC40)		VE4001S2T2B5 VE4002S1T2B6		input no.
			pin no.	polarity	J3	J4	
1	1*)	1	1	+	1		1
2			2	+	2		2
3	1*)	2	3	+	3		3
4			4	+	4		4
5	1*)	3	5	+	5		5
6			6	+	6		6
7	1*)	4	7	+	7		7
8			8	+	8		8
9	1*)	5	9	+	9		9
10			10	+	10		10
11	1*)	6	11	+	11		11
12			12	+	12		12
13	1*)	7	13	+	13		13
14			14	+	14		14
15	1*)	8	15	+	15		15
16			16	+	16		16
17	1*)	9	21	+		1	17
18			22	+		2	18
19	1*)	10	23	+		3	19
20			24	+		4	20
21	1*)	11	25	+		5	21
22			26	+		6	22
23	1*)	12	27	+		7	23
24			28	+		8	24
25	1*)	13	29	+		9	25
26			30	+		10	26
27	1*)	14	31	+		11	27
28			32	+		12	28
29	1*)	15	33	+		13	29
30			34	+		14	30
31	1*)	16	35	+		15	31
32			36	+		16	32
1 to 32	common return		18	-	18		1 to 32
			20	-	20		
			38	-		18	
			40	-		20	

*) different possibilities of field device connections; for further information see: manual of 9170/20-10-11 or 9170/20-11-11 9170/20-14-11 or 9172/21-11-00 or 9175/20-1x-11 or 9176/20-1x-00

We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustration cannot be considered binding.



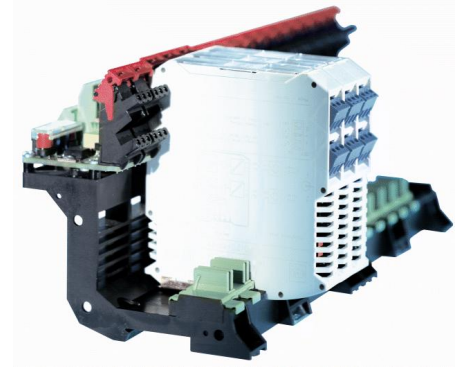


**pac-Carrier
Type 9195/16A-EP1-06A9**

**For Emerson / DeltaV / VE4001S2T2B4 or
VE4002S1T2B5**

Signal types: (32 x DI or 32 x DO; common return)

