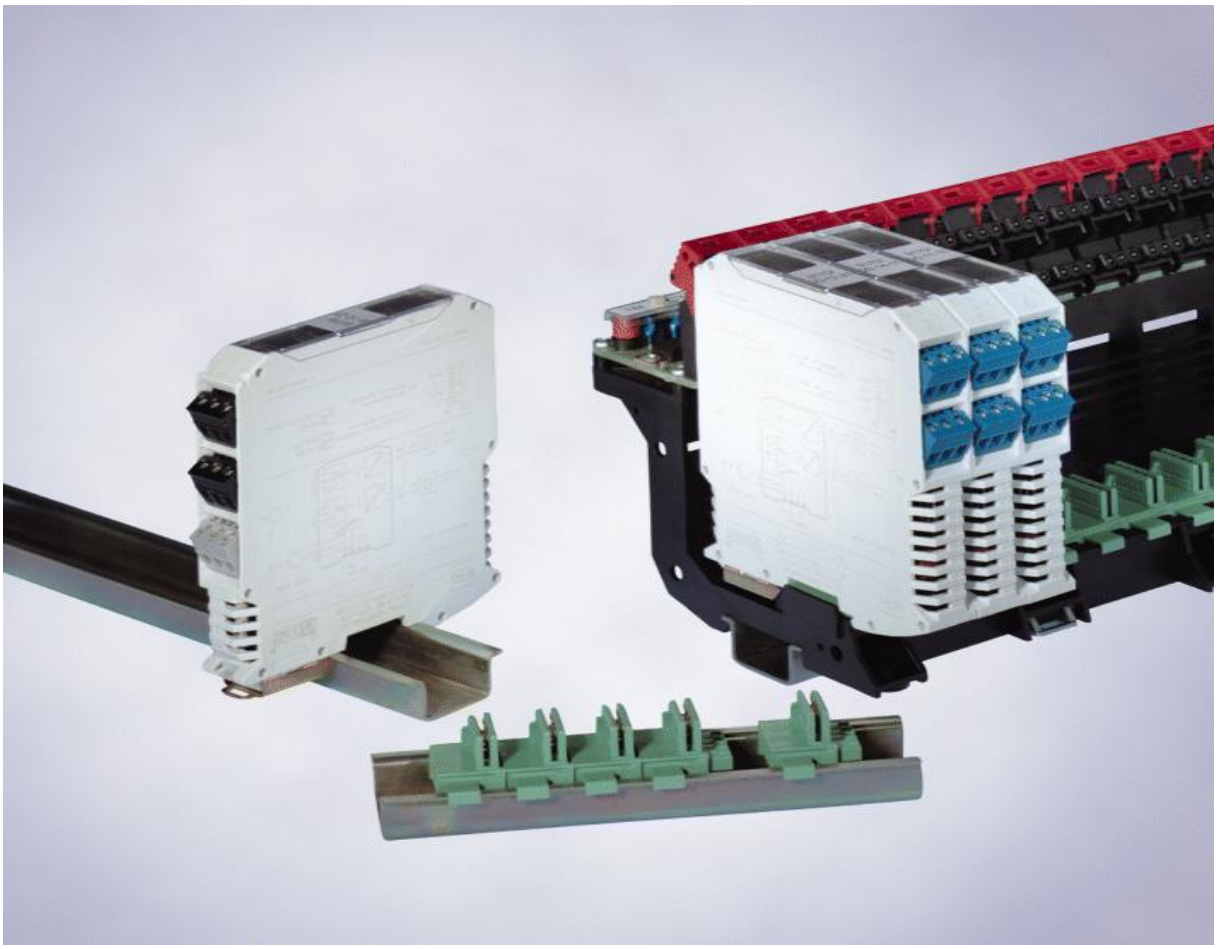
PROCON SYSTEMS INC.
www.proconsystems.com



