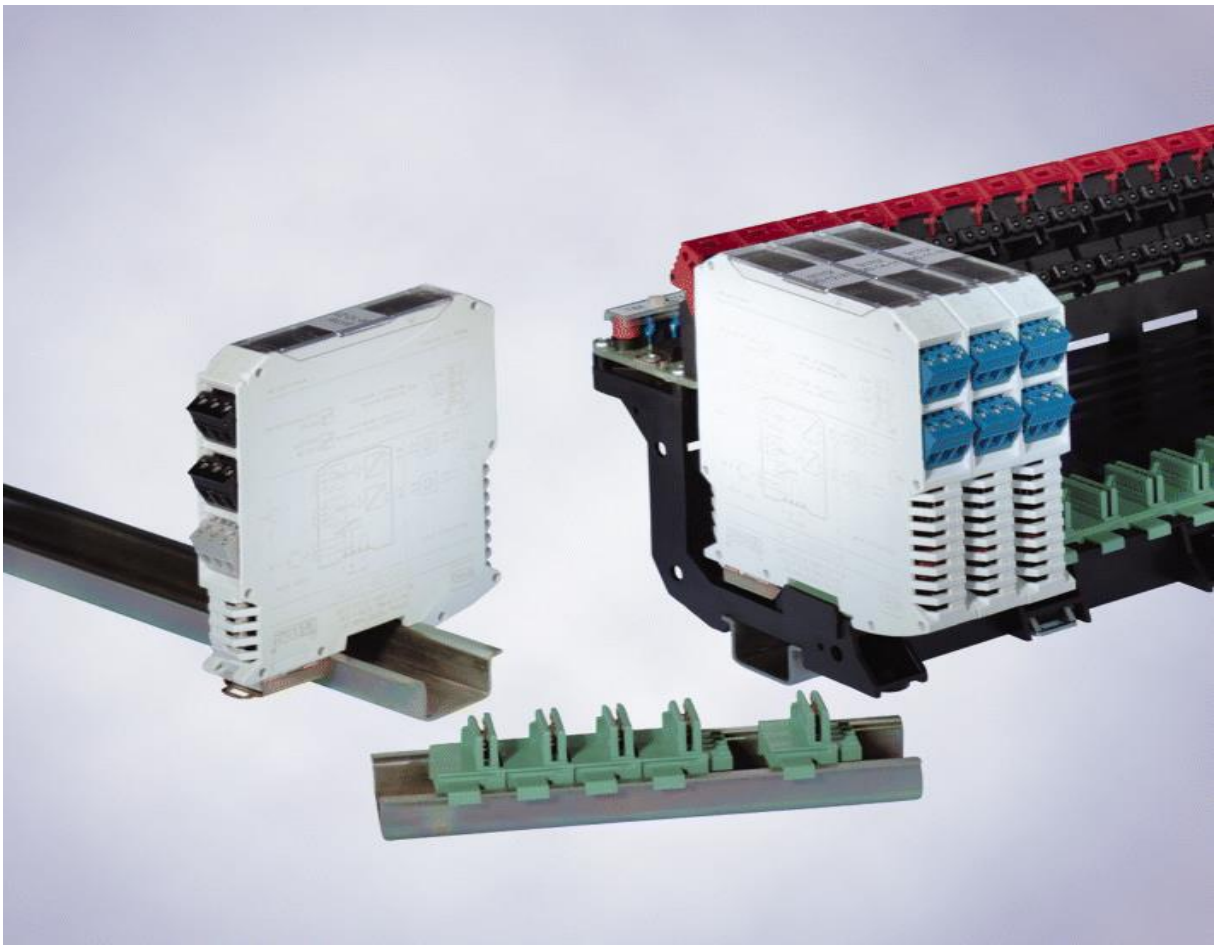


Engineering Guideline

# pac-Carriers Type 9195

## SIEMENS ET-200M
## Fail-safe signal modules

**Integration of conventional process automation interfaces - pac- Carrier**

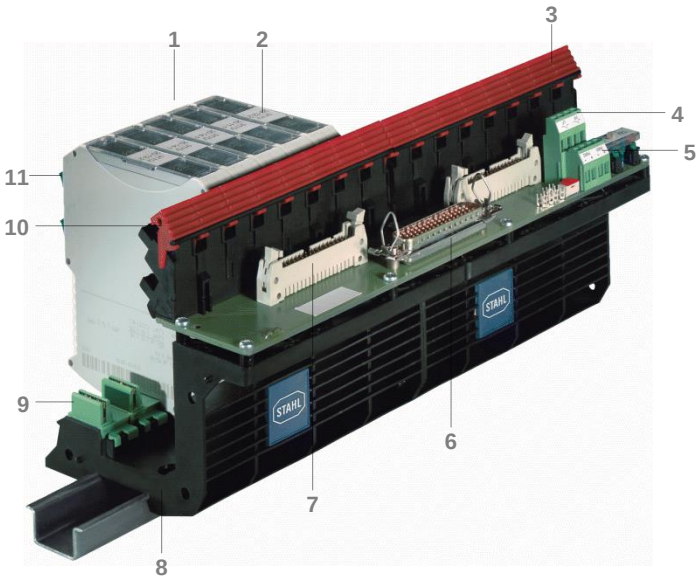
The pac- Carrier reflects the intention of R. STAHL to provide state-of-the-art concepts tailored to the needs of process automation and machine manufacturing. It is designed to reduce the cost of installation by space saving compact design and simplified installation. The Ex i / I.S. isolators can be 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.

**Test accomplished**

In order to ensure a reliable interworking with the fail-safe system the ISpac solution was thoroughly tested by SIEMENS. The solution passed the test.

**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 R. STAHL



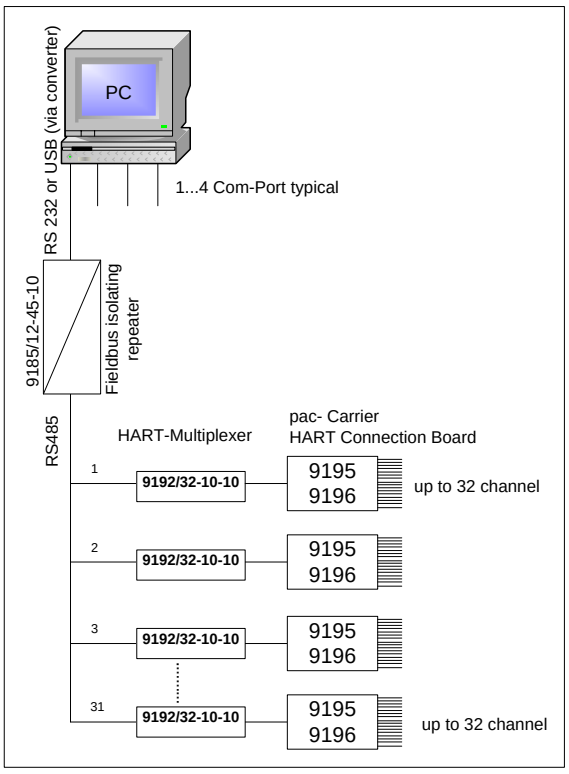

*Example of 16 slots pac-Carrier*

1. Detachable connectors
   - Screw terminals or
   - Cage clamp terminals or
   - Insulating cutting terminals
2. Labelling for module, slot and carrier
3. Ejector mechanism
4. Redundant and fused supply
5. Power supply failure and line fault signalling via relay
6. System cable plug
7. Signal duplication and/ or connection HART multiplexer
8. For DIN rail or mounting plate
9. Integrated pac bus for power supply and line-fault signalling
10. Secure snap-in mechanism, without tool
11. Single slot, any signal mixture

## HART-Multiplexer Type 9192

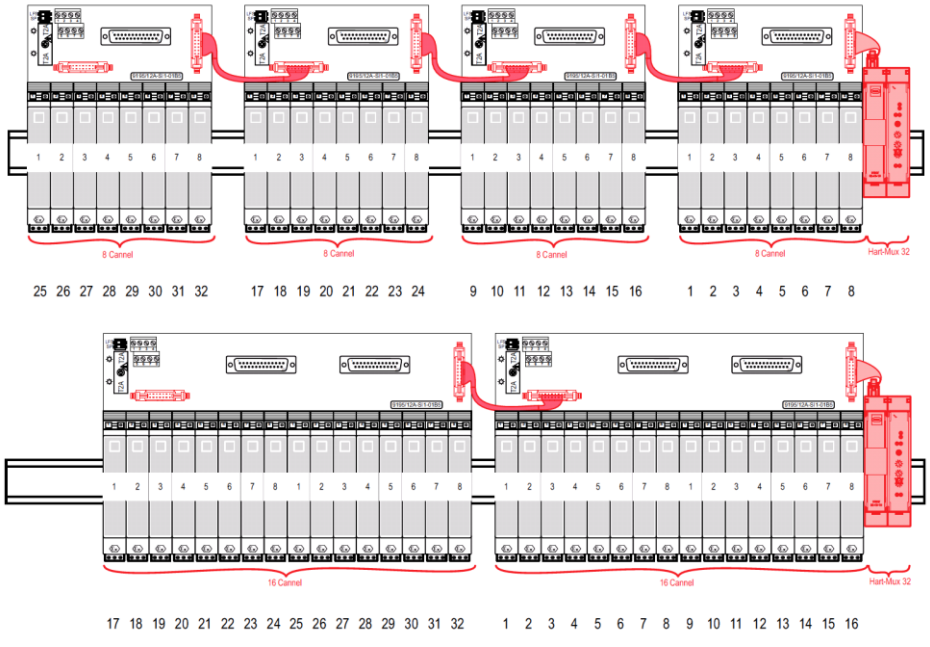
Basic function: multiplexer for HART field devices, 32 channels. The HART-Multiplexer type 9192 is used for digital connection of up to 32 HART-capable field devices, such as transmitters and regulating valves, to a PC. The PC communicates with the HART-Multiplexer via an RS 485 bus. The software PDM allows configuration and diagnostics of all connected HART-capable field devices, plus continuous documentation of the process variables and status.

