PSSu Electrical Wiring

PILZ
THE SPIRIT OF SAFETY

Product

Type:	PSSu
Name:	PSSu, PSS 4000
Manufacturer:	Pilz GmbH & Co. KG, Safe Automation

Document

Release Number:	02
Release Date:	17 July 2017

Important

Please see ‘Notice’ on next page.

Document Revision History

Release	Date	Changes	Chapter
01	2008-07-22	Creation as internal version	All
02	2017-07-17	Creation as official version for web publishing	All

NOTICE

This document provides comprehensive information about all **ever** available modules of the PSSuniversal system of the 1st generation.
Partially certain modules are no longer available or only for one customer (no free sale).
Therefore: Before you start with the design your application, please check the availability of the respective components in Pilz E-Shop and contact your sales representative.

Validity of Application Note

This present Application Note is valid until a new version of the document is published.
This and other Application Notes can be downloaded in the latest version and for free from www.pilz.com.
For a simple search, use our content document (1002400) or the direct search function in the download area.

Exclusion of liability

We have taken great care in compiling this application note. It contains information about our company and our products. All statements are made in accordance with the current status of technology and to the best of our knowledge and belief.
While every effort has been made to ensure the information provided is accurate, we cannot accept liability for the accuracy and entirety of the information provided, except in the case of gross negligence. In particular, all information on applicable standards, safety-related classifications and time characteristics should be viewed as provisional. In particular it should be noted that statements do not have the legal quality of assurances or assured properties.
We are grateful for any feedback on the contents.

July 2017

Abbreviations

Abbreviation / term	Description	Source
AN	**A**pplication **N**ote	www.pilz.com > AN content (1002400)
PSSu	**PSSu**niversal, **1**st generation Decentralised system PSSu I/O with fieldbuses	www.pilz.com > PSSuniversal
PSS u2	**PSSu**niversal, **2**nd generation	www.pilz.com > PSSuniversal 2
PSS	Programmable control system (DE: **P**rogrammierbares **S**teuerungs**s**ystem)	www.pilz.com > PSS
PSS 4000	Automation system PSS 4000, **1**st generation with protection type IP20	www.pilz.com > Automation System PSS 4000
PSS67	Decentralised field devices for the Automation systems **PSS** 3000 and PSS 4000 with protection type IP**67**	www.pilz.com > Decentralised Field Devices
AIDA	Automation Initiative of the German Automotive Industry (DE: **A**utomatisierungs**i**nitiative **D**eutscher **A**utomobilhersteller)	VDA: German Association of the Automotive Industry PI: PROFIBUS & PROFINET International

Definition of symbols

- Information that is particularly important is identified as follows:

CAUTION!

This refers to a hazard that can lead to a less serious or minor injury plus material damage, and also provides information on preventive measures that can be taken.

NOTICE

This describes a situation in which the product or devices could be damaged and also provides information on preventive measures that can be taken.
It also highlights areas within the text that are of particular importance.

INFORMATION

This gives advice on applications and provides information on special features.

Contents

1. Useful documentation

Reading the documentation listed below is necessary for understanding this application note. The availability of the indicated tools and safe handling are also presupposed with the user.

1.1. Documentation from Pilz GmbH & Co. KG

No.	Description	Item No. / Download
1	Pilz international homepage, download section	www.pilz.com
2	Technical Catalogue PSSuniversal	1001264-EN-xx www.pilz.com > Download 1001264
3	System Description PSSuniversal	21764-EN-xx www.pilz.com > Download 21764
4	Installation Manual PSSuniversal	21262-EN-xx www.pilz.com > Download 21262
5	Operating Manuals of PSSu modules On each page, the document number of the Operating Manual corresponding to the module is shown on the upper left. Enter this number in the search box of the download area.	www.pilz.com > Download area
6	Application Notes (additional) and other documents On each page, the order number of module corresponding to additional downloadable documents is listed in the fact sheet to the right. » Application Notes (PDF) » Approvals (PDF) » EC Declaration of Conformity (PDF)	www.pilz.com > Download area
7	CAD data of PSSu modules On each page, the order number of module corresponding to downloadable CAD files is listed in the fact sheet to the right. » 2D drawing (PDF and DXF) » 3D model (STP and IGS) » Electrical CAD data (EPLAN P8)	www.pilz.com > Download area

1.2. Documentation from other sources of information

No.	Description	Item No. / Download
1	Shield clamping saddles for Shielding and earthing with Klippon Connect system from company Weidmüller Railholder WSH 18 MT Clamping bracket KLBUE for mounting on Railholder system Clamping bracket KLBUE CO for mounting on Railholder system Clamping bracket KLBUE SC for direct mounting on metal plate	www.weidmueller.com see Chap. 3.6 EMC compliant wiring, page 17

Type of module [1]

Normal version | Coated version (**-T**) | Railway version (**-R**)

Note: Not all versions are available for each module.

Number of Operating manual of module [3]

On each page, the document number of the Operating Manual corresponding to the module is shown on the upper left.

Enter this number in the search box of the download area.

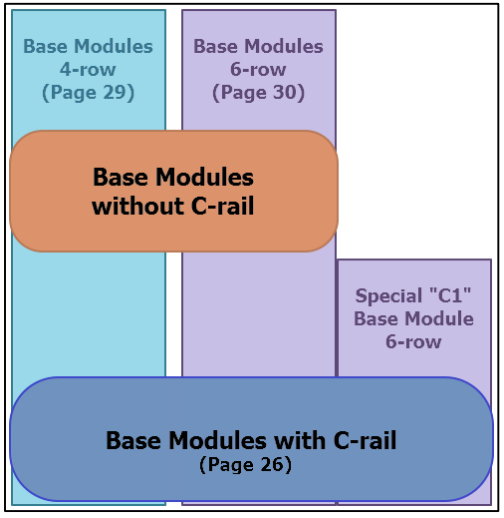
Classification of the combination of Electronic module and Base module

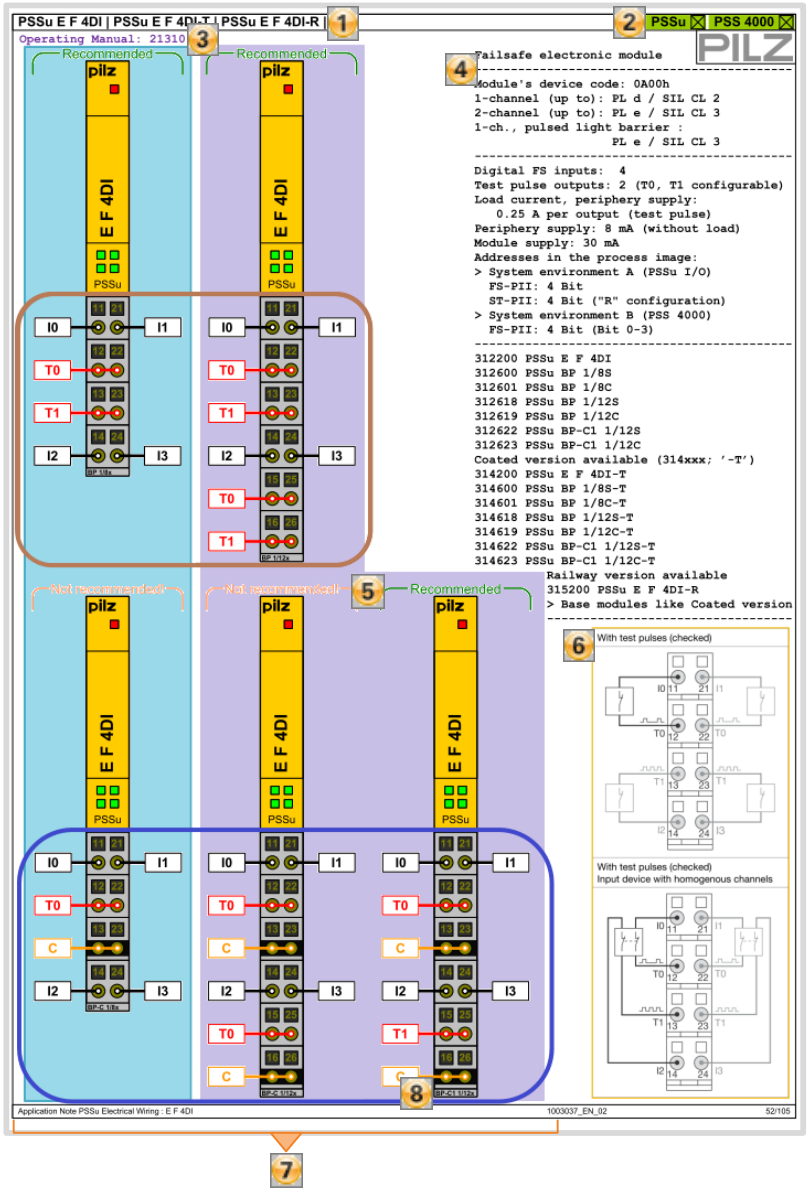
Recommended
This combination always works perfect without functional limitations.

Not recommended!
This combination normally works, but functional restrictions possible.
Please check the manual.

Not permitted!
This combination does not work and can lead to system errors.

Page layout of Electronic modules [7]





Context between **System integration and Limits of I/O** [2] **modules for three possible cases** (examples):

1. I/O module is applicable only for **System environment A** (PSSu I/O)
   » System environment A: maximum number is 24
   » System environment B: maximum number is 0

   PSSu ☒ | PSS 4000 ☐
   `Maximum number of modules per system: 24|0`

2. I/O module is applicable only for **System environment B** (PSSu multi / PSSu PLC)
   » System environment A: maximum number is 0
   » System environment B: maximum number is 16

   PSSu ☐ | PSS 4000 ☒
   `Maximum number of modules per system: 0|16`

3. I/O module is applicable for both **System environments A and B**
   » System environment A: maximum number is 6
   » System environment B: maximum number is 16

   PSSu ☒ | PSS 4000 ☒
   `Maximum number of modules per system: 6|16`

Fact-sheet of module [4]

1. Type with application range
2. Modul's device code
3. Safety characteristic data (only for failsafe moduls)
4. General data with:
   » Type and number of I/O's
   » Electrical data
   » Process image
   (» Mechanical data)
5. Order reference
   The **Order number of module** (here: »312200«) corresponding to additional downloadable documents and CAD files.

   Enter this number in the search box of the download area.

Wiring examples [6]

Typical wiring examples are shown for the module.

Special C1 Base module »BP-C1 1/12x« [8]

Here are all internal 7 signals at the terminals available (page 30)!