Engineering Guideline

pac-Carriers Type 9195

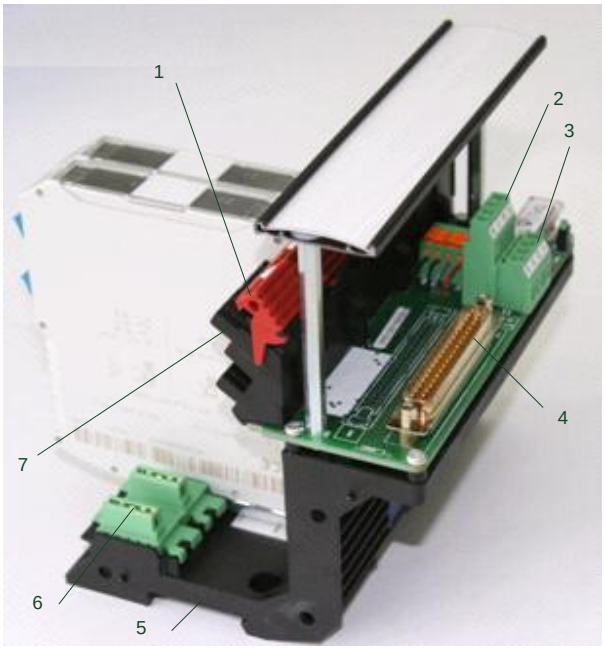
for Honeywell system
Experion Series C I/O

Integration of conventional process automation interfaces - pac Carrier

The pac carrier reflects the intention of R. STAHL to provide state-of-the-art concepts tailored to the needs of process automation and machine manufacturing. It is designed to reduce the cost of installation by space saving compact design and simplified installation. The Ex i/I.S. isolators can be mounted 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 control system I/O module is simply done by connecting a customer specific cable to the screw terminal of the pac Carrier.
The use of the pac-Carrier reduces the required time for installation and enables pre-wiring for later upgrades.

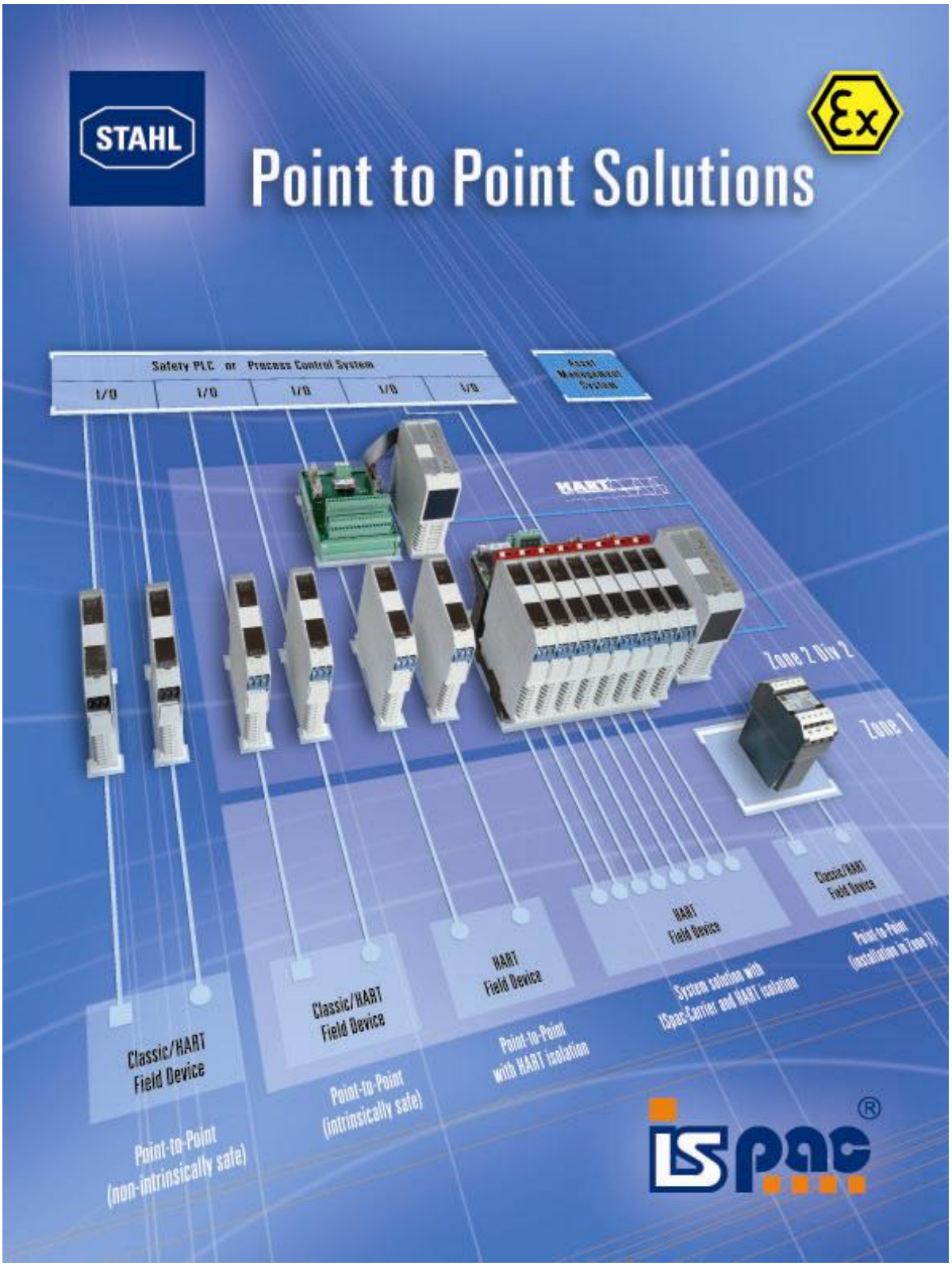
Your benefits:

- The most flexible system for the integration of Ex i/I.S. signals
- Complete line fault transparency - no blind spots
- Compact and rugged installation
- Pre-wiring enables easy and fault proved upgrade
- Systems for installation in hazardous location for the control system and Ex i/I.S. isolation made by STAHL



Example of 8 Slots Carrier

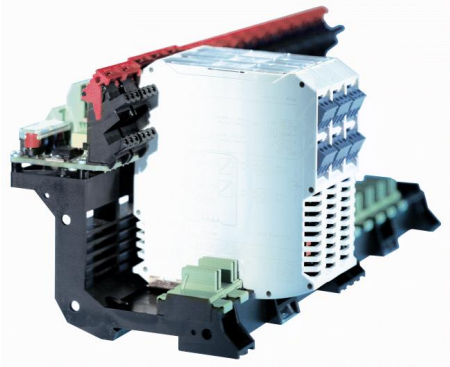
1. Ejector mechanism
2. Redundant and fused supply
3. Power supply failure and line fault signaling via relay contact
4. Interface for field signal connection w/o (Sub-D 37) Ex i/I.S. isolator
5. Installation on DIN rail or mounting plate
6. Integrated pac bus for power supply and line-fault signaling
7. Reliable snap-in mechanism, without tool


STAHL
Point to Point Solutions
Safety PLC or Process Control System
I/O
I/O
I/O
I/O
I/O
Zone 2 Div 2
Zone 1
Classic/HART Field Device
Point-to-Point (non-intrinsically safe)
Classic/HART Field Device
Point-to-Point (intrinsically safe)
HART Field Device
Point-to-Point with HART isolation
HART Field Device
System solution with iSpac-Carrier and HART isolation
Classic/HART Field Device
Point-to-Point (installation in Zone 1)

Contents

pac-Carrier
Type 9195/08A-XX0-03A5

- **For Honeywell Experion Series C I/O**
- Signal types: 16 x AI or 16 x AO
- pac-Carrier for 8 modules, up to 16 signals
- ISpac isolator 9160/23-10-11, 9165/26-11-11 and 9182/20-59-11 can be used
- Customized system cable type 9195/C-009 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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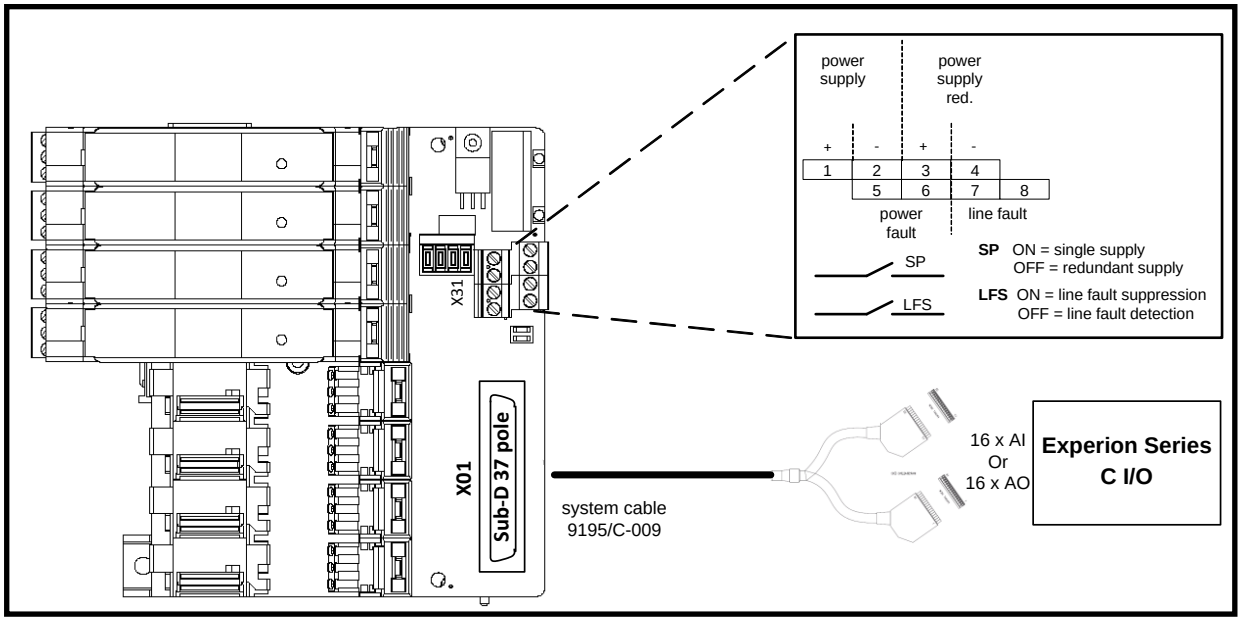
Comfortable and simple integration of the Ex i isolators ISpac into Honeywell automation systems via system specific connection boards and system cables.