### Interconnection:




| Accessories and Spare Parts | | |
|---|---|---|
| **Designation** | **Description** | **Order number** |
| Fieldbus isolating repeater | • Adjustable baud rate (1.2 kBit/s up to 1.5 MBit/s)<br>• Power supply 24 V AC/DC | 9185/12-45-10s |
| pac-Carrier | 8 slots, HART | 9195/11H-...-... |
| | 16 slots, HART | 9195/12H-...-... |
| Connection board | for none Ex-applications, HART, 16 channels | 9196/16H-XX0-... |

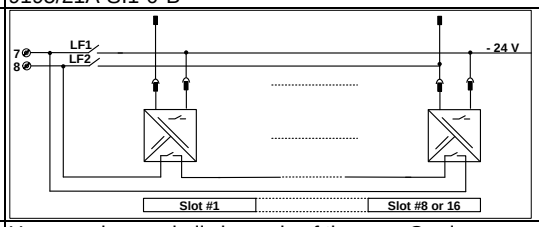
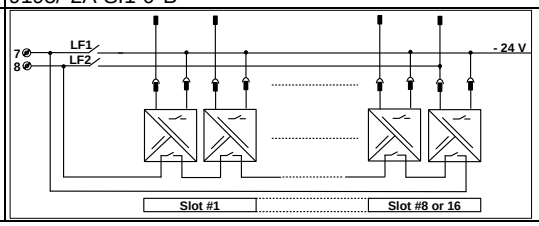
### Daisy chaining of several pac- Carriers to one HART-Multiplexer:



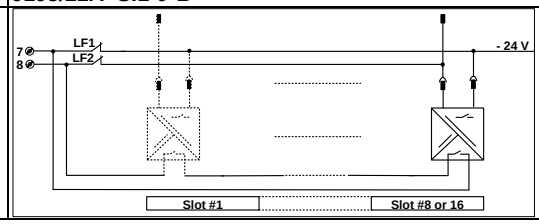
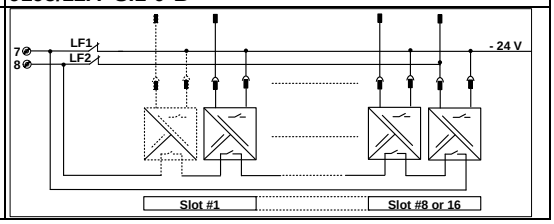
## Line fault detection alarms for DI pac-Carrier

- **For one pac- Carrier**

1. LFD is routed to terminal 7 and 8 on the pac-Carrier (switch LF1 and LF2 OFF).

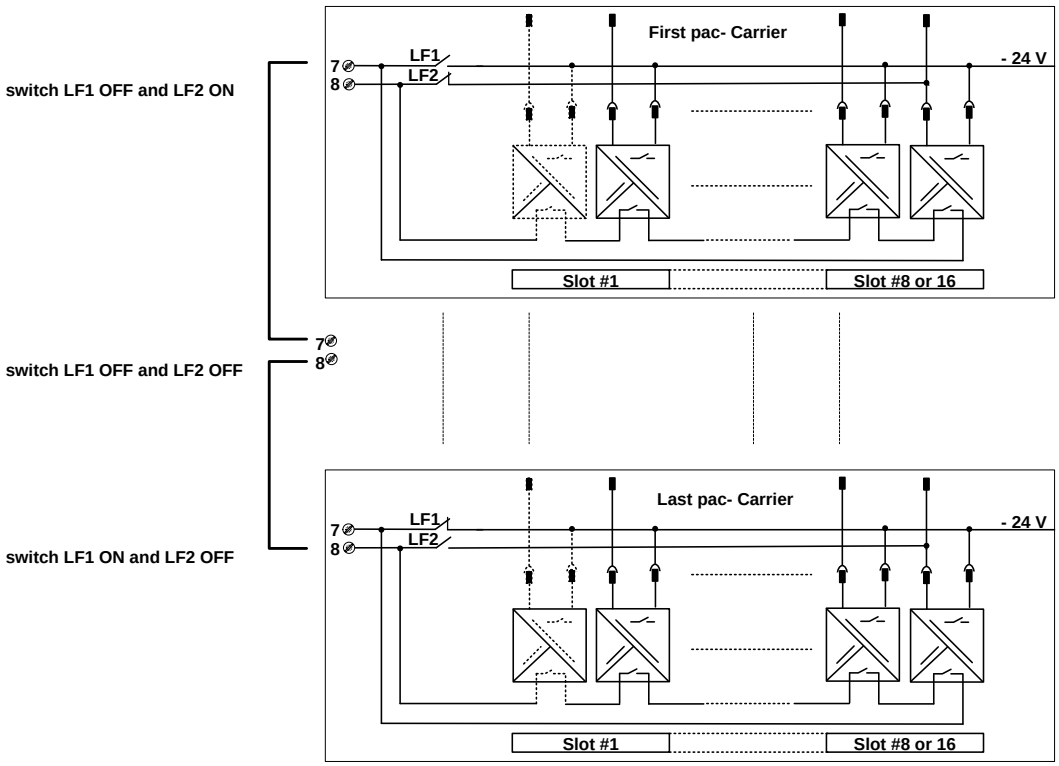
| | **Single channel module** | **Dual channel module** |
|---|---|---|
| **Pac- Carrier** | 9195/21A-SI1-0*B* | 9195/*2A-SI1-0*B* |
| **Connection diagram** |  |  |
| **Note** | Here can be used all channels of the pac- Carrier. | |

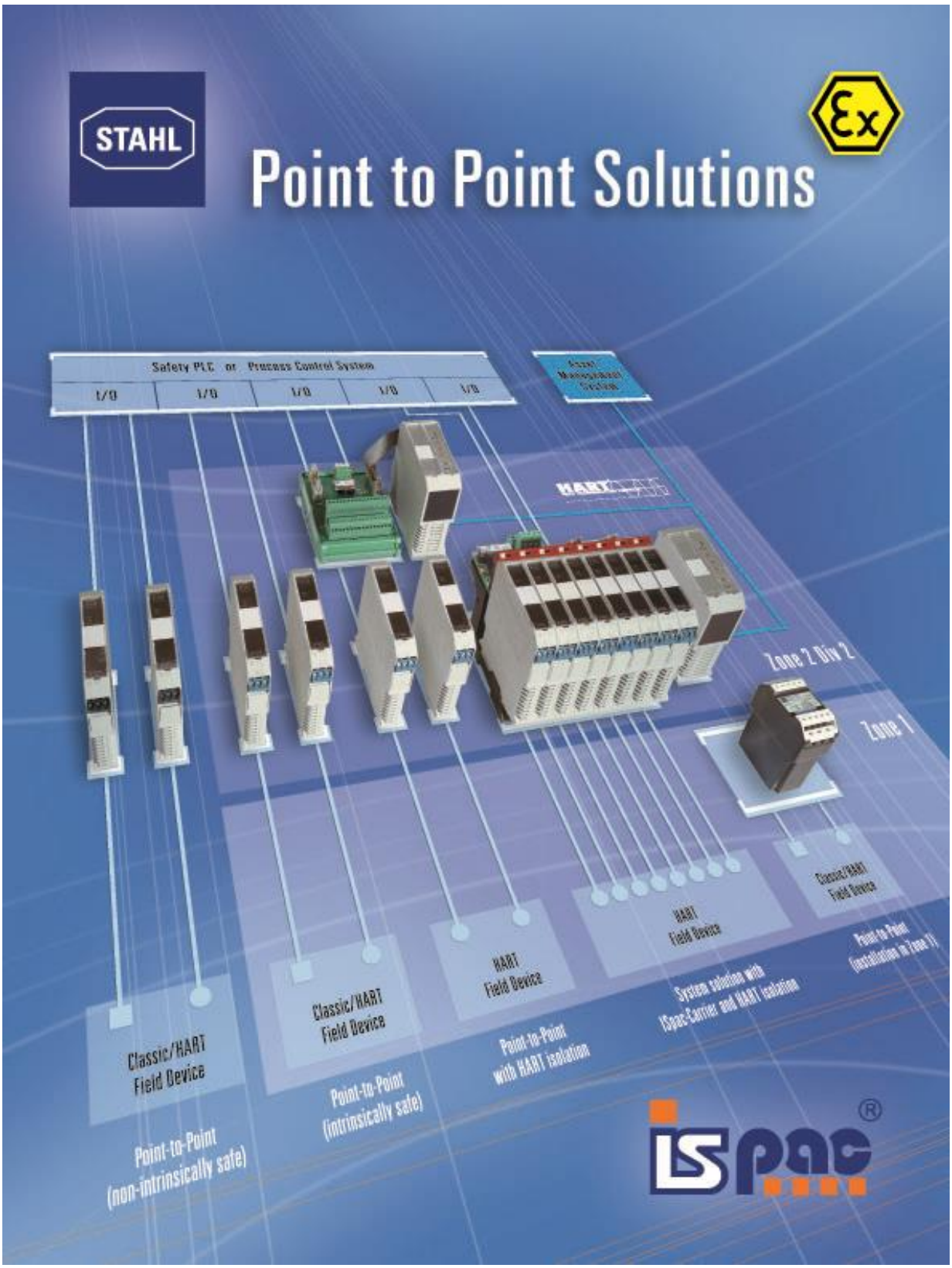
2. LFD is routed into the last channel on the pac- Carrier; this avoids any external wiring of this alarm signal (switch LF1 and LF2 ON).

| | **Single channel module** | **Dual channel module** |
|---|---|---|
| **Pac- Carrier** | **9195/21A- SI1-0*B*** | **9195/12A- SI1-0*B*** |
| **Connection diagram** |  |  |

- **For several pac-Carriers**

1. These are routed into the last channel on the first pac- Carrier; this avoids any external wiring of LFD signal (one channel is reserved for all line faults in switch cabinet).