Type of modules	Standard or Failsafe	Function (examples)
PSSu E… Electronic modules **PSSu K**… Compact modules	PSSu K **S**… Standard modules PSSu E **F**… Failsafe modules	PSSu E S **PD** – Power distribution PSSu E F **BSW** – Block switching PSSu E F **PS** – General power supply PSSu E F **PS-P** – Power supply for periphery PSSu K S **16DI** – 16 digital inputs PSSu E S **4DO 0.5** – 4 digital outputs with 0.5 A PSSu E F **2DOR 8** – 2 relay outputs with 8 A PSSu E F **DI OZ 2** – One digital input, one dual-pole output with 2 A PSSu E S **2AI U** – 2 analogue inputs, voltage (U) PSSu E S **2AI I se** – 2 analogue inputs, current (I), single-pole ("single ended") PSSu E F **AI PVM I-T** – Analogue Input Peak Value Measurement Current (I), coated PSSu E S **2AO I** – 2 analogue outputs, current (I) PSSu E S **ABS SSI** – counter for SSI sensors PSSu E S **INC** – counter for incremental sensors PSSu E F 4DI-**T** – coated version (**-R** – railway version) PSSu E S 4DO 0.5-**D** – with diagnostics PSSu E S 4DO 0.5-**TD** – coated version, with diagnostics PSSu **CB F** – Cable Base Fail Safe and Standard PSSu **WR S IDN** – Wireless Remote Standard InduraNET PSSu **XB F** – Extension Module Cable Base Fail Safe and Standard

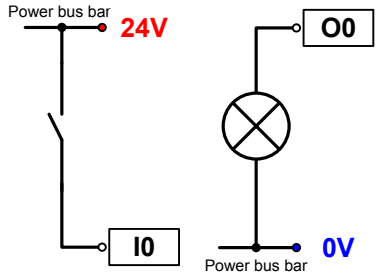
E F DI OZ 2

Base modules	Basic function	Size	Connection type
PSSu B...	PSSu **BP**… – Base module for periphery (input/output) PSSu **BP-C**… – Base module for periphery with C-rail PSSu **BS**… – Base module for power supply PSSu **BS-R**… – Base module for refreshing the power supply	PSSu BP-C **1/8…** – 1 x grid width, 8 connections PSSu BP-C **1/12…** – 1 x grid width, 12 connections PSSu BP-C **2/16…** – 2 x grid width, 16 connections PSSu BP-C **2/8…** – 2 x grid width, 8 connections	PSSu BP-C 1/8**C** – Cage clamp terminals PSSu BP-C 1/8**S** – Screw terminals

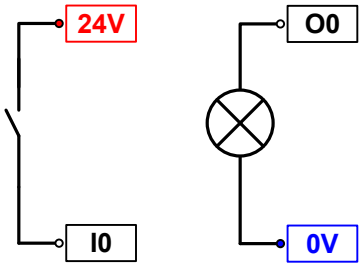
Shape	Explanation	Shape	Explanation
n.c.	not connected		Cable screening
24V	+24 V supply or output (supply from **internal** supply unit)	C	C-rail
T0	+24 V output or Test pulse output T0 (supply from **internal** supply unit)	C 24V	C-rail Recommended for +24 V supply
24V	+24 V supply (supply from **internal** supply unit)	C	C-rail Recommended for Cable screening
24V(MS)	+24 V supply for **Module Supply (MS)** (input from **external** supply unit)	xy	electrical signal
24V(PS)	+24 V supply for **Periphery Supply (PS)** (input from **external** supply unit)	I0	Input I0
24V(PS)	+24 V supply (external input for **Power Supply units**)	O0	Output O0
-15V	-15 V supply (output from **Power Supply units**)	O+	Output O+ dual-pole, positive-switching
0V	0 V supply (supply from **internal** supply unit)	P1	electrical potential P1
0V	0 V supply (supply from **internal** supply unit)		refabricated wire link for compact modules on the plug with 30 poles
0V(MS)	0 V supply for **Module Supply (MS)** (input from **external** supply unit)		single contacts internally not bridged implemented
0V(PS)	0 V supply for **Periphery Supply (PS)** (input from **external** supply unit)		several contacts internally doubly bridged implemented
0V(a)	0 V supply analogue, is **galvanically isolated** from periphery supply		several contacts internally quadruple bridged implemented
0V(c)	0 V supply counter, is **galvanically isolated** from periphery supply		

DIGITAL

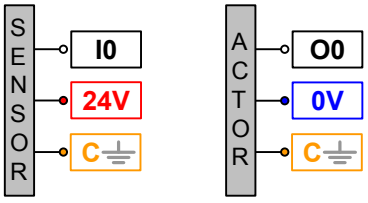
Connection with 1 Potential



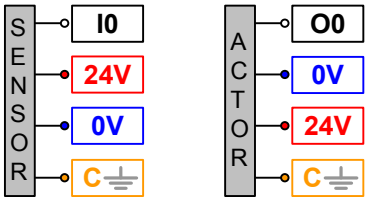
Connection with 2 Potentials



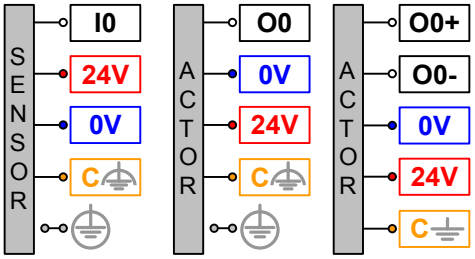
Connection with 3 Potentials



Connection with 4 Potentials



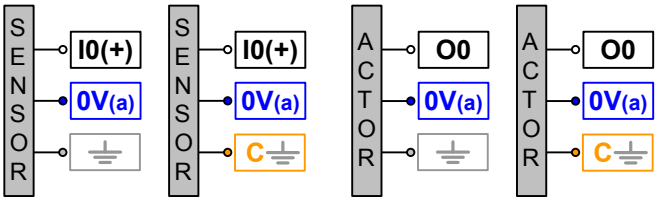
Connection with 5 Potentials



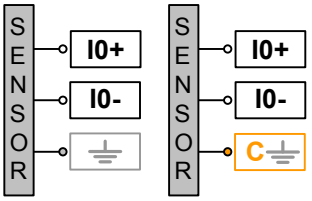
ANALOGUE

Connection with 1 and 2 Potentials
for analogue devices is possible,
but in the PSSu system are not recommended.

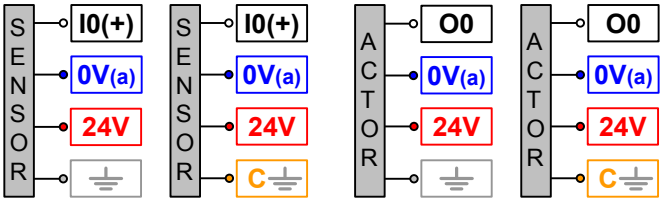
Connection with 3 Potentials
single-pole, referenced to earth



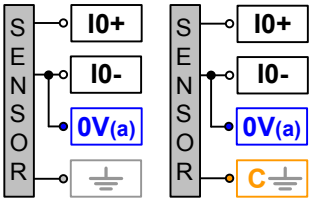
dual-pole, differential input, referenced to earth



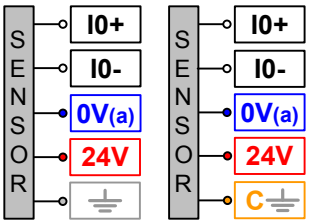
Connection with 4 Potentials
single-pole, referenced to earth, power supply