System overview



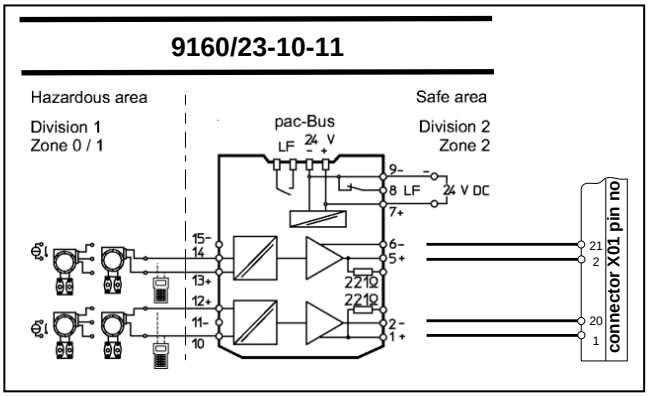
Selection table						
Control system				**pac-Carrier**		
DCS manufacturer	**DCS type**	**I/O cards type**	**Signal type**	**Slots**	**Stahl Cable type**	**Type**
Honeywell	Experion Series C	CC-TAIX01	16 x AI	8	9195/C-009	9195/08A-XX0-03A5
		CC-TAIX11				
		CC-TAOX01	16 x AO			
		CC-TAOX11				

Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ 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-009
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 (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

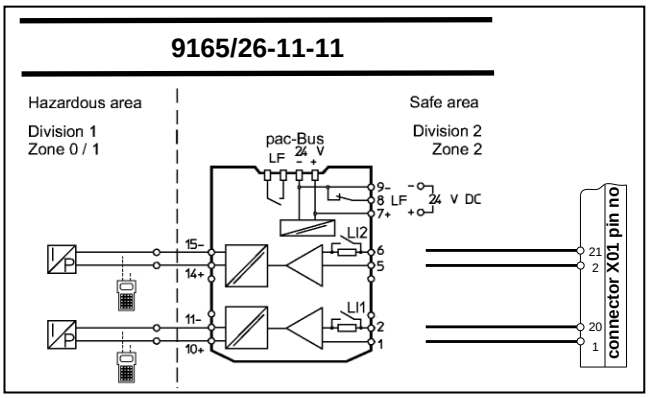
Signal loops

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.

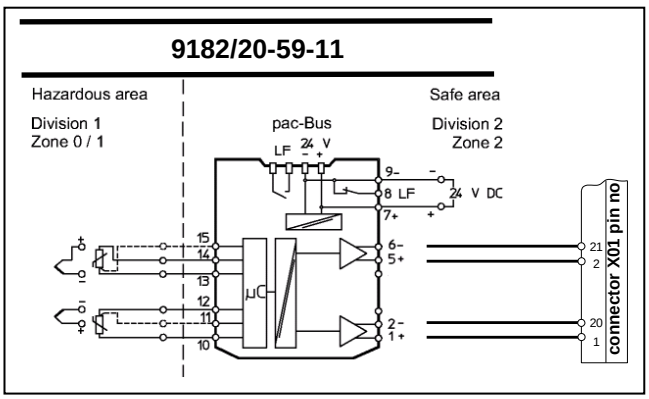
Transmitter supply unit (AI)
for 2-, 3-wire transmitter and mA sources
for 2-wire transmitter with HART