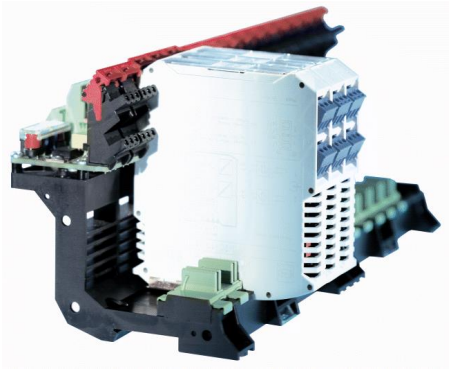

STAHL
Point to Point Solutions
Safety PLC or Process Control System
I/O
I/O
I/O
I/O
I/O
HART
Zone 2 Div 2
Zone 1
Classic/HART Field Device
Point-to-Point (non-intrinsically safe)
Classic/HART Field Device
Point-to-Point (intrinsically safe)
HART Field Device
Point-to-Point with HART isolation
HART Field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

## Contents

| SIMATIC ET 200M | | | | pac-Carrier (Ex-MTA) | | | | |
|---|---|---|---|---|---|---|---|---|
| **Signal type** | **I/O cards type** | **SIEMENS cable type** | **Channels** | **Slots** | **HART-MUX** | **pac-Carrier type** | **ISpac** | **page** |
| DI | 6ES7 326-1BK02-0AB0 | 6ES7922-3B..0-0AS0 | 24 | 12 | No | 9195/42A-SI2-01C7 | 9170/2*-11-11<br>9170/21-14-11 | 9-13 |
| | 6ES7 326-1BK02-0AB0 | 6ES7922-3B..0-0AS0 | 24 | 24 | No | 9195/31A-SI2-01C7 | 9170/1*-11-11<br>9170/11-14-11 | 15-19 |
| DO | 6ES7 326-2BF10-0AB0 | 6ES7922-3B..0-0AN0 | 10 | 10 | No | 9195/51A-SI2-02B4 | 9175/10-1*-11<br>9176/10-1*-00 | 21-26 |
| | 6ES7 326-2BF10-0AB0 | 6ES7922-3B..0-0AS0 | 10 | 10 | No | 9195/51A-SI2-02C7 | 9172/11-11-00 | 27-31 |
| AI | 6ES7 336-4GE00-0AB0 | 6ES7922-3B..0-0AU0 | 6 | 6 | Yes | 9195/11H-SI2-03C7 | 9160/13-11-11<br>9160/13-11-13<br>9163/13-11-11<br>9182/10-51-13 | 33-37 |

**pac-Carrier**
**Type 9195/42A-SI2-01C7**

**For SIEMENS / ET200M / 6ES7 326–1BK02–0AB0**

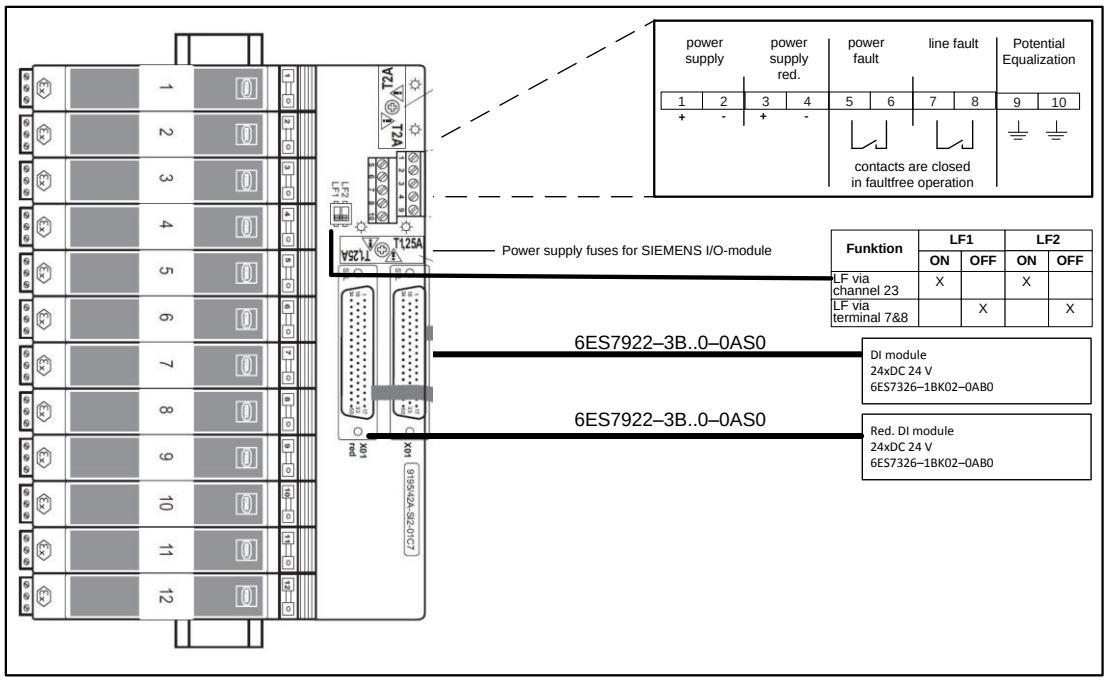


05179E0

- Signal types: 24 x DI
- pac-Carrier for 12 modules, up to 24 signals
- ISpac isolator 9170/2.-11-11 and 9170/21-14-11 can be used
- Customized system cable type 6ES7922–3B..0–0AS0 to fail-safe module
- Redundant power supply with fault signalization contact and exchangeable fuses
- LFD can be routed into the last channel on the pac- Carrier; this avoids any external wiring of these alarm signals (switch LF1 and LF2 ON).
- 2 x T 1,25 A Fuse for power supply SIEMENS I/O-module
- 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

Comfortable and simple integration of the I.S. isolators ISpac into SIEMENS / fail-safe modular I/O station via system specific connection boards and system cables.

## System overview



## Selection table

| | I/O station | | | | pac-Carrier | |
|---|---|---|---|---|---|---|
| **DCS manufacturer** | **Distributed I/O system** | **I/O card type** | **SIEMENS cable type** | **Signal type** | **Slots** | **Type** |
| SIEMENS | ET200M | 6ES7 326–1BK02–0AB0 | 6ES7922–3B..0–0AS0 | 24 x DI | 12 | 9195/42A-SI2-01C7 |

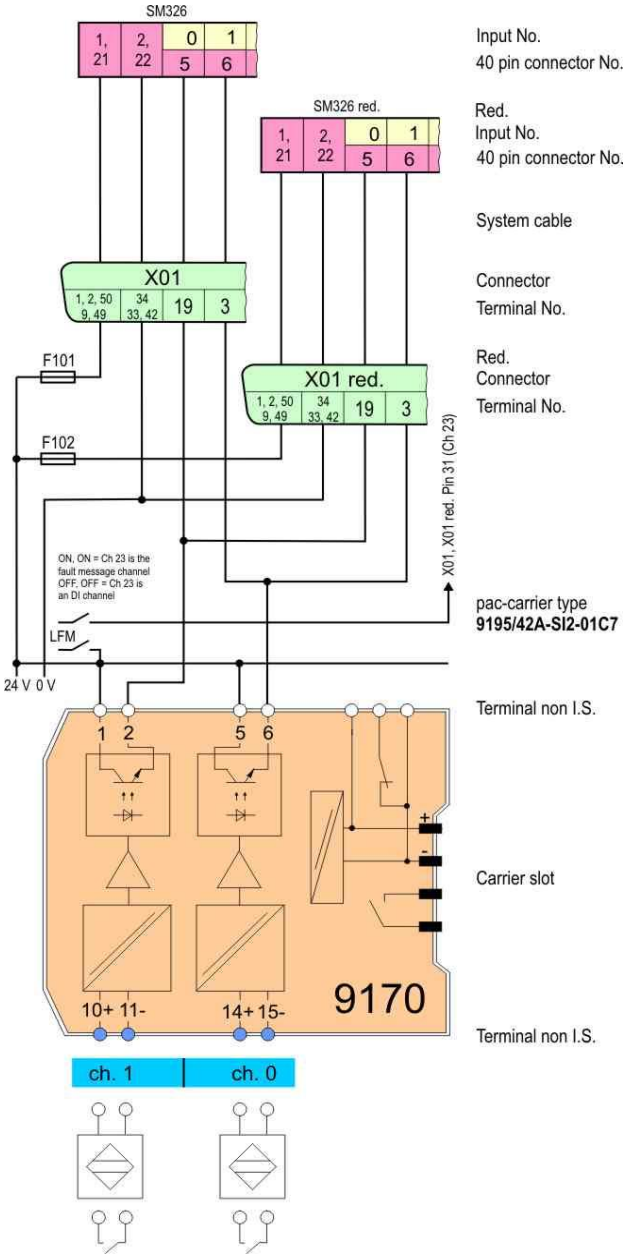
| **Technical data** | |
|---|---|
| **Certificates** | BVS 03 ATEX E213 X |
| **Explosion protection** | ⟨Ex⟩ II 3 G Ex nA nC II T4 Gc |
| **Installation** | In Zone 2, Zone 22 (non-conductive dust), Div. 2 and in the safe area |
| **Power supply** | **(X31)** |
| Nominal voltage $U_N$ | 24 V DC (19 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 | 24 |
| **Connection automation system** | **(X01, X01 Red.)** |
| Connection | plug D-Sub 50 M pole |
| Number of channels | up to 24 |
| Fuse | 2 x T 1,25 A; exchangeable, for power supply SIEMENS I/O-module |
| **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 |
| Line fault switch LF1, LF2 “ON” | LF via last channel of pac- Carrier |
| Line fault switch LF1, LF2 “OFF” | LF via terminal 7 & 8 of pac- Carrier |
| **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 | appprox.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)**

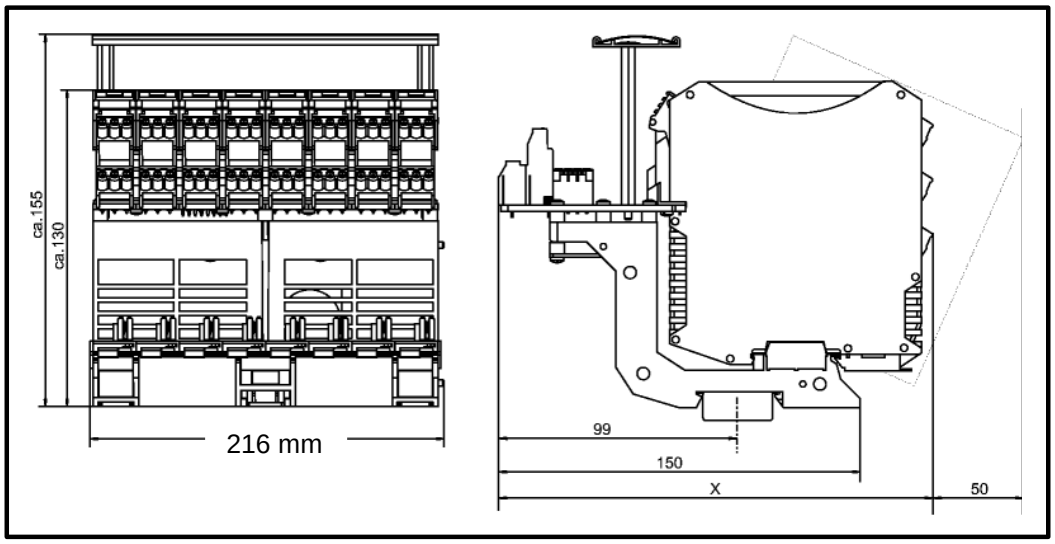
**Typical loop for 2 channel application**




| | |
|---|---|
| i | The last channel can be used as a fault message channel or as a signal channel |

| 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** |

## 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 appprox.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

For dual channel ISpac modules
SIEMENS Modul: 6ES7 326–1BK02–0AB0 (24 x DI)