dual-pole, differential input



Connection with 5 Potentials
dual-pole, differential input, with power supply



Earthing, general

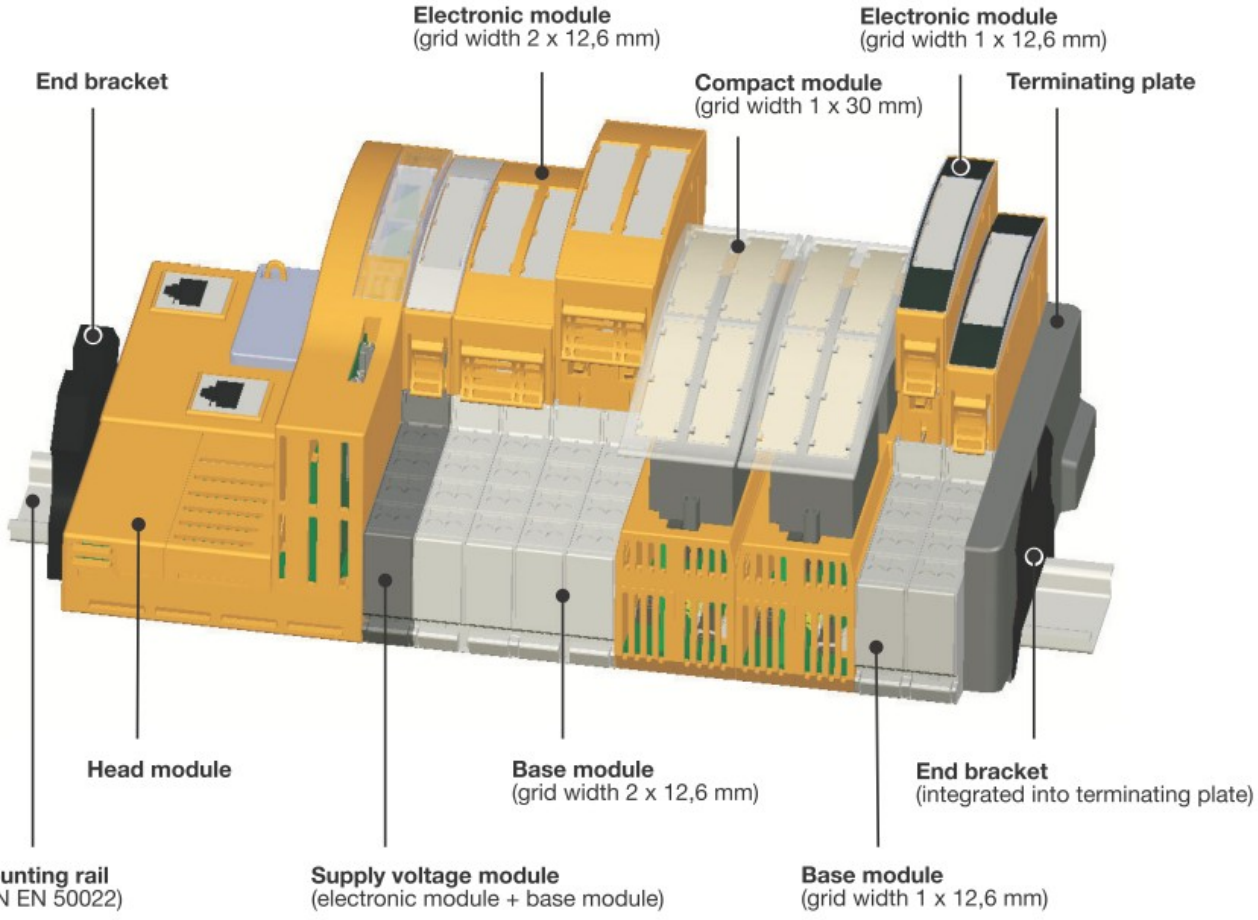
Funktional Earth FE

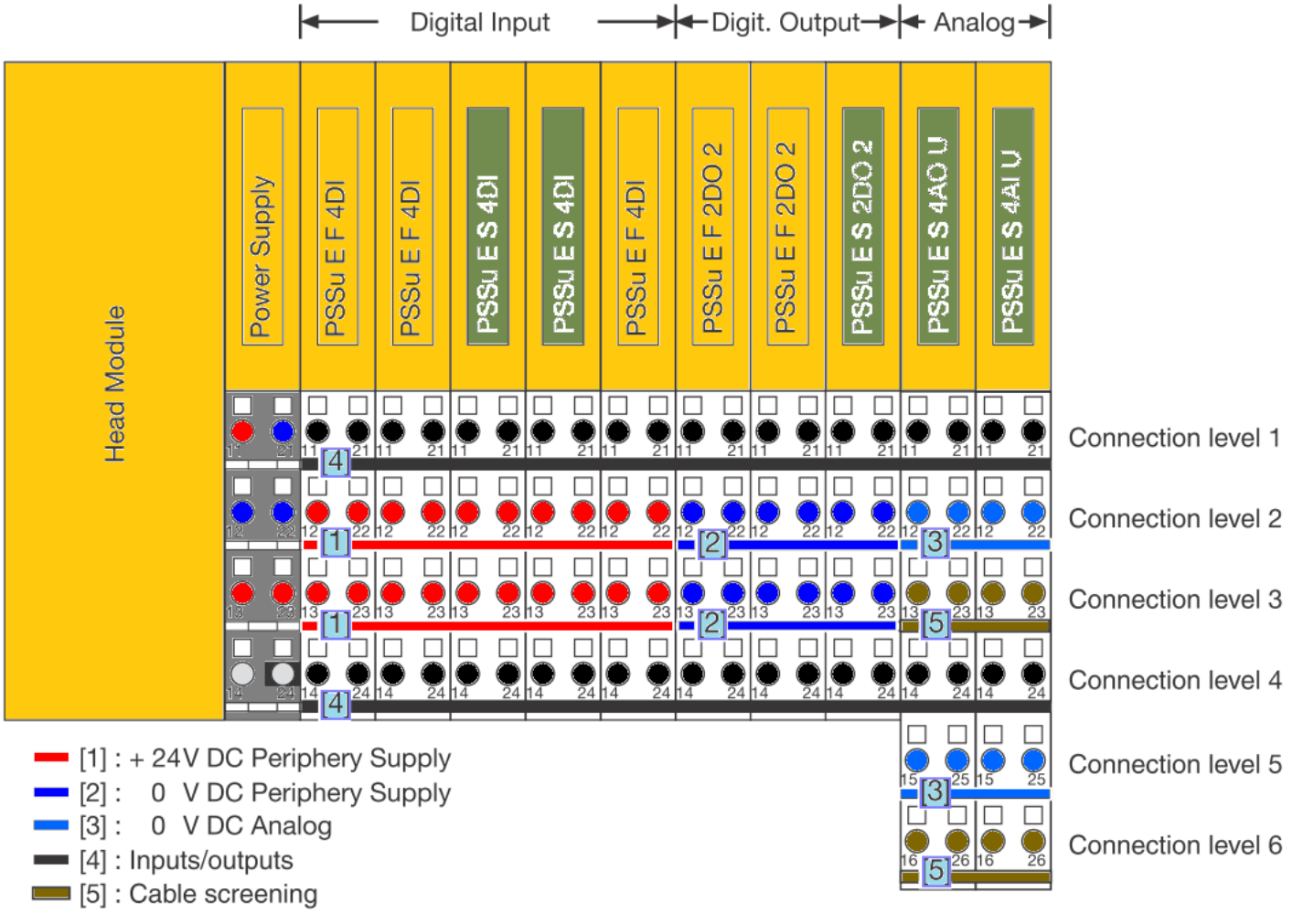
Protective Earth PE

Overview System

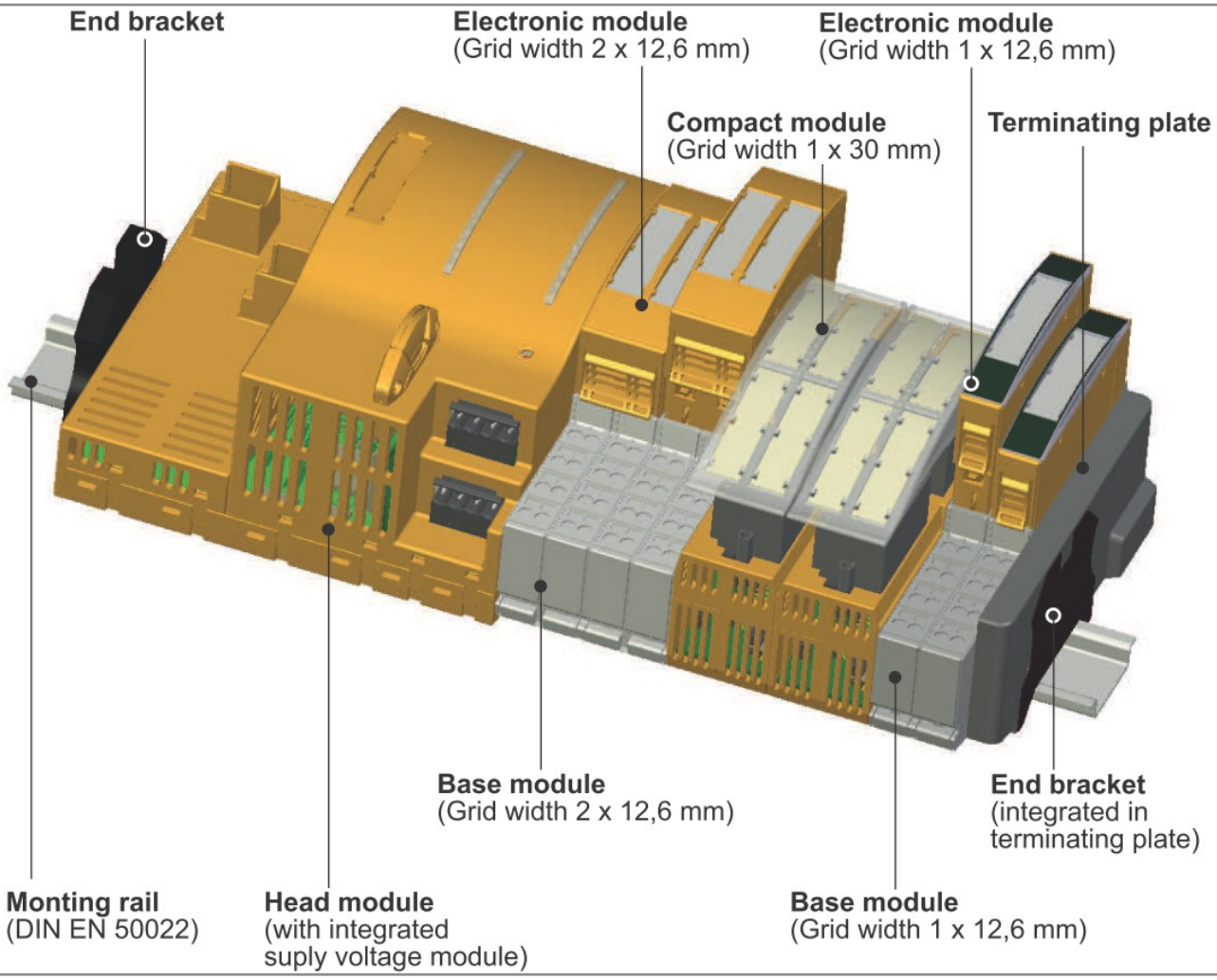
Installation and Accessories

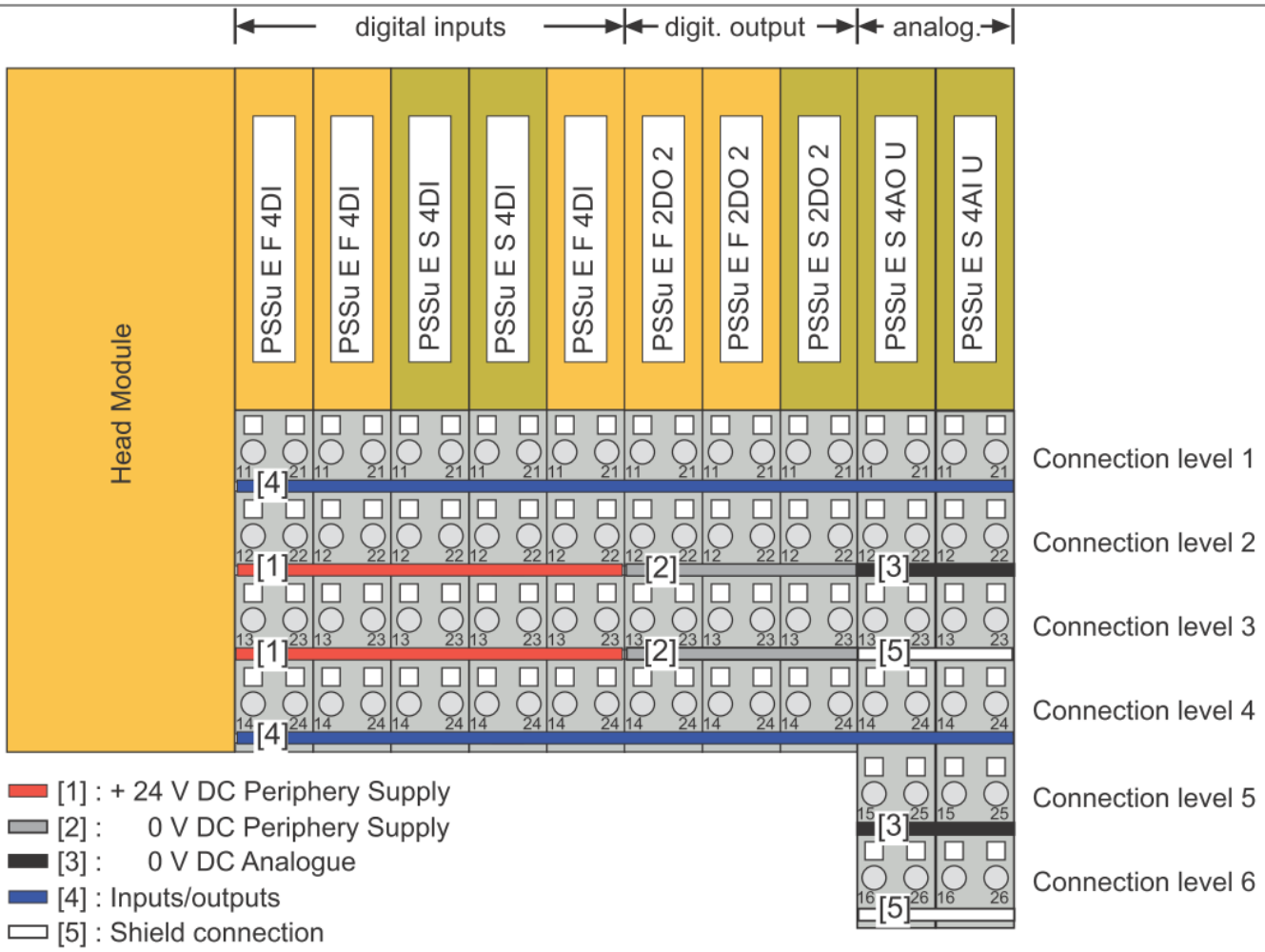
Please check the permissible use of the required module for the system at the top right!