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



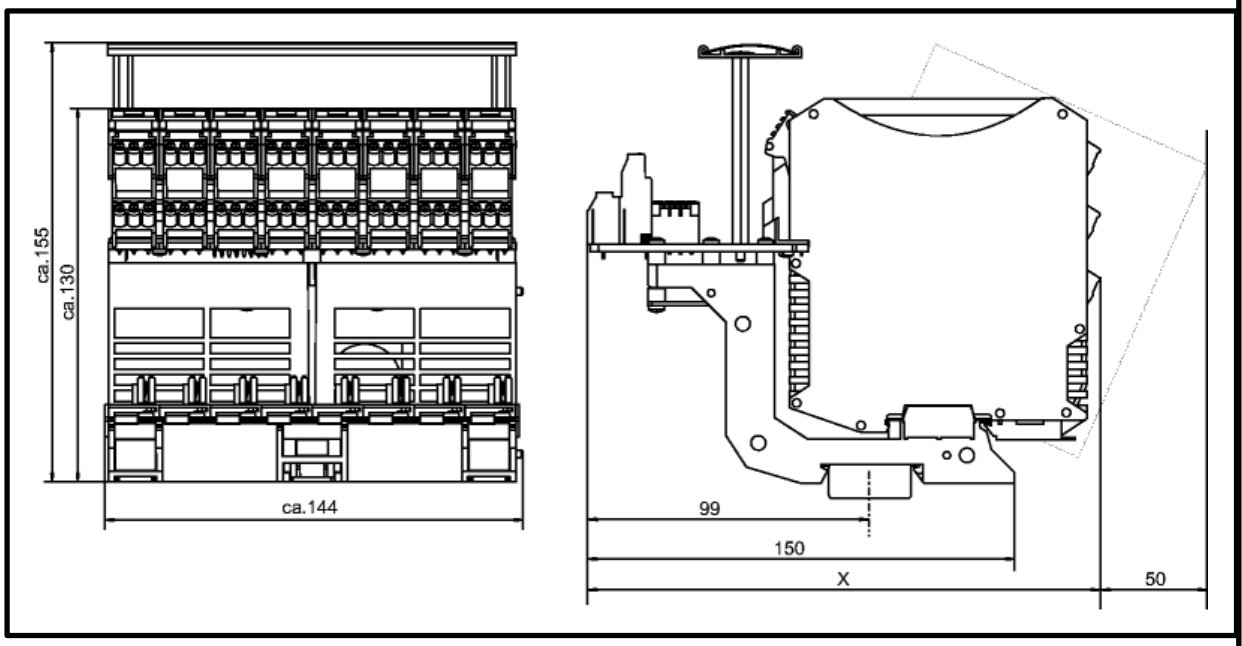
Temperature transmitter (AI)
for resistance thermometer, thermocouple and RTD
(Configuration by means of DIP Switches or
ISpac Wizard software)



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

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-009 for DeltaV I/O Module with Sub-D 37 system cable 40 x 0,35 (AWG 28) grey		**9195/C-009**

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.