**6ES7 326-1BK02-0AB0** F-DI 24 x DC 24 V

| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 0 | 10 | + | 1 | + | + 24 V | | 0 |
| | 11 | - | | - | 19 | 5 | |
| 1 | 14 | + | | + | + 24 V | | 1 |
| | 15 | - | | - | 3 | 6 | |
| 2 | 10 | + | 2 | + | + 24 V | | 2 |
| | 11 | - | | - | 36 | 7 | |
| 3 | 14 | + | | + | + 24 V | | 3 |
| | 15 | - | | - | 20 | 8 | |
| 4 | 10 | + | 3 | + | + 24 V | | 4 |
| | 11 | - | | - | 4 | 9 | |
| 5 | 14 | + | | + | + 24 V | | 5 |
| | 15 | - | | - | 21, 37 | 10 | |
| 6 | 10 | + | 4 | + | + 24 V | | 6 |
| | 11 | - | | - | 38 | 12 | |
| 7 | 14 | + | | + | + 24 V | | 7 |
| | 15 | - | | - | 22 | 13 | |
| 8 | 10 | + | 5 | + | + 24 V | | 8 |
| | 11 | - | | - | 39 | 14 | |
| 9 | 14 | + | | + | + 24 V | | 9 |
| | 15 | - | | - | 23 | 15 | |
| 10 | 10 | + | 6 | + | + 24 V | | 10 |
| | 11 | - | | - | 7 | 16 | |
| 11 | 14 | + | | + | + 24 V | | 11 |
| | 15 | - | | - | 40 | 17 | |

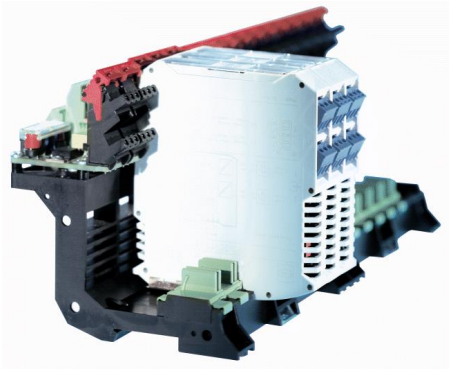
**6ES7 326-1BK02-0AB0** F-DI 24 x DC 24 V

| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 12 | 10 | + | 7 | + | + 24 V | | 12 |
| | 11 | - | | - | 43 | 25 | |
| 13 | 14 | + | | + | + 24 V | | 13 |
| | 15 | - | | - | 27 | 26 | |
| 14 | 10 | + | 8 | + | + 24 V | | 14 |
| | 11 | - | | - | 11 | 27 | |
| 15 | 14 | + | | + | + 24 V | | 15 |
| | 15 | - | | - | 44 | 28 | |
| 16 | 10 | + | 9 | + | + 24 V | | 16 |
| | 11 | - | | - | 28 | 29 | |
| 17 | 14 | + | | + | + 24 V | | 17 |
| | 15 | - | | - | 12, 13 | 30 | |
| 18 | 10 | + | 10 | + | + 24 V | | 18 |
| | 11 | - | | - | 29 | 32 | |
| 19 | 14 | + | | + | + 24 V | | 19 |
| | 15 | - | | - | 46 | 33 | |
| 20 | 10 | + | 11 | + | + 24 V | | 20 |
| | 11 | - | | - | 30 | 34 | |
| 21 | 14 | + | | + | + 24 V | | 21 |
| | 15 | - | | - | 14 | 35 | |
| 22 | 10 | + | 12 | + | + 24 V | | 22 |
| | 11 | - | | - | 47 | 36 | |
| 23 | 14 | + | | + | + 24 V | | 23 |
| | 15 | - | | - | 31 | 37 | |
| 0-23 | L+ | | | + | 1, 2, 50, 9, 49 | 1, 21 | 0-23 |
| | M | | | - | 34, 33, 42 | 2, 22 | |

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 9195/31A-SI2-01C7**

**For SIEMENS / ET200M / 6ES7 326–1BK02–0AB0**

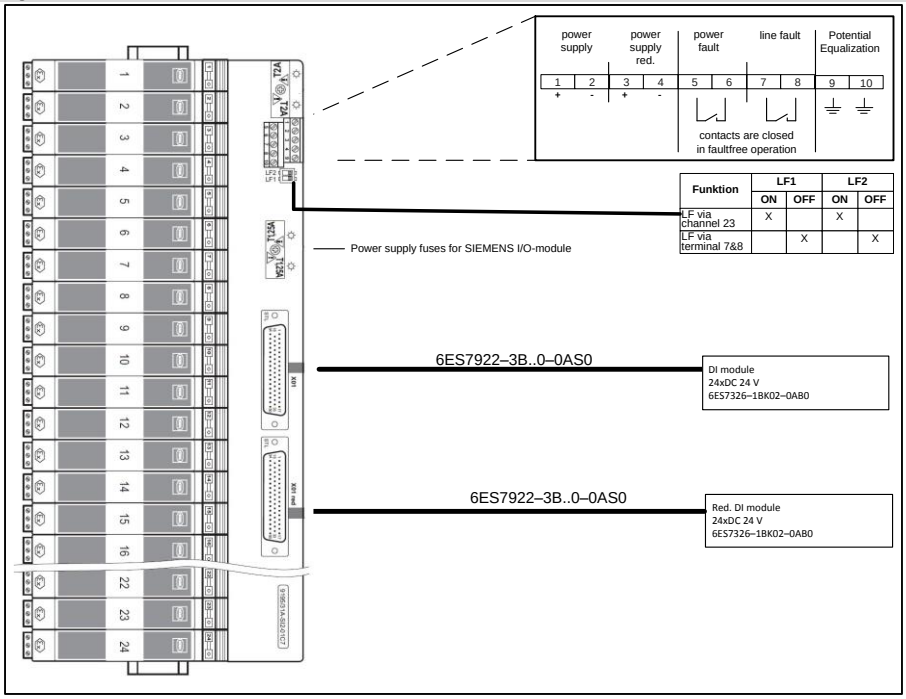


05179E0

- Signal types: 24 x DI
- pac- Carrier for 24 modules, up to 24 signals
- ISpac isolator 9170/1.-11-11 and 9170/11-14-11 can be used
- Customized system cable type 6ES7922–3B..0–0AS0 to fail-safe module
- Redundant power supply with fault signalization contact and exchangeable fuses
- LFD can be routed into the last channel on the pac- Carrier; this avoids any external wiring of these alarm signals (switch LF1 and LF2 ON).
- 2 x T 1,25 A Fuse for power supply SIEMENS I/O-module
- 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

Comfortable and simple integration of the I.S. isolators ISpac into SIEMENS / fail-safe modular I/O station via system specific connection boards and system cables.

## System overview



## Selection table

| | I/O station | | | | pac-Carrier | |
|---|---|---|---|---|---|---|
| **DCS manufacturer** | **Distributed I/O system** | **I/O card type** | **SIEMENS cable type** | **Signal type** | **Slots** | **Type** |
| SIEMENS | ET200M | 6ES7 326–1BK02–0AB0 | 6ES7922–3B..0–0AS0 | 24 x DI | 24 | 9195/31A-SI2-01C7 |

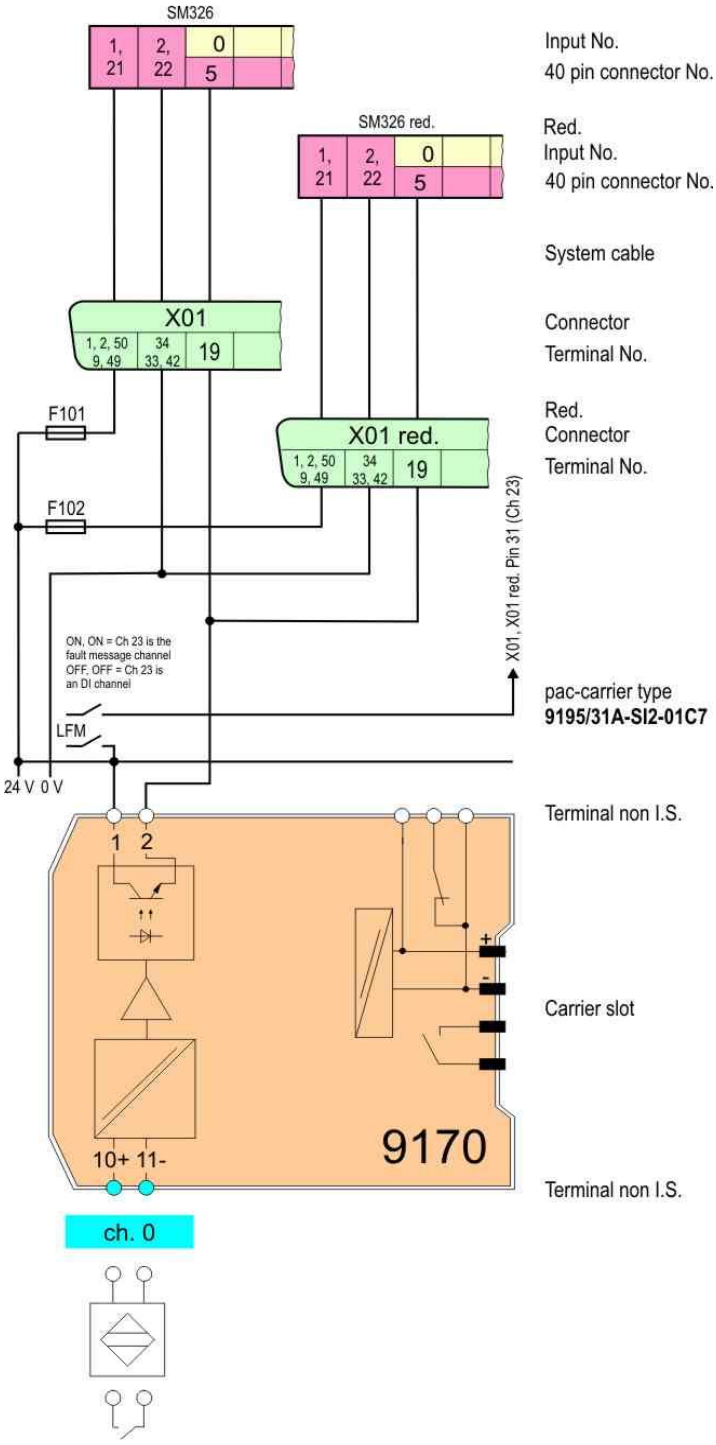
| **Technical data** | |
|---|---|
| **Certificates** | BVS 03 ATEX E213 X |
| **Explosion protection** | ⟨Ex⟩ II 3 G Ex nA nC II T4 Gc |
| **Installation** | In Zone 2, Zone 22 (non-conductive dust), Div. 2 and in the safe area |
| **Power supply** | **(X31)** |
| Nominal voltage $U_N$ | 24 V DC (19 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 | 24 |
| **Connection automation system** | **(X01, X01 Red.)** |
| Connection | plug D-Sub 50 M pole |
| Number of channels | up to 24 |
| Fuse | 2 x T 1,25 A; exchangeable, for power supply SIEMENS I/O-module |
| **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 |
| Line fault switch LF1, LF2 “ON” | LF via last channel of pac- Carrier |
| Line fault switch LF1, LF2 “OFF” | LF via terminal 7 & 8 of pac- Carrier |
| **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 | appprox.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)**