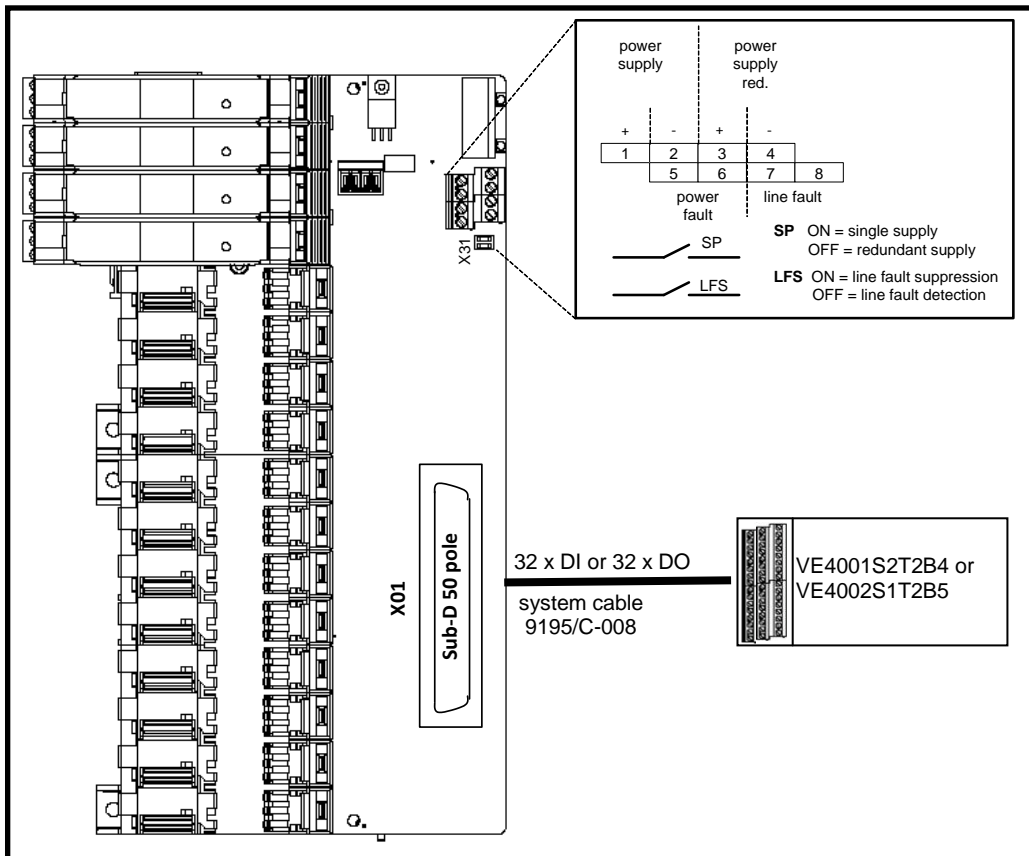
- pac-Carrier for 16 modules, up to 32 signals
- ISpac isolator 9170/20-10-11, 9170/20-11-11, 9170/20-14-11, 9172/21-11-00, 9175/20-1x-11 and 9176/20-1x-00 can be used
- Customized system cable type 9195/C-008 to automation systems
- Redundant power supply with message contact and exchangeable fuses
- 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, Zone 22 (non conductible dust) and Div. 2



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Comfortable and simple integration of the Ex i isolators ISpac into Emerson / DeltaV automation systems via system specific connection boards and system cables.

System overview

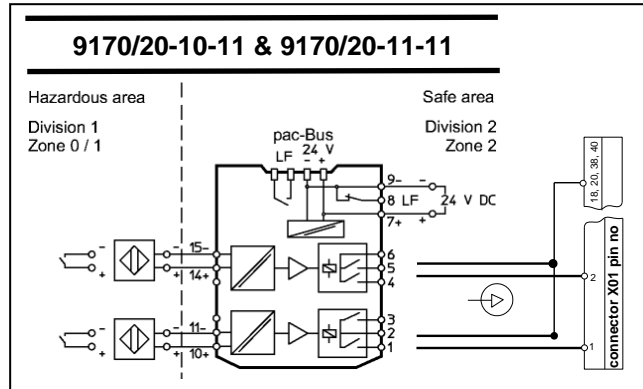


Selection table						
Control system				pac-Carrier		
DCS manufacturer	DCS type	I/O cards type	Signal type	Slots	Stahl Cable type	Type
Emerson	DeltaV	VE4001S2T2B4 VE4002S1T2B5	32 x DI 32 x DO	16	9195/C-008	9195/16A-EP1-06A9
Technical data						
Certificates		BVS 03 ATEX E213 X				
Explosion protection		⊕ II 3 G Ex nA nC II T4				
Installation		In Zone 2, Zone 22 (non conductible dust), 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 field devices		(X01)				
Connection		at the terminals of the I.S. isolators (see "signal loops")				
Number of channels		32				
Connection automation system		(X01)				
Connection		plug Sub-D 50 pole for 9195/C-008 (40-pin Termination Block)				
Number of channels		up to 32				
Error messaging		(X31)				
Power supply failure PF		Contact (35 V / 100 mA), closed in good conditions				
Line fault LF (of ISpac modules)		Contact (35 V / 100 mA), closed in good conditions				
Setting switch „SP“		Power failure message suppressed for redundant supply (single supply)				
Setting switch „LFS“		Line fault message suppressed				
Ambient conditions		(X31)				
Ambient temperature		max. - 20 °C ... + 70 °C (see specification of the I.S. isolators)				
Storage temperature		- 40 °C ... + 80 °C				
Relative humidity (no condensation)		≤95 %				
Mechanical data		(X31)				
Weight		approx. 320 g				
Mounting type		on DIN rail, EN 50022 (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				