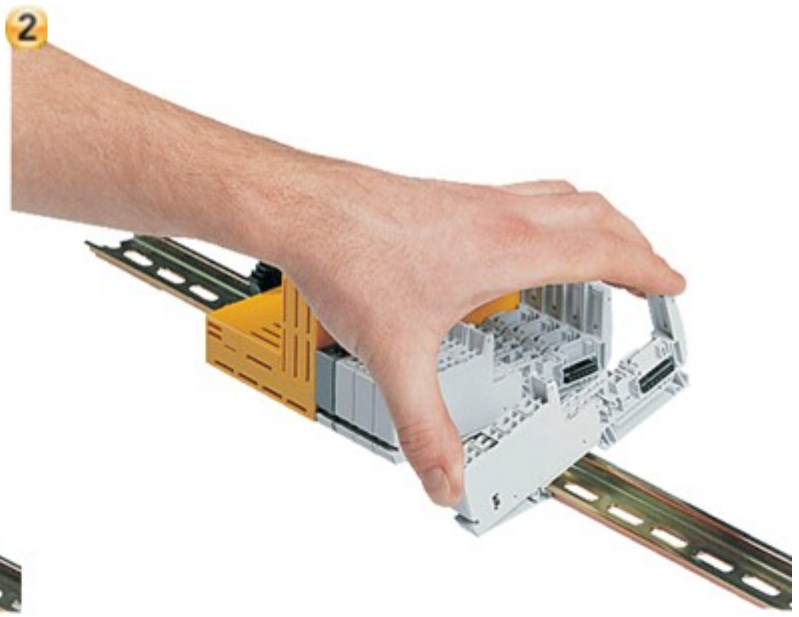


Please check the permissible use of the required module for the system at the top right!

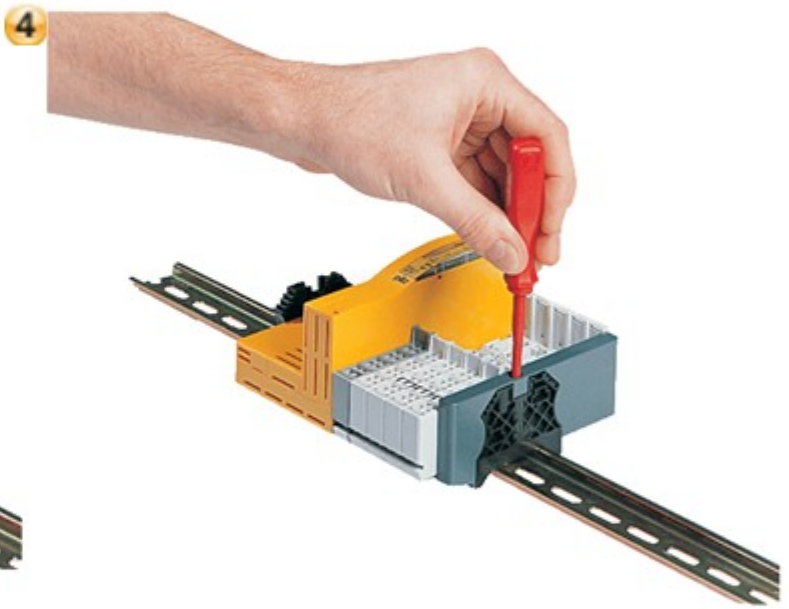





1


2


3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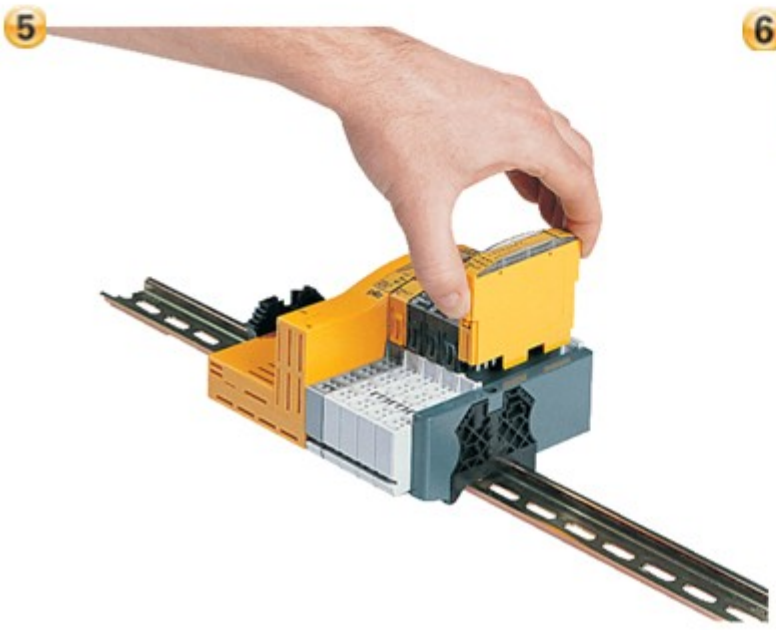
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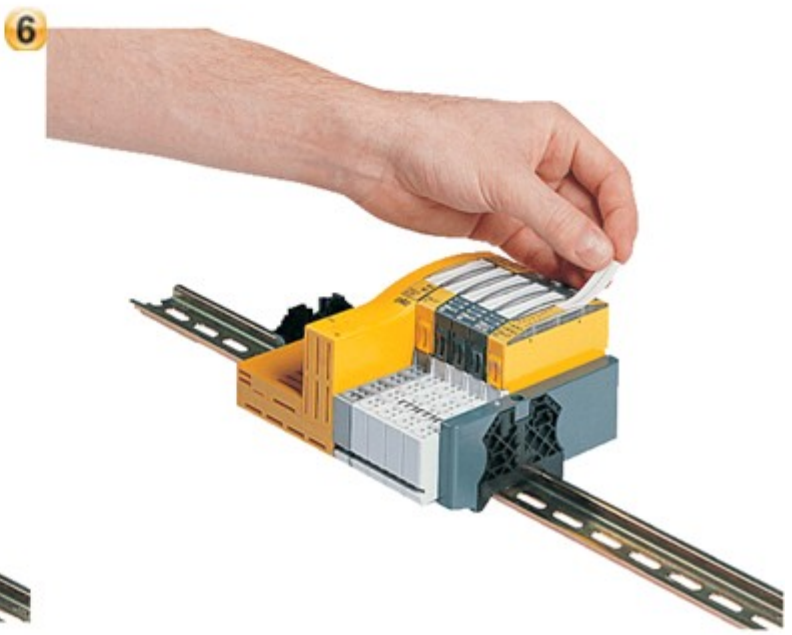

6

312963 PSSu A SH S [1]
Shielded terminal for base modules with Screw connection.
Scope of supply: 10 pieces

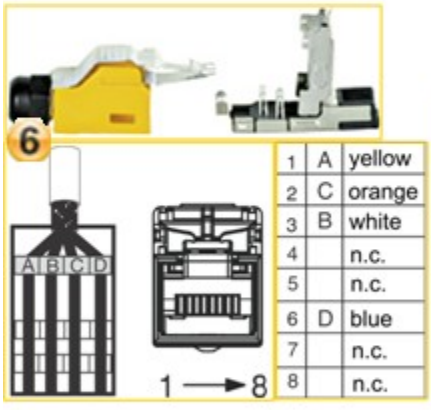
312964 PSSu A SH T [2]
Shielded terminal for base modules with Cage clamp connection.
Scope of supply: 10 pieces

312900 PSSu A ET [3]
End bracket for top-hat rail, standard, plastic version, black.
Scope of supply: 10 pieces

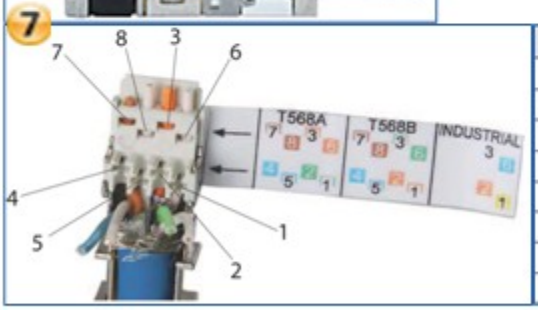
312901 PSSu A ETM [4]
End bracket for tophat rail, metal version, for high mechanical stress.
Scope of supply: 2 pieces

312949 PSSu A ET PE [5]
Earthing terminal for top hat rail, PE connection, Gr/Y.
Scope of supply: 10 pieces

Note: For the operation of the head module necessary end bracket and terminating plate are included in its scope of delivery.