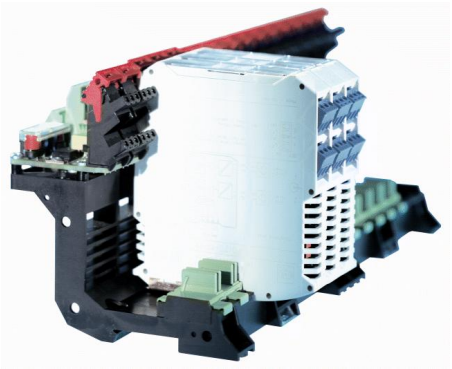
Connection list

channel	terminal I.S. modules AI: 9160 AO: 9165 AI: 9182	polarity	carrier slot	X01 (Sub-D 37)	polarity	16 pole Connector 1	16 pole Connector 2	Cable 9195/C-009 color code
1	1*)	+	1	1	+		1	White
		-		20	-	1		Brown
	1*)	+		2	+		2	Green
		-		21	-	2		Yellow
3	1*)	+	2	3	+		3	Gray
		-		22	-	3		Pink
4	1*)	+		4	+		4	Blue
		-		23	-	4		Red
5	1*)	+	3	5	+		5	Black
		-		24	-	5		Purple
6	1*)	+		6	+		6	gray-pink
		-		25	-	6		red-blue
7	1*)	+	4	7	+		7	white-green
		-		26	-	7		brown-green
8	1*)	+		8	+		8	white-yellow
		-		27	-	8		yellow-brown
9	1*)	+	5	9	+		9	white-gray
		-		28	-	9		gray-brown
10	1*)	+		10	+		10	white-pink
		-		29	-	10		pink-brown
11	1*)	+	6	11	+		11	white-blue
		-		30	-	11		brown-blue
12	1*)	+		12	+		12	white-red
		-		31	-	12		brown-red
13	1*)	+	7	13	+		13	white-black
		-		32	-	13		brown-black
14	1*)	+		14	+		14	gray-green
		-		33	-	14		yellow-gray
15	1*)	+	8	15	+		15	pink-green
		-		34	-	15		yellow-pink
16	1*)	+		16	+		16	green-blue
		-		35	-	16		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, 9165/26-11-11 and 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-XX0-03B3



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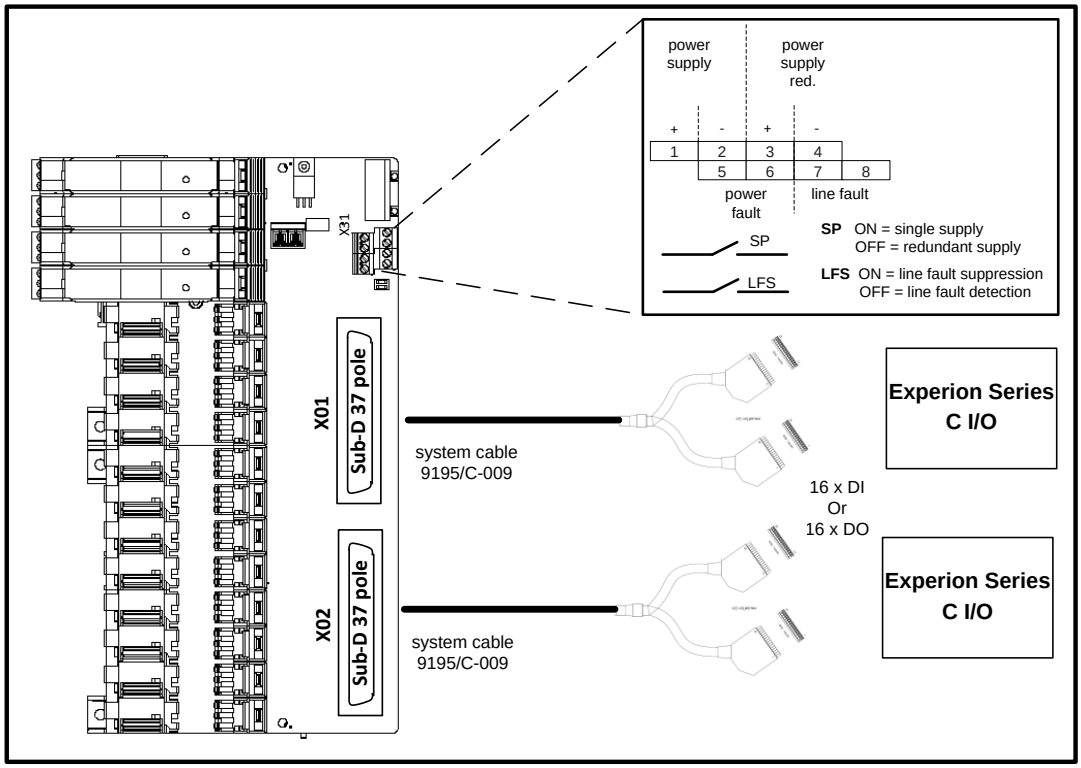
- **For Honeywell Experion Series C I/O**
- Signal types: 32 x DI or 32 x DO
- pac-Carrier for 16 modules, up to 32 signals
- ISpac isolator 9170/20-10-11, 9175/20-1X-11 and 9176/20-1X-00 can be used
- Customized system cable type 9195/C-009 to automation systems
- Redundant power supply with message 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

Comfortable and simple integration of the Ex i isolators ISpac into Honeywell 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**
Honeywell	Experion Series C	CC-TDIL01	32 x DI	16	9195/C-009	9195/16A-XX0-03B3
		CC-TDIL11				
		CC-TDOB01	32 x DO			
		CC-TDOB11				