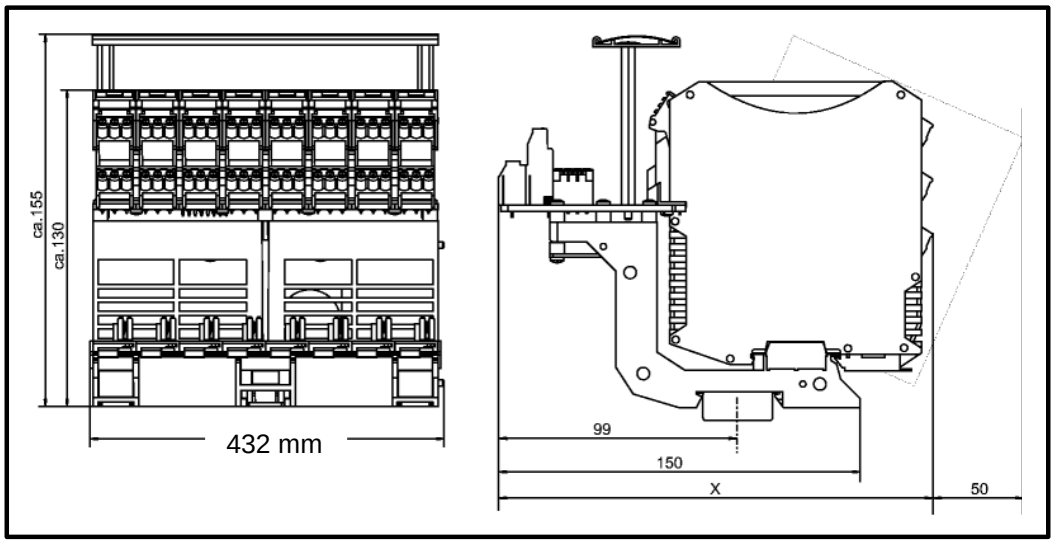
**Typical loop for 1 channel application**




| | |
|---|---|
| i | The last channel can be used as a fault message channel or as a signal channel |

| 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** |

## 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 appprox.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

For single channel ISpac modules
SIEMENS Modul: 6ES7 326–1BK02–0AB0 (24 x DI)

**6ES7 326-1BK02-0AB0** F-DI 24 x DC 24 V

| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 0 | 10 | + | 1 | + | + 24 V | | 0 |
| | 11 | - | | - | 19 | 5 | |
| 1 | 10 | + | 2 | + | + 24 V | | 1 |
| | 11 | - | | - | 3 | 6 | |
| 2 | 10 | + | 3 | + | + 24 V | | 2 |
| | 11 | - | | - | 36 | 7 | |
| 3 | 10 | + | 4 | + | + 24 V | | 3 |
| | 11 | - | | - | 20 | 8 | |
| 4 | 10 | + | 5 | + | + 24 V | | 4 |
| | 11 | - | | - | 4 | 9 | |
| 5 | 10 | + | 6 | + | + 24 V | | 5 |
| | 11 | - | | - | 21, 37 | 10 | |
| 6 | 10 | + | 7 | + | + 24 V | | 6 |
| | 11 | - | | - | 38 | 12 | |
| 7 | 10 | + | 8 | + | + 24 V | | 7 |
| | 11 | - | | - | 22 | 13 | |
| 8 | 10 | + | 9 | + | + 24 V | | 8 |
| | 11 | - | | - | 39 | 14 | |
| 9 | 10 | + | 10 | + | + 24 V | | 9 |
| | 11 | - | | - | 23 | 15 | |
| 10 | 10 | + | 11 | + | + 24 V | | 10 |
| | 11 | - | | - | 7 | 16 | |
| 11 | 10 | + | 12 | + | + 24 V | | 11 |
| | 11 | - | | - | 40 | 17 | |

**6ES7 326-1BK02-0AB0** F-DI 24 x DC 24 V

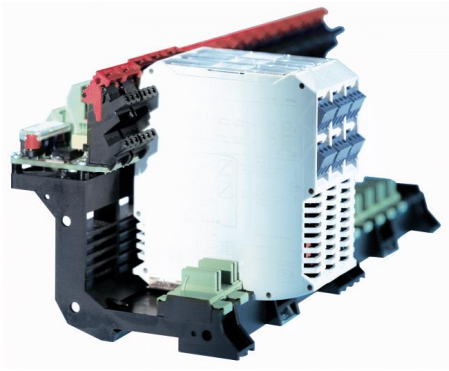
| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 12 | 10 | + | 13 | + | + 24 V | | 12 |
| | 11 | - | | - | 43 | 25 | |
| 13 | 10 | + | 14 | + | + 24 V | | 13 |
| | 11 | - | | - | 27 | 26 | |
| 14 | 10 | + | 15 | + | + 24 V | | 14 |
| | 11 | - | | - | 11 | 27 | |
| 15 | 10 | + | 16 | + | + 24 V | | 15 |
| | 11 | - | | - | 44 | 28 | |
| 16 | 10 | + | 17 | + | + 24 V | | 16 |
| | 11 | - | | - | 28 | 29 | |
| 17 | 10 | + | 18 | + | + 24 V | | 17 |
| | 11 | - | | - | 12, 13 | 30 | |
| 18 | 10 | + | 19 | + | + 24 V | | 18 |
| | 11 | - | | - | 29 | 32 | |
| 19 | 10 | + | 20 | + | + 24 V | | 19 |
| | 11 | - | | - | 46 | 33 | |
| 20 | 10 | + | 21 | + | + 24 V | | 20 |
| | 11 | - | | - | 30 | 34 | |
| 21 | 10 | + | 22 | + | + 24 V | | 21 |
| | 11 | - | | - | 14 | 35 | |
| 22 | 10 | + | 23 | + | + 24 V | | 22 |
| | 11 | - | | - | 47 | 36 | |
| 23 | 10 | + | 24 | + | + 24 V | | 23 |
| | 11 | - | | - | 31 | 37 | |
| 0-23 | L+ | | | + | 1, 2, 50, 9, 49 | 1, 21 | 0-23 |
| | M | | | - | 34, 33, 42 | 2, 22 | |

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 9195/51A-SI2-02B4**

**For SIEMENS / ET200M/ 6ES7326–2BF10–0AB0**

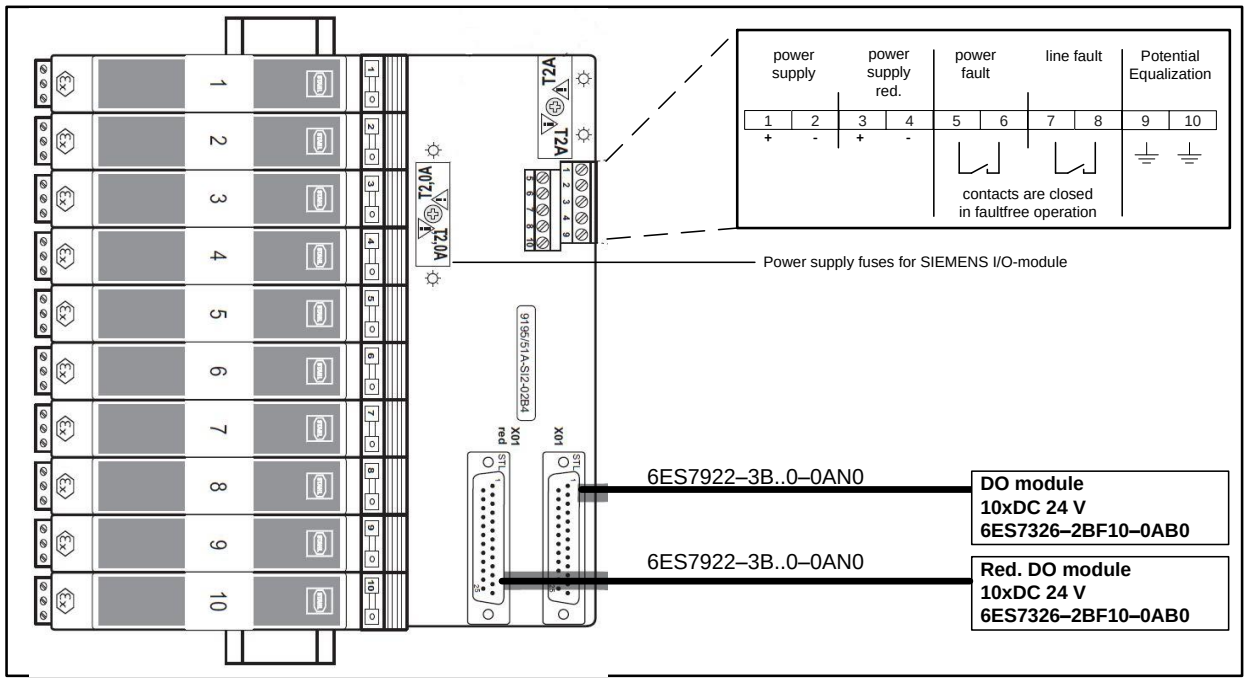
- Signal types: 10 x DO
- pac-Carrier for 10 modules, up to 10 signals
- ISpac isolator 9175/10-1.-11 and 9176/10-1.-00 can be used
- Customized system cable type 6ES7922-3B..0-0AN0 to fail-safe module
- Redundant power supply with fault signalization contact and exchangeable fuses
- 2 x T 2.0 A Fuse for power supply SIEMENS I/O-module
- 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



05179E0

Comfortable and simple integration of the I.S. isolators ISpac into SIEMENS / fail-safe modular I/O station via system specific connection boards and system cables.