1	A	yellow
2	C	orange
3	B	white
4		n.c.
5		n.c.
6	D	blue
7		n.c.
8		n.c.



380400 SafetyNET p Connector RJ45s [6]
Connector RJ45 straight IP20, 4-pin, CAT5e

380401 Ethernet RJ45 Connector [7]
Connector RJ45 straight IP20, 8-pin, CAT6a

PIN	T568A	T568B	SafetyNET p
1	white-green	white-orange	yellow
2	green	orange	orange
3	white-orange	white-green	white
4	blue	blue	-
5	white-blue	white-blue	-
6	orange	green	blue
7	white-brown	white-brown	-
8	brown	brown	-

311040 PSS SB SUB-D4 [8]
SafetyBUS p connector

311040 PSS SB SUB-D4 DIAG [9]
SafetyBUS p connector with diagnostic connector

311053 PSS SB SUB-D-F01 [10]
SafetyBUS p FO transceiver

Coding elements [1]

312903 PSSu A CE "A" Yellow
312904 PSSu A CE "B" Yellow
… .C.D.E.F.G.H.I.J.K.L.M.N.O.P. …
312919 PSSu A CE "Q" Yellow
312920 PSSu A CE "R" Yellow

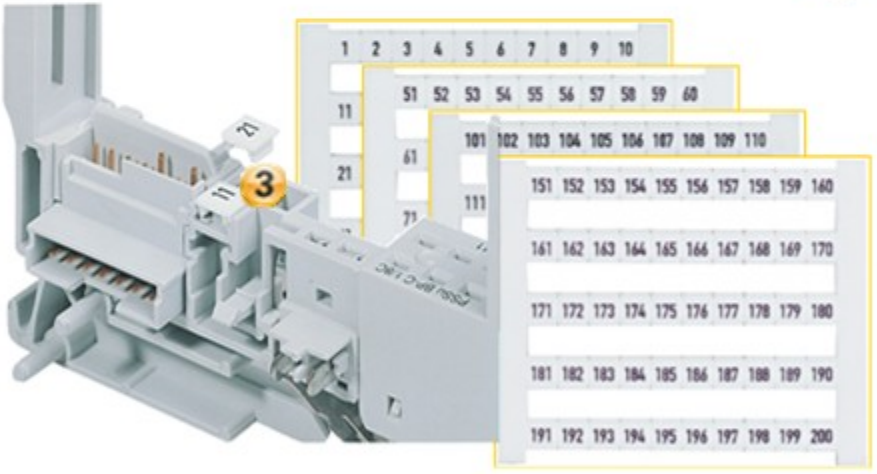
312921 PSSu A CE "A" Light-grey

312923 PSSu A CE "A" Grey
312924 PSSu A CE "B" Grey
… .C.D.E.F.G.H.I.J.K.L.M.N.O.P. …
312939 PSSu A CE "Q" Grey
312940 PSSu A CE "R" Grey

Labelling [2] [3]

312958 PSSu A LA0
Labelling strips with separator, for laser printer, for labelling the terminals on the base modules (10x A4 sheets, each with 108 tags, tag size 5x40 mm)

312967 PSSu A LA0.1
Labelling strips without separator, for Laser printer, for labelling the terminals on the base modules (10x A4 sheets, each with 108 tags, tag size 5x40 mm)

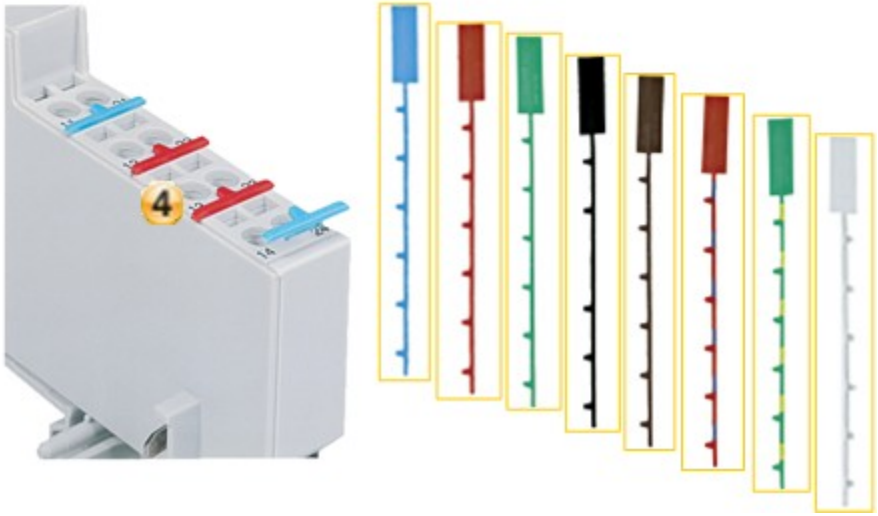


312959 PSSu A LA1 Tags for labelling the terminals on the base modules (Dekafix, labelled 1..50, 10 x 50 tags)

312960 PSSu A LA2 Tags for labelling the terminals on the base modules (Dekafix, labelled 51..100, 10 x 50 tags)

312961 PSSu A LA3 Tags for labelling the terminals on the base modules (Dekafix, labelled 101..150, 10 x 50 tags)

312962 PSSu A LA4 Tags for labelling the terminals on the base modules (Dekafix, labelled 151..200, 10 x 50 tags)



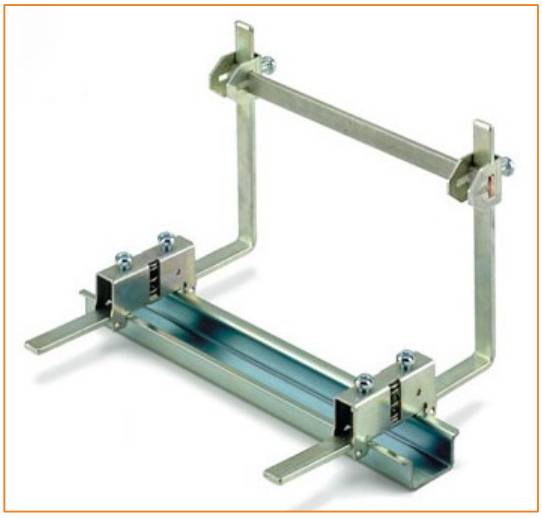
Markers [4]

312950 PSSu A ME0 Markers for base module supplies, 10 x 6 marking strips, blue
312951 PSSu A ME1 Markers for base module supplies, 10 x 6 marking strips, red
312952 PSSu A ME2 Markers for base module supplies, 10 x 6 marking strips, green
312953 PSSu A ME3 Markers for base module supplies, 10 x 6 marking strips, black
312954 PSSu A ME4 Markers for base module supplies, 10 x 6 marking strips, brown
312955 PSSu A ME5 Markers for base module supplies, 10 x 6 marking strips, red/blue
312956 PSSu A ME6 Markers for base module supplies, 10 x 6 marking strips, green/yellow
312957 PSSu A ME7 Markers for base module supplies, 10 x 6 marking strips, white

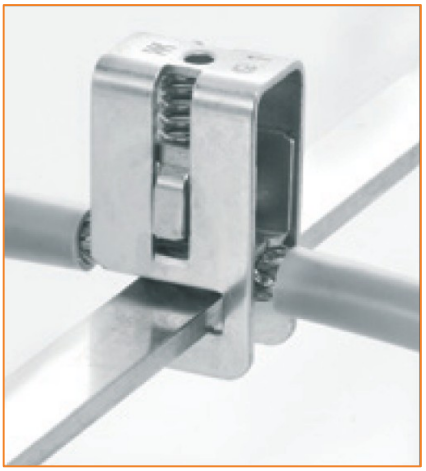
Please read the user manual about EMC-conform wiring of your device first!

Shield clamping saddles for shielding and earthing with Klippon Connect System

Railholder system ‚WSH 18 MT'



Clamping bracket ‚KLBUE' and ‚KLBUE CO' for mounting on Railholder system



Clamping bracket ‚KLBUE SC' for direct mounting on metal plate

FE .. Functional Earth
CS .. Cable Screening

IP20
Heads
Head Modules

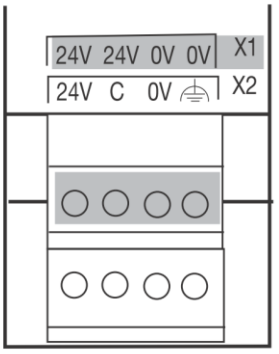
Link module: »PSSu **WR** S IDN«

Connector description	Terminal configuration
5-pin Combicon plug-in connector X1	1: +24 V infeed for periphery supply 2: 0 V infeed for periphery supply 3: n.c. 4: +24 V infeed for module supply 5: 0 V infeed for module supply

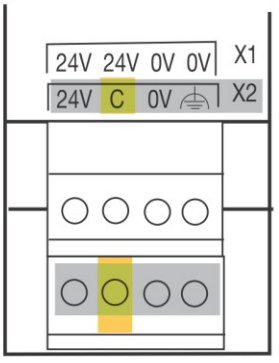
Head modules of PSSu PLC/PSSu multi control system: »PSSu **H** [PLC1] [FS] [Fieldbus] [ETH] SN [SD]«

Installation Manual: 21262

Module supply	Terminal configuration		X1
4-pin female connector	24V	+24 V infeed for module supply	
	0V	0 V infeed for module supply	



Periphery supply	Terminal configuration		X2
4-pin female connector	24V:	+24 V infeed for periphery supply	
	C	C-rail supply	
	0V	0 V infeed for periphery supply	
		Functional earth	



Note: The **C-rail connector** of Head modules has been removed from hardware version HW003. Please use Base modules.

Head modules: **USB** connection of Head modules of decentralised system PSSu I/O

USB	Layout
Mini-B USB connector	1: n.c. 2: D- USB Data – 3: D+ USB Data + 4: n.c. 5: GND Ground

n.c. .. not connected

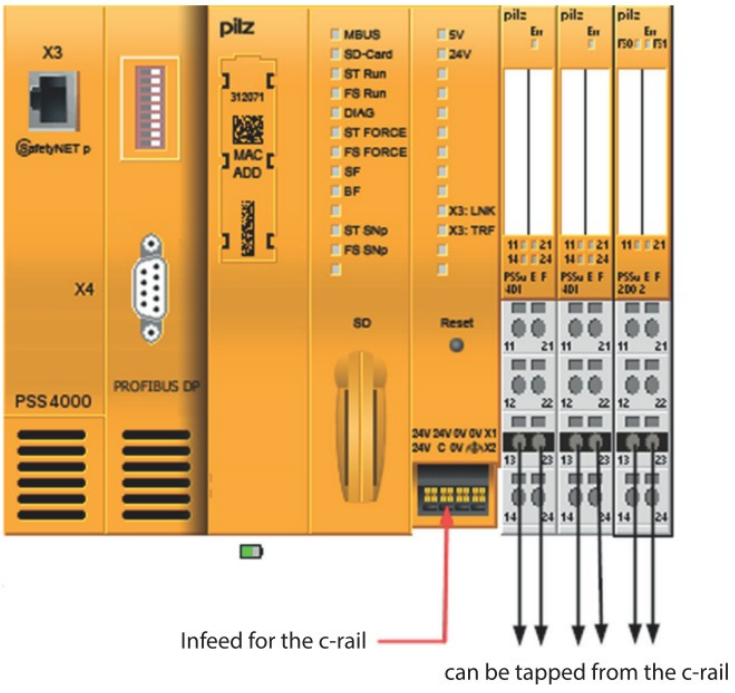
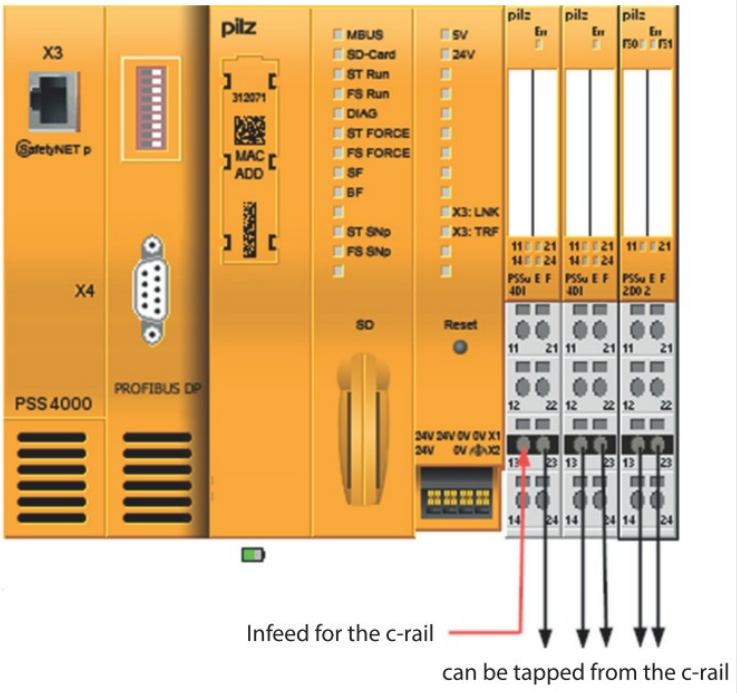
Please note:
The connection for the C-rail at terminal X2 is no longer available with this head module.
You have to rewire the C-rail feed when:

- You used a head module in you application in which the supply for the C-rail was provided.