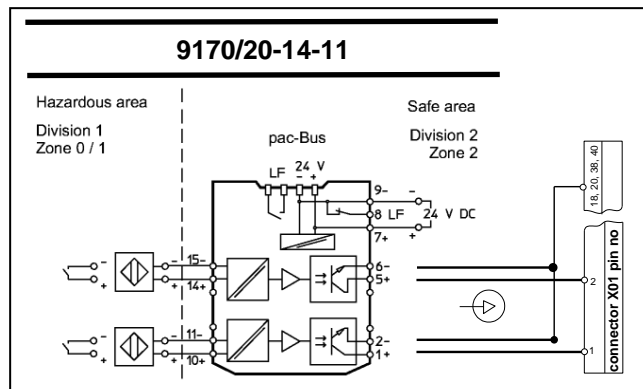
Signal loops

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.

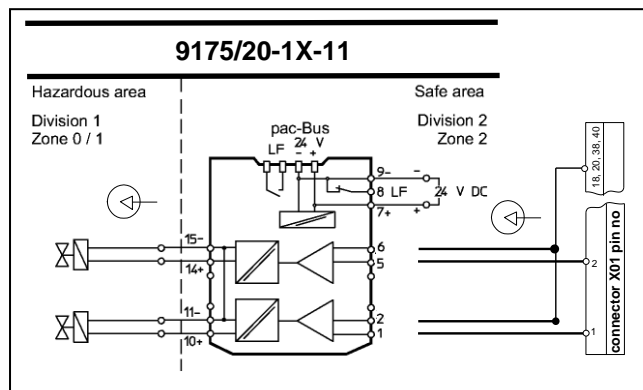
Switching repeater (DI)
for NAMUR proximity switches and contacts
- relay output



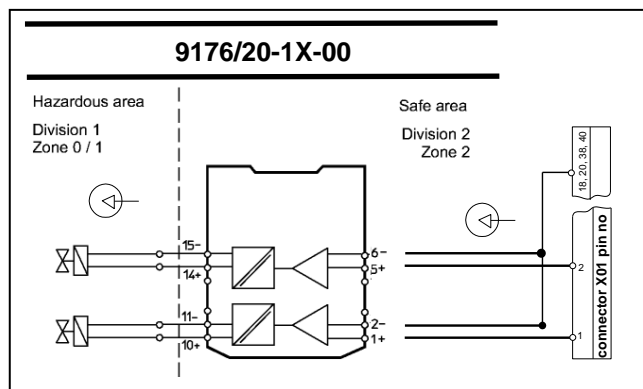
Switching repeater (DI)
for NAMUR proximity switches and contacts
- electronic output



Digital output (DO)
for solenoid valves and indicators

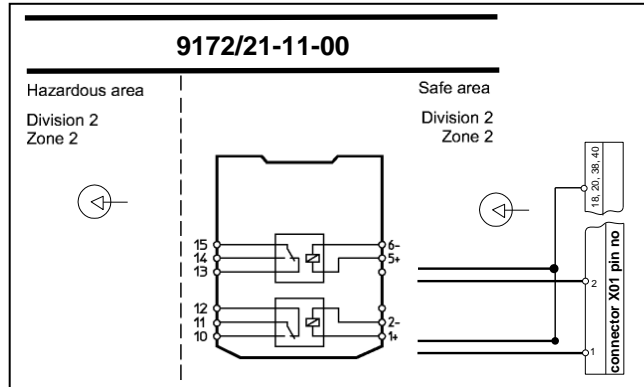


Digital output (DO)
for solenoid valves and indicators
- loop powered




Relay Module (DO)