## System overview



## Selection table

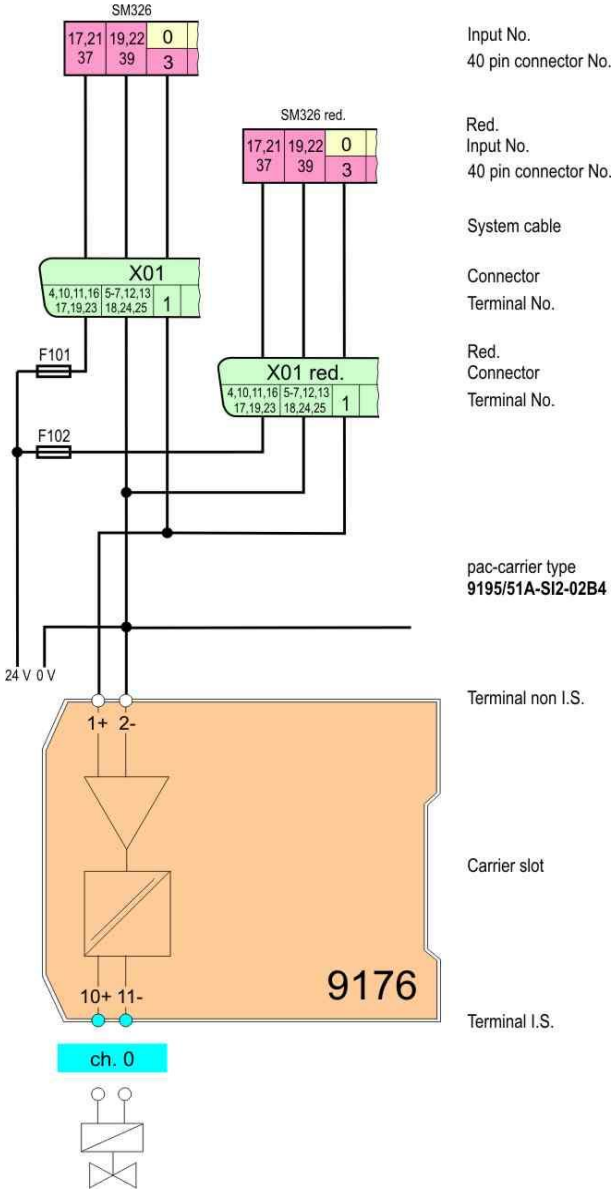
| | I/O station | | | | pac-Carrier | |
|---|---|---|---|---|---|---|
| **DCS manufacturer** | **Distributed I/O system** | **I/O card type** | **SIEMENS cable type** | **Signal type** | **Slots** | **Type** |
| SIEMENS | ET200M | 6ES7326–2BF10–0AB0 | 6ES7922-3B..0-0AN0 | 10 x DO | 10 | 9195/51A-SI2-02B4 |

| **Technical data** | |
|---|---|
| **Certificates** | BVS 03 ATEX E213 X |
| **Explosion protection** | ⟨Ex⟩ II 3 G Ex nA nC II T4 Gc |
| **Installation** | In Zone 2, Zone 22 (non-conductive 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 | 10 |
| **Connection automation system** | **(X01, X01 Red.)** |
| Connection | plug D-Sub 25 M pole |
| Number of channels | up to 10 |
| Fuse | 2 x T 2.0 A; exchangeable, for power supply SIEMENS I/O-module |
| **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 |
| **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 | appprox.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

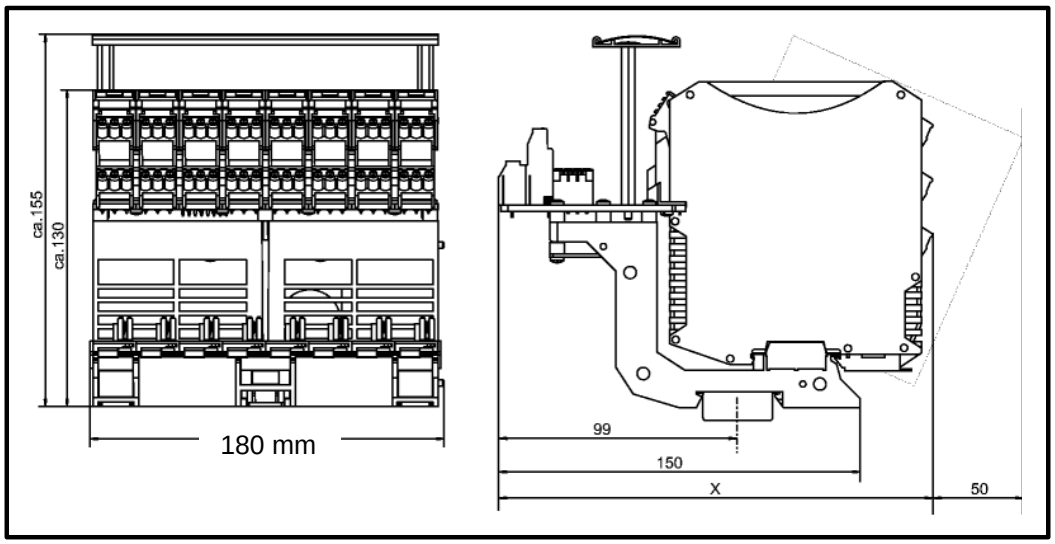
The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info.

**Digital output (DO)**
**Typical loop for 1 channel application**



| 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** |

## 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 appprox.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

For single Channel ISpac modules
SIEMENS Modul: 6ES7326–2BF10–0AB0 (10 x DO)

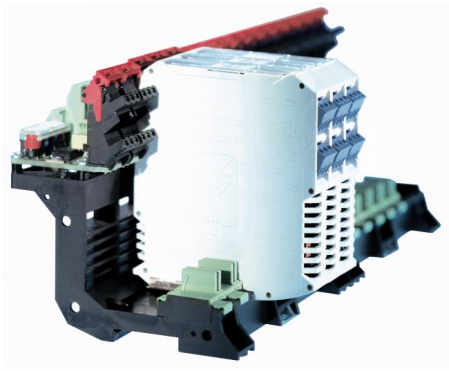
| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 0 | 10 | + | 1 | + | 1 | 3 | 0 |
| | 11 | - | | - | 0 V | | |
| 1 | 10 | + | 2 | + | 14 | 6 | 1 |
| | 11 | - | | - | 0 V | | |
| 2 | 10 | + | 3 | + | 2 | 9 | 2 |
| | 11 | - | | - | 0 V | | |
| 3 | 10 | + | 4 | + | 15 | 12 | 3 |
| | 11 | - | | - | 0 V | | |
| 4 | 10 | + | 5 | + | 3 | 15 | 4 |
| | 11 | - | | - | 0 V | | |
| 5 | 10 | + | 6 | + | 20 | 23 | 5 |
| | 11 | - | | - | 0 V | | |
| 6 | 10 | + | 7 | + | 8 | 26 | 6 |
| | 11 | - | | - | 0 V | | |
| 7 | 10 | + | 8 | + | 21 | 29 | 7 |
| | 11 | - | | - | 0 V | | |
| 8 | 10 | + | 9 | + | 9 | 32 | 8 |
| | 11 | - | | - | 0 V | | |
| 9 | 10 | + | 10 | + | 22 | 35 | 9 |
| | 11 | - | | - | 0 V | | |
| 0-9 | L+ | | | + | 4, 16, 17, 19, 10, 11, 23 | 17, 18, 21, 37, 38 | 0-9 |
| | M | | | - | 5, 6,7, 12, 13, 18, 24, 25 | 19, 20, 22, 39, 40 | |

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 9195/51A-SI2-02C7**

**For SIEMENS / ET200M / 6ES7326–2BF10–0AB0**

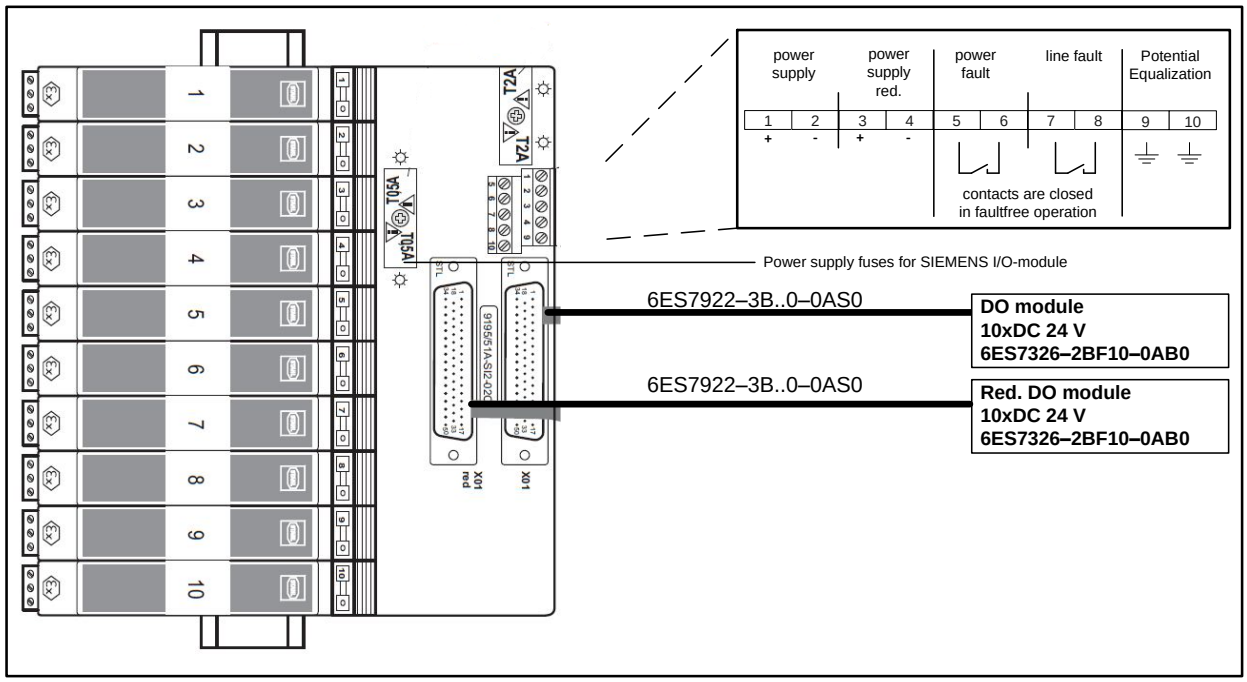
- Signal types: 10 x DO
- pac-Carrier for 10 modules, up to 10 signals
- ISpac isolator 9172/11-11-00 can be used
- Customized system cable type 6ES7922-3B..0-0AS0 to fail-safe module
- Redundant power supply with fault signalization contact and exchangeable fuses
- 2 x T 0,5 A Fuse for power supply SIEMENS I/O-module
- 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



05179E0

Comfortable and simple integration of the I.S. isolators ISpac into SIEMENS / fail-safe modular I/O station via system specific connection boards and system cables.