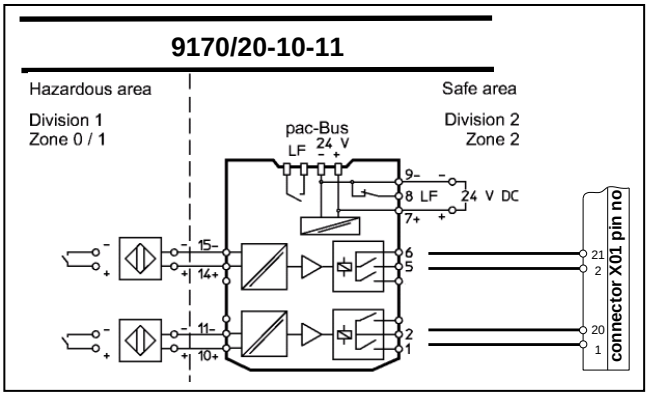
Technical data	
Certificates	BVS 03 ATEX E213 X
Explosion protection	⟨Ex⟩ II 3 G Ex nA nC II T4
Installation	In Zone 2, Zone 22 (non conductible dust), Div. 2 and in the safe area
Power supply	**(X31)**
Nominal voltage U_N	24 V DC (19 V … 31,2 V)
Redundant supply	yes, decoupled with diodes
Indication	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 Sub-D 37 pole for 9195/C-009
Number of channels	up to 16
Connection automation system	**(X02)**
Connection	plug Sub-D 37 pole for 9195/C-009
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 (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

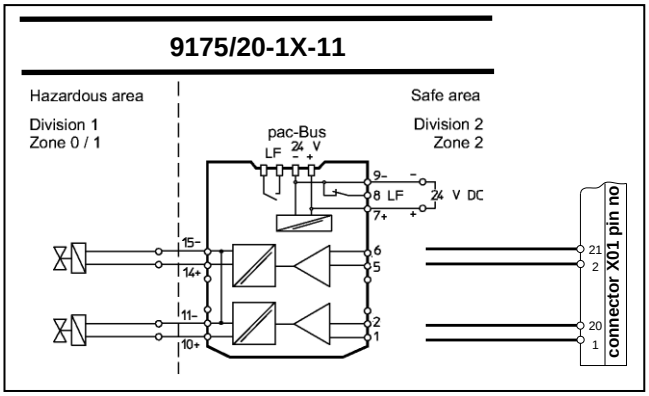
The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications
can be downloaded at: www.ispac.info.

Switching repeater (DI)

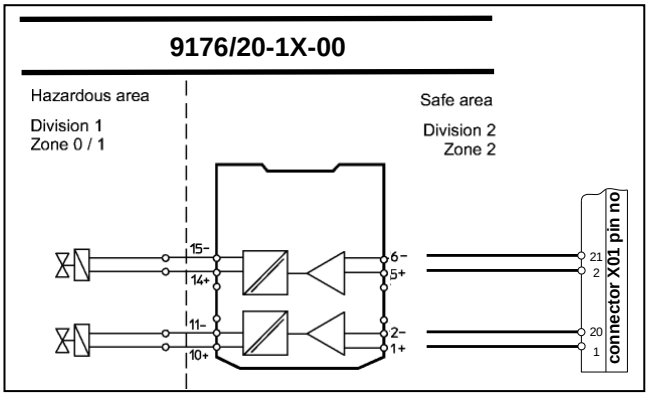
for NAMUR proximity switches and contacts
- relay output