Suggested action:

- Rewire the C-rail of terminal "C" at your old head module to the first free connection for the C-rail at a base module. The connection for the C-rail is marked with a black bar.

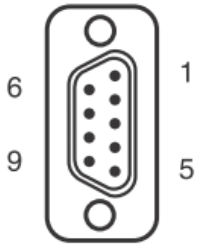
Note:
The C-rail connector of **compact modules** has been also removed.
The internal transmission of C-rail signal through these modules is no longer possible.

Old	New
	

Item number	Product name	Implementation from serial number
312060	PSSu H m F DP ETH SD	"C"-contact removed from 100187
312065	PSSu H m F DP SN SD	"C"-contact removed from 100546
312066	PSSu H m F DPsafe SN SD	"C"-contact removed from first series
312070	PSSu H PLC1 FS SN SD	"C"-designation removed from 105576 "C"-contact to be removed later
312071	PSSu H PLC1 FS DP SN SD	"C"-contact removed from 103262
312085	PSSu H FS SN SD	"C"-designation removed from 103504 "C" contact to be removed later
314070	PSSu H PLC1 FS SN SD-T	"C"-designation removed from 100842 "C"-contact to be removed later
314085	PSSu H FS SN SD-T	"C"-designation removed from 100147 "C"-contact to be removed later
315070	PSSu H PLC1 FS SN SD-R	"C"-contact removed from 100091
315085	PSSu H FS SN SD-R	"C"-contact removed from 100165

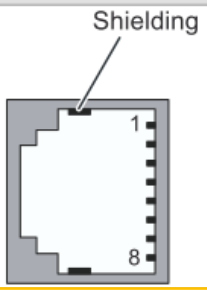
Head modules of decentralised system PSSu I/O: »PSSu H **SB**«, »PSSu H **SB** [Fieldbus]«

SafetyBUS p	Layout
Male 9-pin D-SUB connector	1: n.c. 2: CAN_L (brown) 3: CAN_GND (white) 4: n.c. 5: CAN_SHLD 6: n.c. 7: CAN_H (green) 8: Supply voltage for fibre-optic couplers from Pilz 9: n.c.



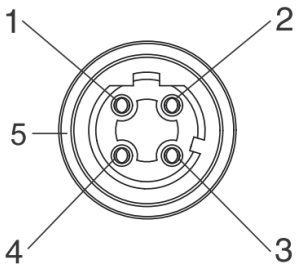
Head modules of PSSu PLC/PSSu multi control system: »PSSu H [PLC1] [FS] [Fieldbus] **SN** [SD]«

SafetyNET p	Assignment
RJ45 female connector	1: TD+ (yellow) 2: TD- (orange) 3: RD+ (white) 4: n.c. 5: n.c. 6: RD- (blue) 7: n.c. 8: n.c.



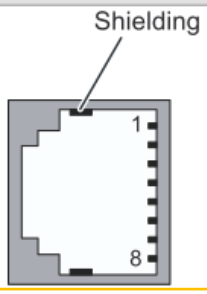
Head modules of PSSu PLC control system: »PSSu H [PLC1] FS **SN** SD **M12-R**«

SafetyNET p	Assignment
4-pin M12 female connector D-coded	1: TD+ 2: RD+ 3: TD- 4: RD- 5: Connection to functional earth on the connector housing

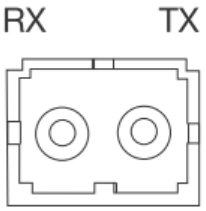


n.c. .. not connected

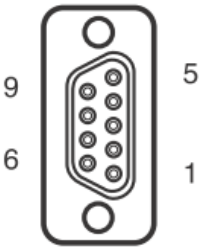
Head modules of decentralised system PSSu I/O: »PSSu H **F PN**«

PROFIsafe	**Layout**	
RJ45 connector in accordance with the guidelines of the PROFINET User Group (PNO)	1: TD Transmit Data + (yellow) 2: TD_N Transmit Data – (orange) 3: RD Receive Data + (white) 4: GND Ground 5: GND Ground 6: RD_N Receive Data – (blue) 7: GND Ground 8: GND Ground	

Head modules of decentralised system PSSu I/O: »PSSu H **F PN o**«

X1, X2		
Female SC-RJ-connector in accordance with the guidelines of the PROFINET User Group (PNO)	100Base-FX POF-FO	

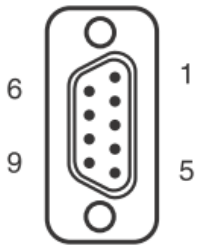
Head modules of PSSu PLC/PSSu multi control system: »PSSu H [m] [F] **DPsafe** [SN] [SD]«

PROFIBUS DP	**Layout**	
Female 9-pin D-SUB connector conforms to the guidelines of the PROFIBUS User Group (PNO)	1: n.c. 2: n.c. 3: RxD/TxD-P (B-line) 4: CNTR-P (RTS) 5: DGND (GND ext.) 6: VP (+5 V ext.) 7: n.c. 8: RxD/TxD-N (A-line) 9: n.c.	

n.c. .. not connected

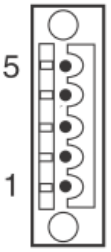
Head modules of decentralised system PSSu I/O: »PSSu H **CAN**«, »PSSu H SB **CAN**«

CANopen	Layout
Male 9-pin D-SUB connector	1: n.c. 2: CAN_L 3: CAN_GND 4: n.c. 5: CAN_SHLD 6: GND (1) 7: CAN_H 8: n.c. 9: n.c.



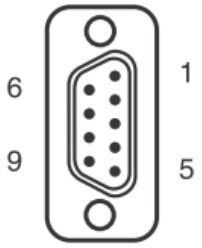
Head modules of decentralised system PSSu I/O: »PSSu H **DN**«, »PSSu H SB **DN**«

DeviceNet	Layout
5-pin Combicon plug-in connector	1: V- 2: CAN_Low 3: Shield 4: CAN_High 5: V+

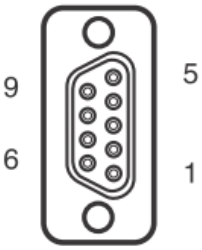


Head modules of decentralised system PSSu I/O: »PSSu H **IBSe**«, »PSSu H SB **IBSe**«

INTERBUS IBS IN	Layout
Male 9-pin D-SUB connector conforms to the guidelines of the INTERBUS User Group	1: DO 2: DI 3: GND 4: GND 5: n.c. 6: DO- 7: DI- 8: + 5 V 9: n.c.



INTERBUS IBS OUT	Layout
Female 9-pin D-SUB connector conforms to the guidelines of the INTERBUS User Group	1: DO 2: DI 3: GND 4: GND 5: + 5 V 6: DO- 7: DI- 8: + 5 V 9: n.c.



Head modules of decentralised system PSSu I/O: »PSSu H **IBSo**«, »PSSu H SB **IBSo**«

INTERBUS IBS IN	Layout
F-SMA connector Fibre-optic cable	IN: Receive data OUT: Send data

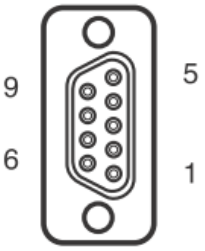
INTERBUS IBS OUT	Layout
F-SMA connector Fibre-optic cable	IN: Receive data OUT: Send data

n.c. .. not connected

Head modules of decentralised system PSSu I/O: »PSSu H **DP**«, »PSSu H SB **DP**«

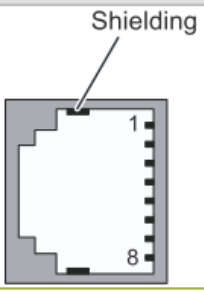
Head modules of PSSu PLC/PSSu multi control system: »PSSu H [PLC1] [FS] **DP** [SN] [SD]«

PROFIBUS DP	Layout
Female 9-pin D-SUB connector conforms to the guidelines of the PROFIBUS User Group (PNO)	1: n.c. 2: n.c. 3: RxD/TxD-P (B-line) 4: CNTR-P (RTS) 5: DGND (GND ext.) 6: VP (+5 V ext.) 7: n.c. 8: RxD/TxD-N (A-line) 9: n.c.



Head modules of decentralised system PSSu I/O: »PSSu H **S PN**«

PROFINET IO	Layout
RJ45 connector in accordance with the guidelines of the PROFINET User Group (PNO)	1: TD Transmit Data + (yellow) 2: TD_N Transmit Data – (orange) 3: RD Receive Data + (white) 4: GND Ground 5: GND Ground 6: RD_N Receive Data – (blue) 7: GND Ground 8: GND Ground