## System overview



## Selection table

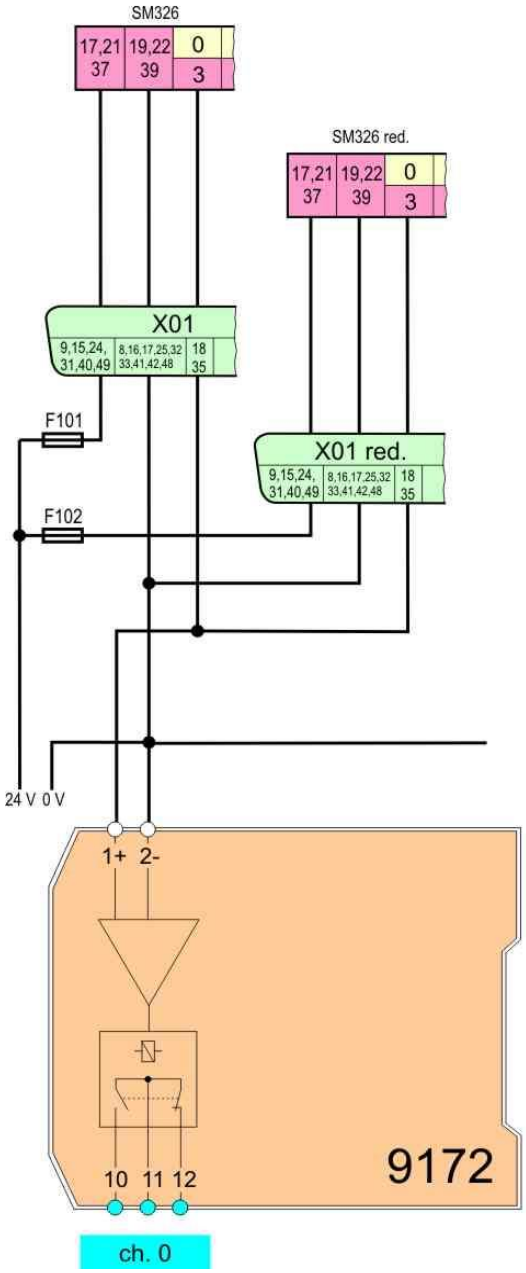
| | I/O station | | | | pac-Carrier | |
|---|---|---|---|---|---|---|
| **DCS manufacturer** | **Distributed I/O system** | **I/O card type** | **SIEMENS cable type** | **Signal type** | **Slots** | **Type** |
| SIEMENS | ET200M | 6ES7326–2BF10–0AB0 | 6ES7922-3B..0-0AS0 | 10 x DO | 10 | 9195/51A-SI2-02C7 |

| **Technical data** | |
|---|---|
| **Certificates** | BVS 03 ATEX E213 X |
| **Explosion protection** | ⟨Ex⟩ II 3 G Ex nA nC II T4 Gc |
| **Installation** | In Zone 2, Zone 22 (non-conductive 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 | 10 |
| **Connection automation system** | **(X01, X01 Red.)** |
| Connection | plug D-Sub 50 M pole |
| Number of channels | up to 10 |
| Fuse | 2 x T 0,5 A; exchangeable, for power supply SIEMENS I/O-module |
| **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 |
| **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 | appprox.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)**
**Typical loop for 1 channel application**




Input No.
40 pin connector No.

Red.
Input No.
40 pin connector No.

System cable

Connector
Terminal No.

Red.
Connector
Terminal No.

pac-carrier type
**9195/51A-SI2-02C7**

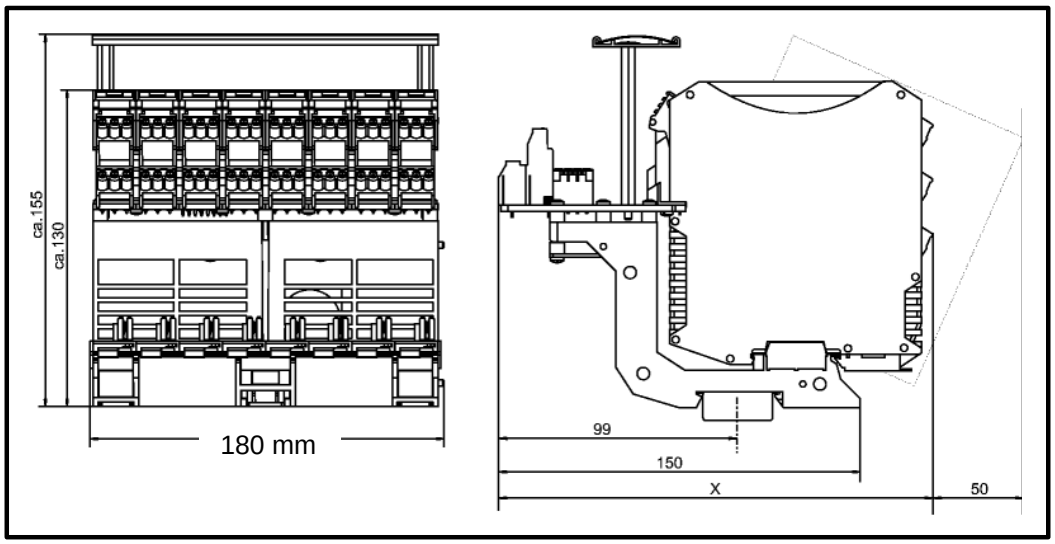
Terminal non I.S.

Carrier slot

Terminal I.S.

| 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** |

## 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 appprox.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

For dual Channel ISpac modules
SIEMENS Modul: 6ES7326–2BF10–0AB0 (10 x DO)

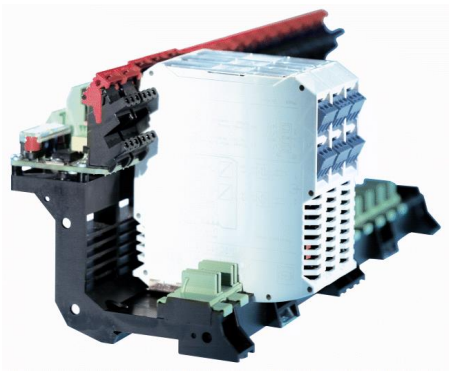
| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 40 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 0 | 10 | + | 1 | + | 18 | 3 | 0 |
| | 11 | - | | - | 0 V | | |
| 1 | 10 | + | 2 | + | 3 | 6 | 1 |
| | 11 | - | | - | 0 V | | |
| 2 | 10 | + | 3 | + | 4 | 9 | 2 |
| | 11 | - | | - | 0 V | | |
| 3 | 10 | + | 4 | + | 38 | 12 | 3 |
| | 11 | - | | - | 0 V | | |
| 4 | 10 | + | 5 | + | 23 | 15 | 4 |
| | 11 | - | | - | 0 V | | |
| 5 | 10 | + | 6 | + | 26 | 23 | 5 |
| | 11 | - | | - | 0 V | | |
| 6 | 10 | + | 7 | + | 27 | 26 | 6 |
| | 11 | - | | - | 0 V | | |
| 7 | 10 | + | 8 | + | 28 | 29 | 7 |
| | 11 | - | | - | 0 V | | |
| 8 | 10 | + | 9 | + | 29 | 32 | 8 |
| | 11 | - | | - | 0 V | | |
| 9 | 10 | + | 10 | + | 14 | 35 | 9 |
| | 11 | - | | - | 0 V | | |
| 0-9 | L+ | | | + | 9, 15, 24, 31, 40, 49 | 17, 18, 21, 37, 38 | 0-9 |
| | M | | | - | 8, 16 ,17, 25, 32, 33, 41, 42, 48 | 19, 20, 22, 39, 40 | |