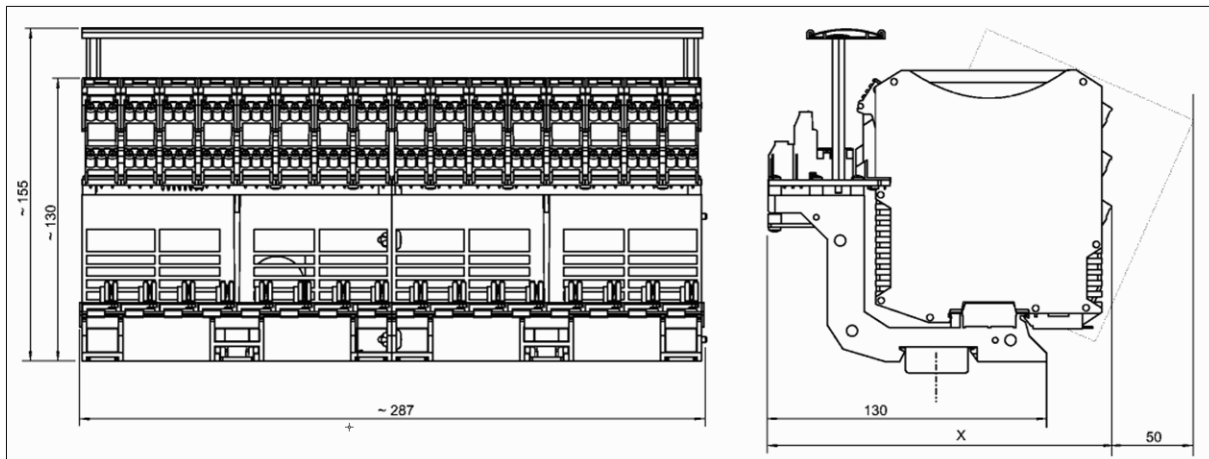
For digital Signals and control circuits



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
System cable		Customized system cable type 9195/C-008 for DeltaV I/O Module with Sub-D 50 system cable 40 x 0,35 (AWG 28) grey	9195/C-008

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



12472E00

	Dimension x
Screw terminals	176 mm
Cage clamp terminals	186 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

channel	carrier slot	Input		Cable 9195/C-008 color code
		pol.	no.	
1	1	+	1	White
2		+	2	Brown
3	2	+	3	Green
4		+	4	Yellow
5	3	+	5	Gray
6		+	6	Pink
7	4	+	7	Blue
8		+	8	Red
9	5	+	9	Black
10		+	10	Purple
11	6	+	11	gray-pink
12		+	12	red-blue
13	7	+	13	white-green
14		+	14	brown-green
15	8	+	15	white-yellow
16		+	16	yellow-brown
17	9	+	17	white-gray
18		+	18	gray-brown
19	10	+	19	white-pink
20		+	20	pink-brown
21	11	+	21	white-blue
22		+	22	brown-blue
23	12	+	23	white-red
24		+	24	brown-red
25	13	+	25	white-black
26		+	26	brown-black
27	14	+	27	gray-green
28		+	28	yellow-gray
29	15	+	29	pink-green
30		+	30	yellow-pink
31	16	+	31	green-blue
32		+	32	yellow-blue
33	not used		3 to 32	green-red
34	common return	-	4 to 32	yellow-red
35		-	1 to 32	green-black
36		-	2 to 32	yellow-black
37		-		gray-blue
38	not used			pink-blue
39				gray-red
40				pink-red

*) different possibilities of field device connections; for further information see: manual of:

- 9170/20-10-11 or 9170/20-11-11 9170/20-14-11 or 9172/21-11-00 or 9175/20-1x-11 or 9176/20-1x-00

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Notes:



Notes:



**R. STAHL Schaltgeräte GmbH**

Am Bahnhof 30, D-74638 Waldenburg, Germany

Telefon +49 7942 943-0

Telefax +49 7942 943-4333

E-Mail: info.ex@stahl.de

Internet: <http://www.stahl.de>

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