n.c. .. not connected

PILZ

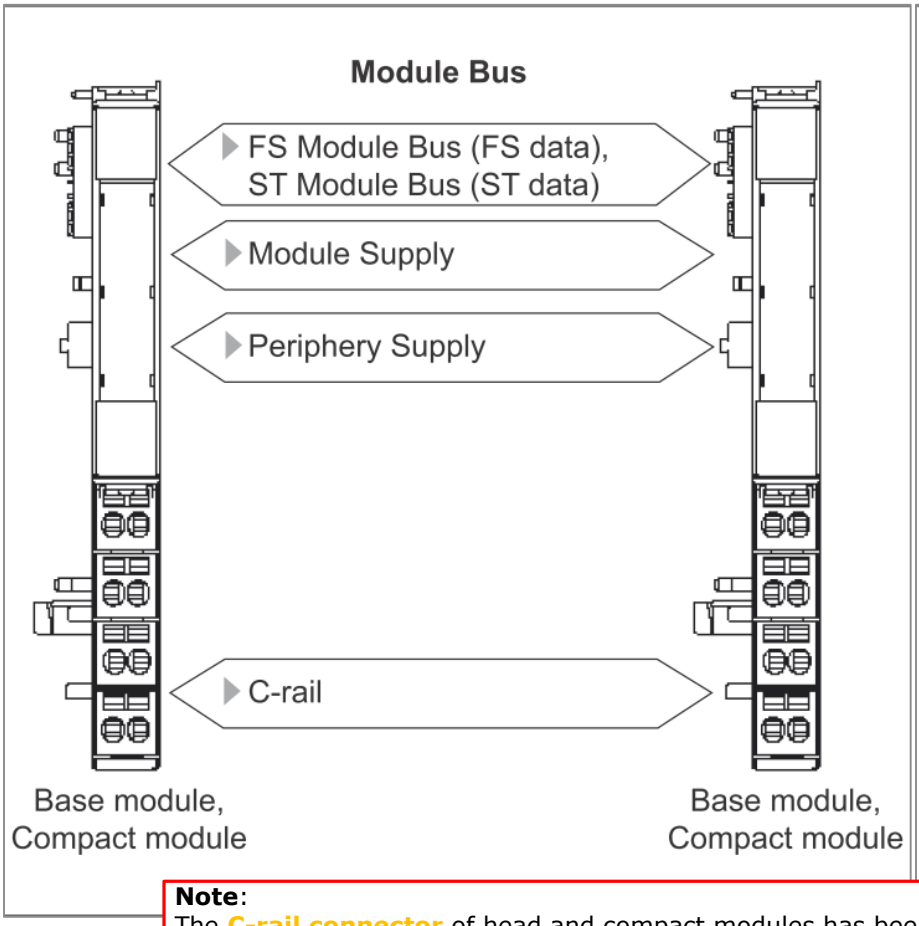
THE SPIRIT OF SAFETY

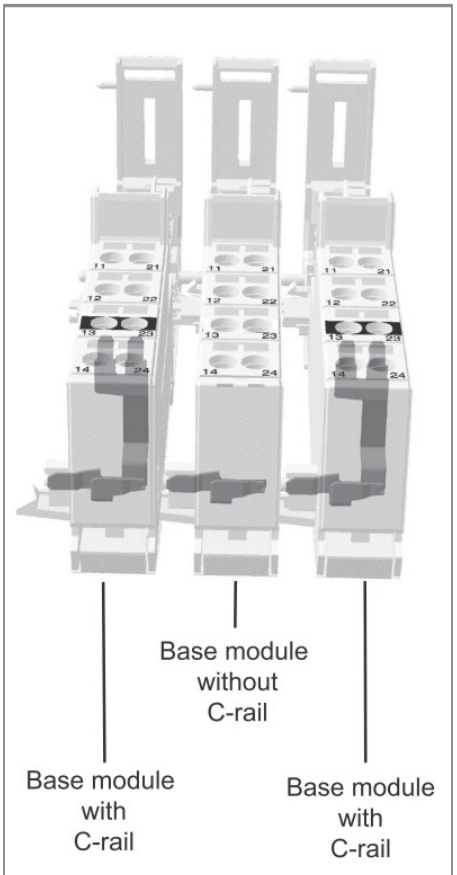
IP20

E-Series

Electronic Modules

Overview Module bus and C-rail





Note:
The **C-rail connector** of head and compact modules has been removed.
The internal transmission of C-rail signal through compact modules is no longer possible.

Connections on base modules

Connections on the base modules

The connections on the base modules are divided into connection levels and connection columns. The connections have a two-digit number.

- The first digit denotes a base module's connection column (e.g.: connection **2**3 is in the second column).
- The second digit denotes a base module's connection level (e.g.: connection 2**3** is in the third level).

The function of the base module connections depends on the electronic module.

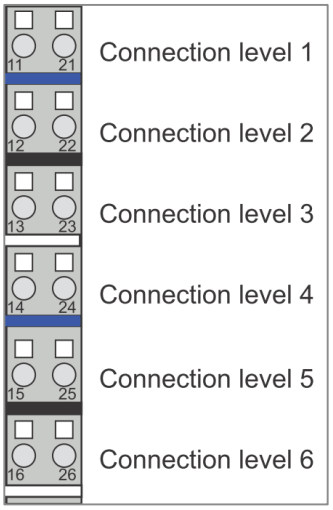
On input/output modules, the connection levels are typically arranged as follows:

- Connection level 1 and 4
  Input and output connections
- Connection levels 2 and 3
  Connections for the common supplies (periphery supply, analogue inputs/outputs or screening)

Many input/output modules may have two more connection levels:

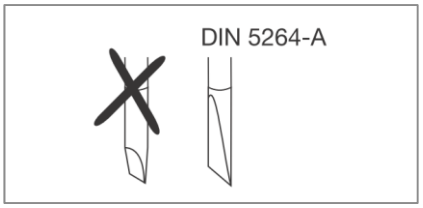
- Connection level 5 and 6
  Connections for the common supplies (periphery supply, analogue inputs/outputs or screening)

Input/output modules can be installed in any order. However, for the connection diagram to be consistent it makes sense to arrange input/output modules of the same type into groups and not have them interrupted by compact modules (see example).

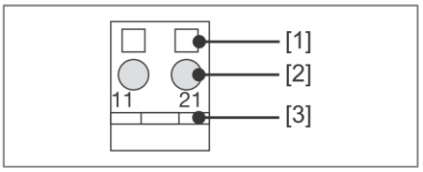


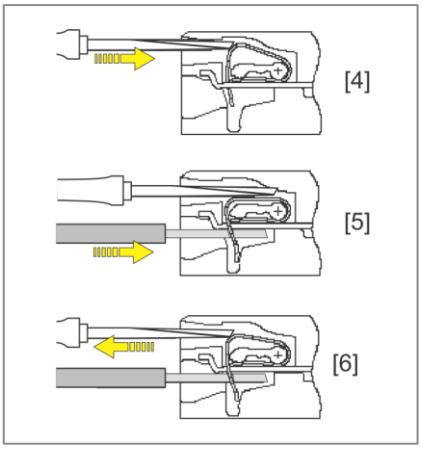
Wiring base modules

- Use a flat blade screwdriver (DIN 5264-A)!



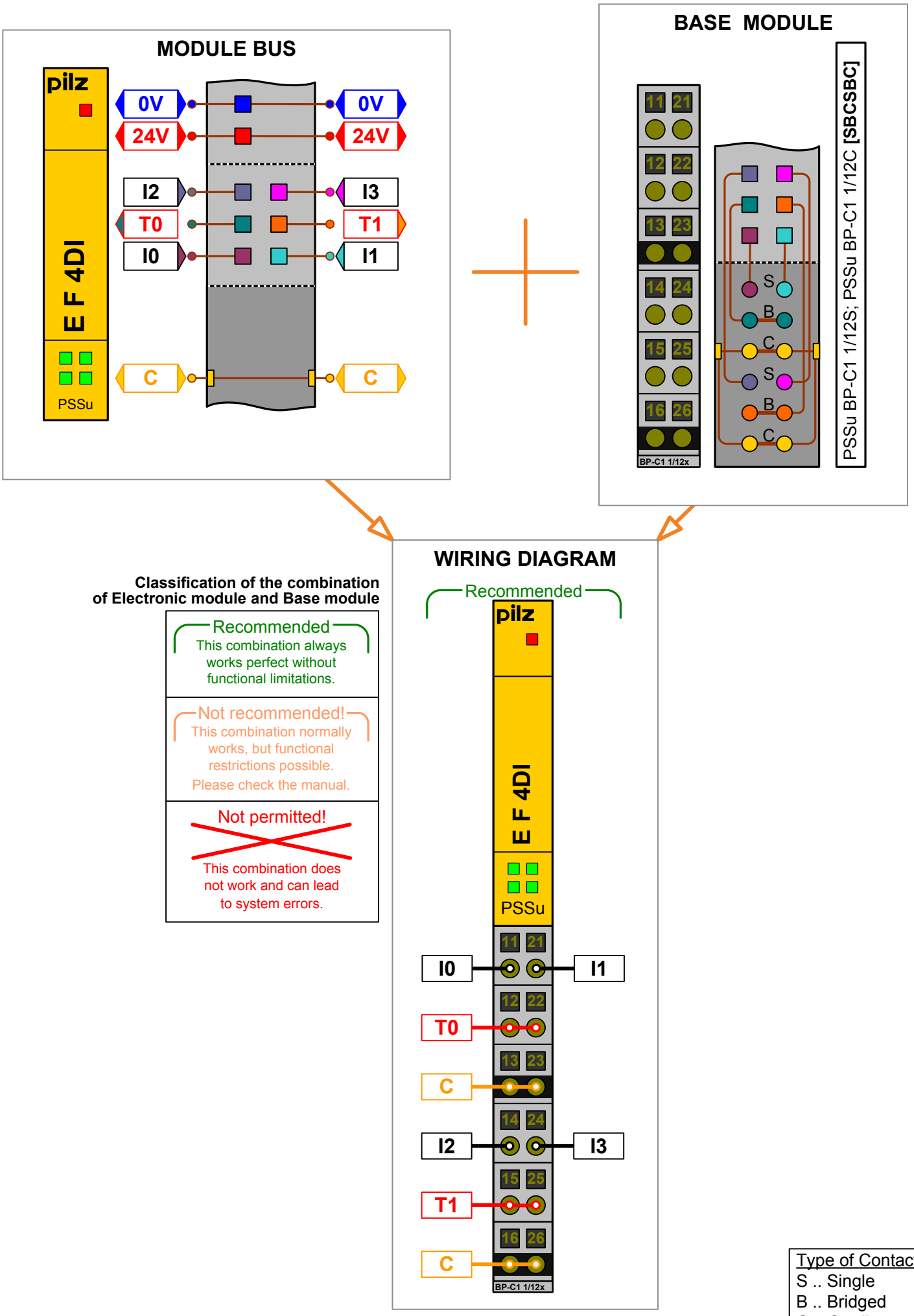
- Strip the wire back 8 mm.
- If necessary, label the connection level with a colour marker [3].
- Base module with screw terminals:
  - Use a screwdriver to loosen the screw on the screw terminal [1]
  - Insert the stripped cable into the round fixing hole [2], as far as it will go.
  - Tighten up the screw on the screw terminal.
  - Check that the cable is firmly seated.
- Base module with cage clamp terminals:
  - Insert the screwdriver [4] into the square hole [1].
  - Insert the stripped cable into the round fixing hole [2], as far as it will go [5].
  - Pull out the screwdriver [6].
  - Check that the cable is firmly seated.