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 9195/11H-SI2-03C7**

**For SIEMENS / ET200M / 6ES7336–4GE00–0AB0**

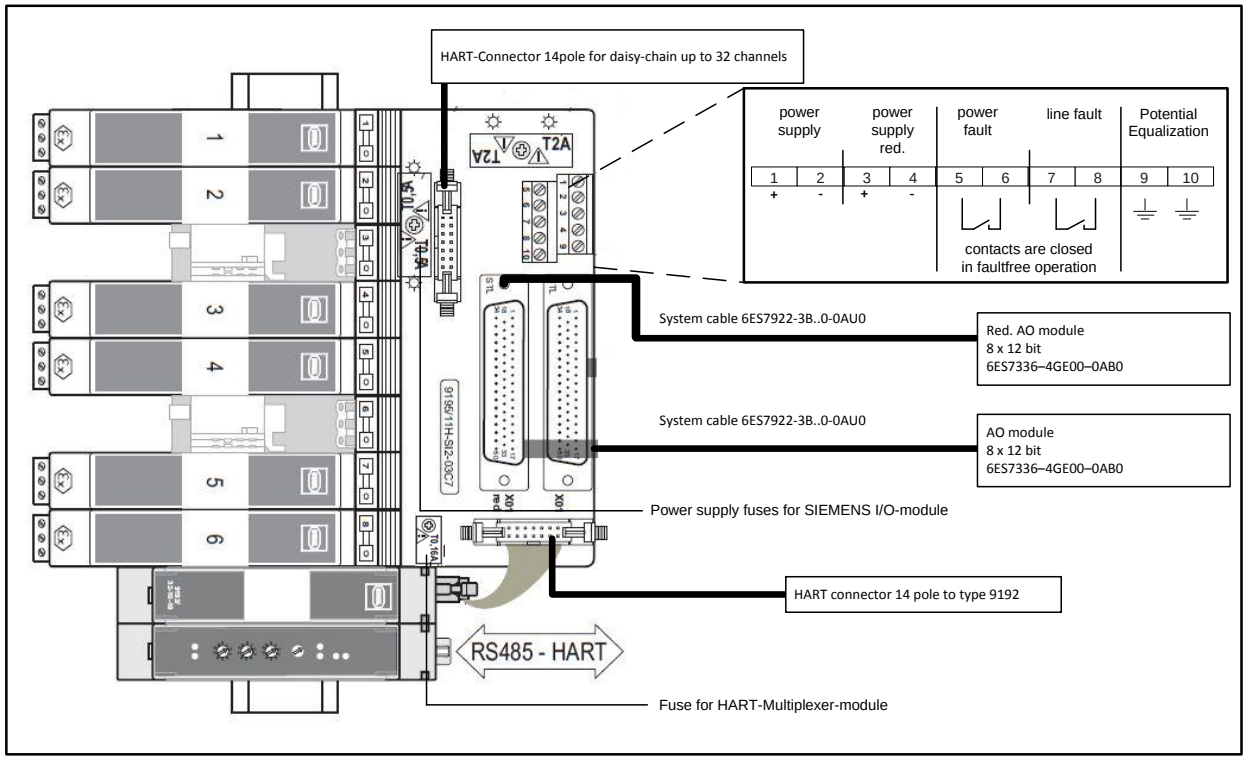
- Signal types: 6 x AI
- pac-Carrier for 6 modules, up to 6 signals
- ISpac isolator 9160/13-11-11, 9160/13-11-13, 9163/13-11-11, 9182/10-51-13 can be used
- Customized system cable type 6ES7922-3B..0-0AU0 to fail-safe module
- Redundant power supply with fault signalization contact and exchangeable fuses
- 2 x T 0,5 A Fuse for power supply SIEMENS I/O-module
- 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



05179E0

Comfortable and simple integration of the I.S. isolators ISpac into SIEMENS / fail-safe modular I/O station via system specific connection boards and system cables.

## System overview



## Selection table

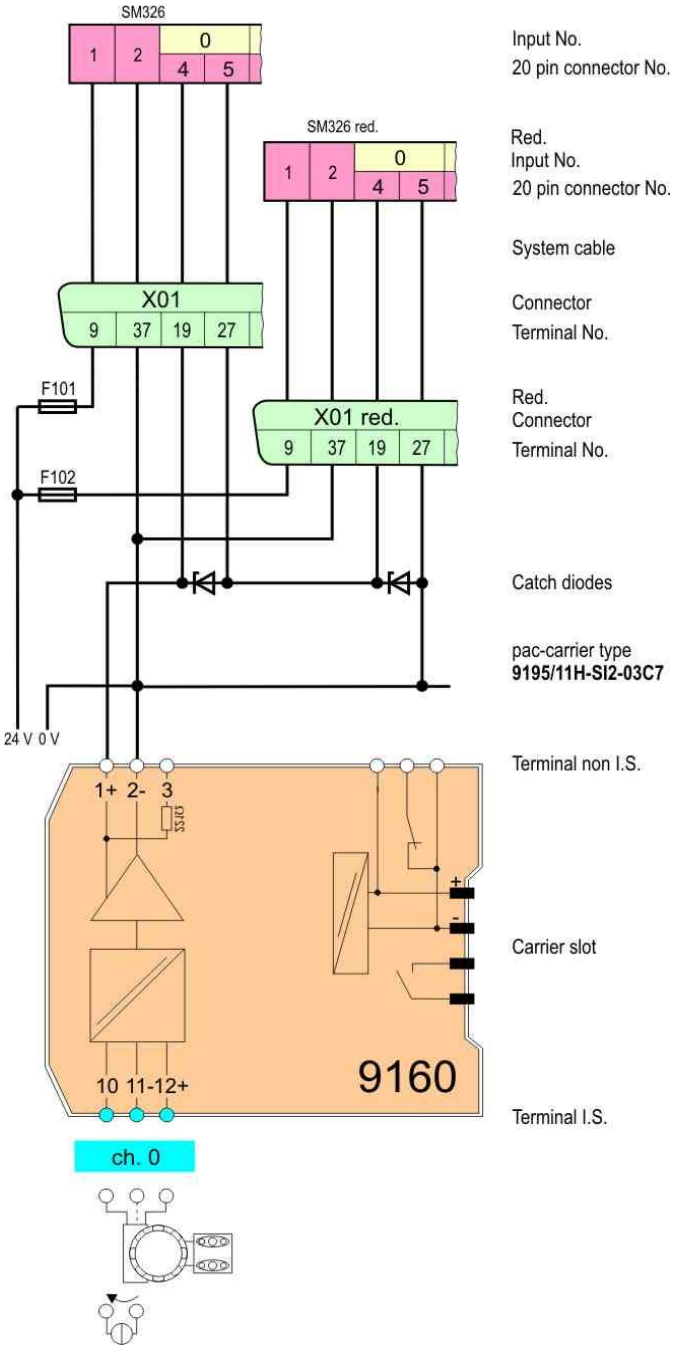
| | I/O station | | | | pac-Carrier | |
|---|---|---|---|---|---|---|
| **DCS manufacturer** | **Distributed I/O system** | **I/O card type** | **SIEMENS cable type** | **Signal type** | **Slots** | **Type** |
| SIEMENS | ET200M | 6ES7336–4GE00–0AB0 | 6ES7922-3B..0-0AU0 | 6 x AI | 6 | 9195/11H-SI2-03C7 |

| **Technical data** | |
|---|---|
| **Certificates** | BVS 03 ATEX E213 X |
| **Explosion protection** | Ⓔx II 3 G Ex nA nC II T4 Gc |
| **Installation** | In Zone 2, Zone 22 (non-conductive 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 | 6 |
| **Connection automation system** | **(X01, X01 Red.)** |
| Connection | plug D-Sub 50 M pole |
| Number of channels | up to 6 |
| Fuse | 2 x T 0,5 A; exchangeable, for power supply SIEMENS I/O-module |
| **HART interface** | |
| Connector X1 | HART connector 14 pole (to HART Multiplexer type 9192/32 or to first pac- Carrier) |
| Connector X2 | HART connector 14 pole optional to second pac- Carrier |
| Fuse | 1 x T 0,16 A; exchangeable, for power supply HART Multiplexer 9192 |
| **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 |
| **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

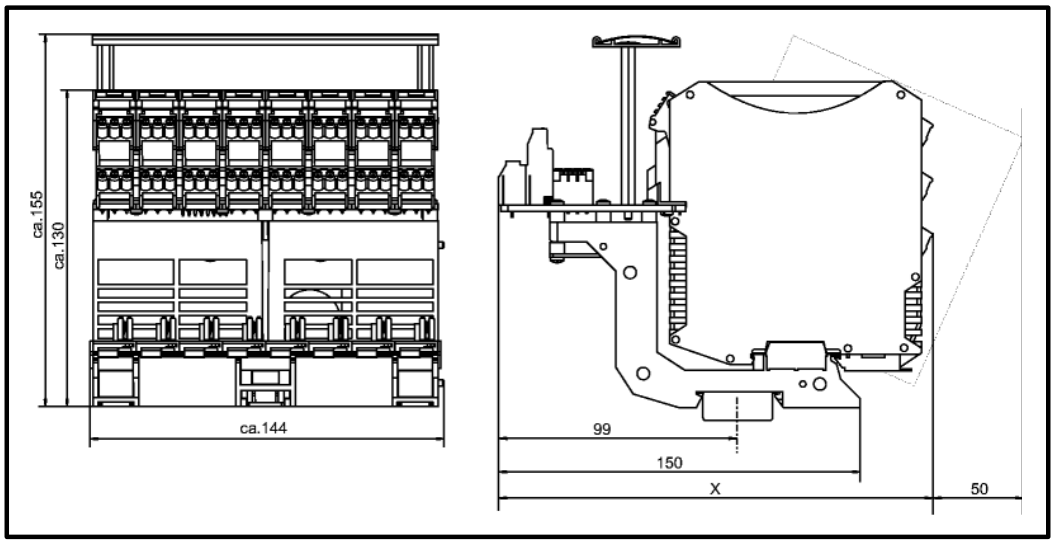
The diagrams below show typical applications. Please refer to the connection list to get the entire connection scheme. Basic technical parameters of the ISpac isolating repeaters can be found at the end of this document. The detailed specifications can be downloaded at: www.ispac.info

**Transmitter supply unit (AI)**
**Typical loop for 1 channel application**



| 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** |

## 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

For single Channel ISpac modules
SIEMENS Modul: 6ES7336–4GE00–0AB0 (6 x AI)

| Channel | Terminal i.s. | | Carrier slot | Terminal X01/ X01 Red. | | 20 Pin connector | Input No. |
|---|---|---|---|---|---|---|---|
| 0 | 10 | + | 1 | + | 19 | 4 | 0 |
| | 11 | - | | - | 27 | 5 | |
| 1 | 10 | + | 2 | + | 20 | 7 | 1 |
| | 11 | - | | - | 28 | 8 | |
| | | | 3 | | | | |
| | | | | | | | |
| 2 | 10 | + | 4 | + | 38 | 10 | 2 |
| | 11 | - | | - | 46 | 11 | |
| 3 | 10 | + | 5 | + | 23 | 13 | 3 |
| | 11 | - | | - | 47 | 14 | |
| | | | 6 | | | | |
| | | | | | | | |
| 4 | 10 | + | 7 | + | 40 | 16 | 4 |
| | 11 | - | | - | 15 | 17 | |
| 5 | 10 | + | 8 | + | 8 | 19 | 5 |
| | 11 | - | | - | 32 | 20 | |
| 0-5 | L+ | | | + | 9 | 1 | 0-5 |
| | M | | | - | 37 | 2 | |

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.

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