Digital output (DO)
for solenoid valves and indicators

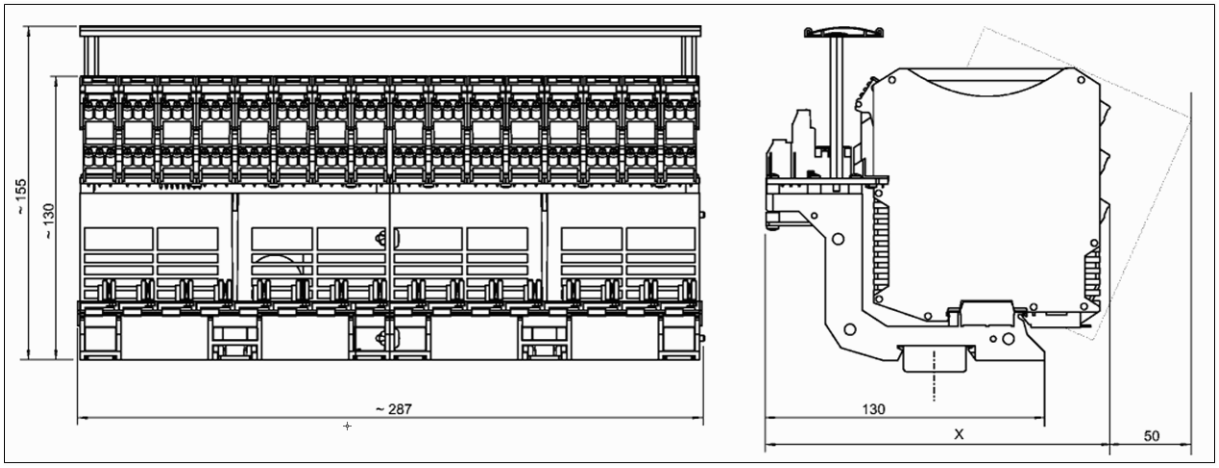


Digital output (DO)
for solenoid valves and indicators
- loop powered



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-009 for DeltaV I/O Module with Sub-D 37 system cable 40 x 0,35 (AWG 28) grey		**9195/C-009**

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)		16 pole Connector 1	16 pole Connector 2	Cable 9195/C-009 color code
	DI: 9170 DO: 9175 DO: 9176	polarity			polarity			
1	1*)	+	1	1	+		1	White
		-		20	-	1		Brown
2	1*)	+		2	+		2	Green
		-		21	-	2		Yellow
3	1*)	+	2	3	+		3	Gray
		-		22	-	3		Pink
4	1*)	+		4	+		4	Blue
		-		23	-	4		Red
5	1*)	+	3	5	+		5	Black
		-		24	-	5		Purple
6	1*)	+		6	+		6	gray-pink
		-		25	-	6		red-blue
7	1*)	+	4	7	+		7	white-green
		-		26	-	7		brown-green
8	1*)	+		8	+		8	white-yellow
		-		27	-	8		yellow-brown
9	1*)	+	5	9	+		9	white-gray
		-		28	-	9		gray-brown
10	1*)	+		10	+		10	white-pink
		-		29	-	10		pink-brown
11	1*)	+	6	11	+		11	white-blue
		-		30	-	11		brown-blue
12	1*)	+		12	+		12	white-red
		-		31	-	12		brown-red
13	1*)	+	7	13	+		13	white-black
		-		32	-	13		brown-black
14	1*)	+		14	+		14	gray-green
		-		33	-	14		yellow-gray
15	1*)	+	8	15	+		15	pink-green
		-		34	-	15		yellow-pink
16	1*)	+		16	+		16	green-blue
		-		35	-	16		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:
9170/20-10-11, 9175/20-1X-11 and 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

Connection list

channel	terminal I.S. modules DI: 9170 DO: 9175 DO: 9176	polarity	carrier slot	X02 (Sub-D 37)	polarity	16 pole Connector 1	16 pole Connector 2	Cable 9195/C-009 color code
17	1*)	+	1	1	+		1	White
		-		20	-	1		Brown
18	1*)	+		2	+		2	Green
		-		21	-	2		Yellow
19	1*)	+	2	3	+		3	Gray
		-		22	-	3		Pink
20	1*)	+		4	+		4	Blue
		-		23	-	4		Red
21	1*)	+	3	5	+		5	Black
		-		24	-	5		Purple
22	1*)	+		6	+		6	gray-pink
		-		25	-	6		red-blue
23	1*)	+	4	7	+		7	white-green
		-		26	-	7		brown-green
24	1*)	+		8	+		8	white-yellow
		-		27	-	8		yellow-brown
25	1*)	+	5	9	+		9	white-gray
		-		28	-	9		gray-brown
26	1*)	+		10	+		10	white-pink
		-		29	-	10		pink-brown
27	1*)	+	6	11	+		11	white-blue
		-		30	-	11		brown-blue
28	1*)	+		12	+		12	white-red
		-		31	-	12		brown-red
29	1*)	+	7	13	+		13	white-black
		-		32	-	13		brown-black
30	1*)	+		14	+		14	gray-green
		-		33	-	14		yellow-gray
31	1*)	+	8	15	+		15	pink-green
		-		34	-	15		yellow-pink
32	1*)	+		16	+		16	green-blue
		-		35	-	16		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: 9170/20-10-11, 9175/20-1X-11 and 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

Notes:

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Internet: http://www.stahl.de

S – BA– Honeywell – 9195 – 02 – en – 11 / 2009