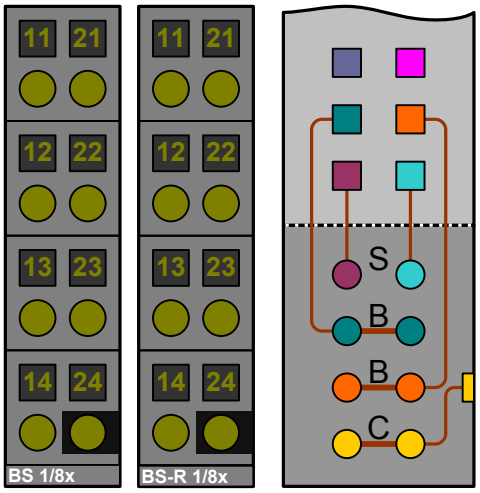
Cable requirements

- The minimum cable cross section for field connection terminals on the base modules is 0.14 mm^2 (AWG26)
- The maximum cable cross section for field connection terminals is:
  - Digital inputs: 1.5 mm^2 (AWG16)
  - Digital outputs: 2.0 mm^2 (AWG14)
  - Inputs/outputs on the counter modules: 1.5 mm^2 (AWG16)
  - Analogue inputs/outputs: 1.5 mm^2 (AWG16)
  - Communication cables: 1.5 mm^2 (AWG16)
  - Test pulse outputs: 1.5 mm^2 (AWG16)
  - Power supply: 2.5 mm^2 (AWG12)
  - Functional earth: 2.5 mm^2 (AWG12)
- On base modules with screw terminals:
  - If you use a multi-strand cable to connect the I/Os, it is recommended that you use ferrules conforming to Parts 1 and 2 of DIN 46228, 0.14 ... 1.5 mm^2, Form A or C, although this is not essential. To crimp the ferrules you can use crimp pliers (crimp form A or C) conforming to EN 60947-1, such as the PZ 1.5 or PZ 6.5 from Weidmüller, for example.
  - Maximum torque setting: 0.8 Nm
- Use copper wiring.


MODULE BUS
pilz
E F 4DI
PSSu
0V
24V
I2
T0
I0
C
0V
24V
I3
T1
I1
C
BASE MODULE
11 21
12 22
13 23
14 24
15 25
16 26
BP-C1 1/12x
S
B
C
S
B
C
PSSu BP-C1 1/12S; PSSu BP-C1 1/12C [SBCSBC]
Classification of the combination of Electronic module and Base module
Recommended
This combination always works perfect without functional limitations.
Not recommended!
This combination normally works, but functional restrictions possible.
Please check the manual.
Not permitted!
This combination does not work and can lead to system errors.
WIRING DIAGRAM
Recommended
pilz
E F 4DI
PSSu
I0
I1
T0
C
I2
I3
T1
C
BP-C1 1/12x
Type of Contacts
S .. Single
B .. Bridged
C .. C-rail

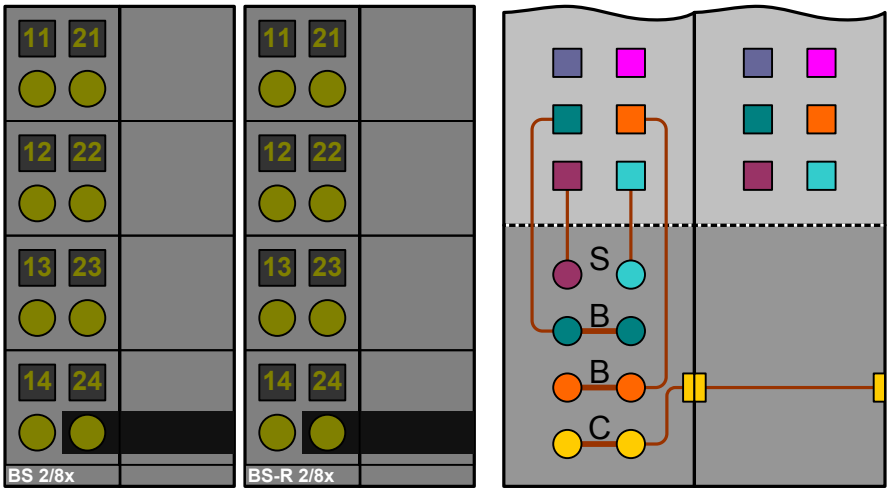
PSSu BS 1/8S; PSSu BS 1/8C **[SBBC]**

PSSu BS-R 1/8S; PSSu BS-R 1/8C **[SBBC]**

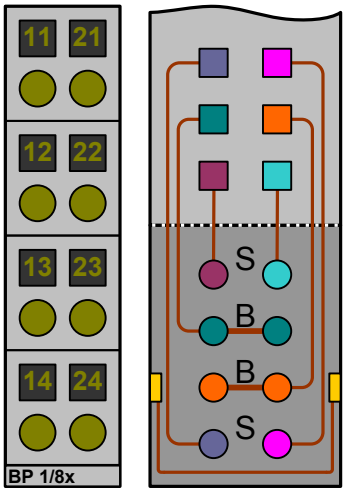


PSSu BS 2/8S; PSSu BS 2/8C **[SBBC]**

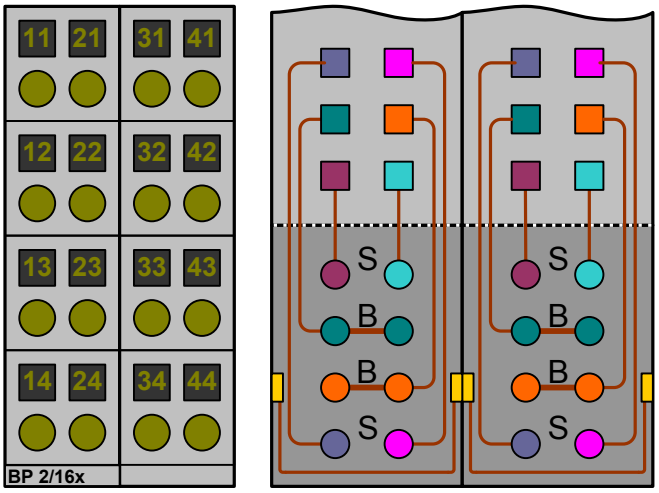
PSSu BS-R 2/8S; PSSu BS-R 2/8C **[SBBC]**



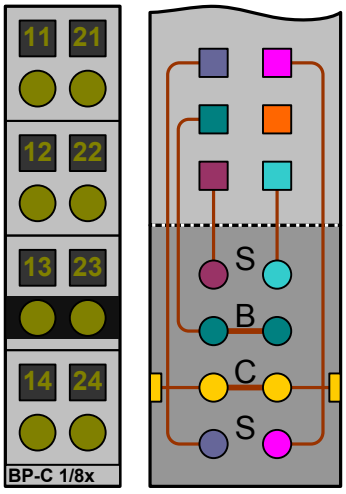
PSSu BP 1/8S; PSSu BP 1/8C **[SBBS]**



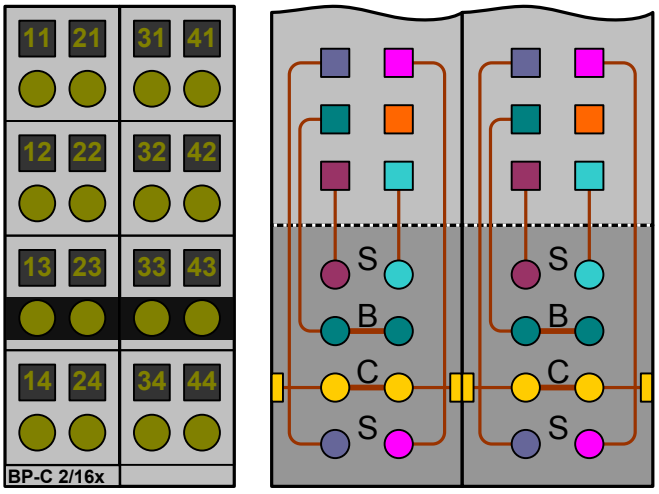
PSSu BP 2/16S; PSSu BP 2/16C **[SBBS]**



PSSu BP-C 1/8S; PSSu BP-C 1/8C **[SBCS]**

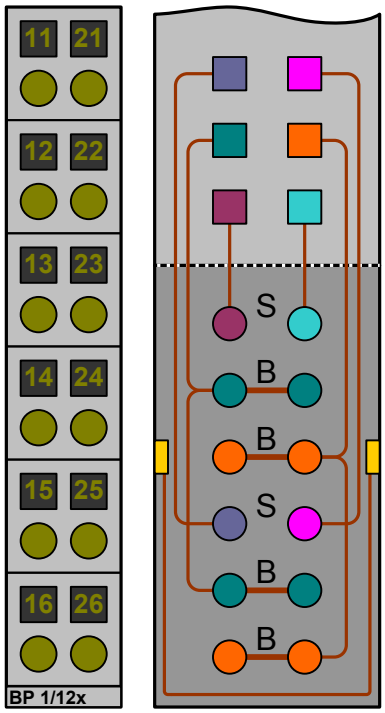


PSSu BP-C 2/16S; PSSu BP-C 2/16C **[SBCS]**



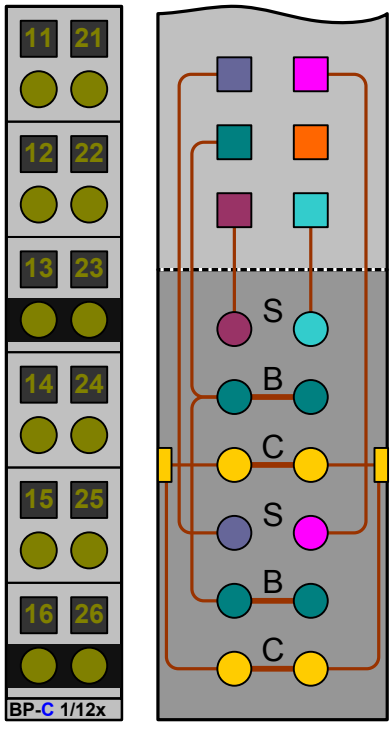
Type of Contacts
S .. Single
B .. Bridged
C .. C-rail

PSSu BP 1/12S; PSSu BP 1/12C **[SBBSBB]**



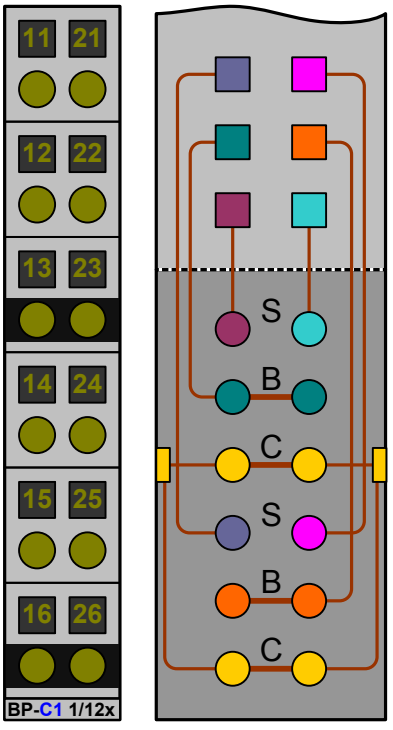
PSSu BP-C 1/12S; PSSu BP-C 1/12C **[SBCSBC]**

Internally bridged > Only 6 signals!



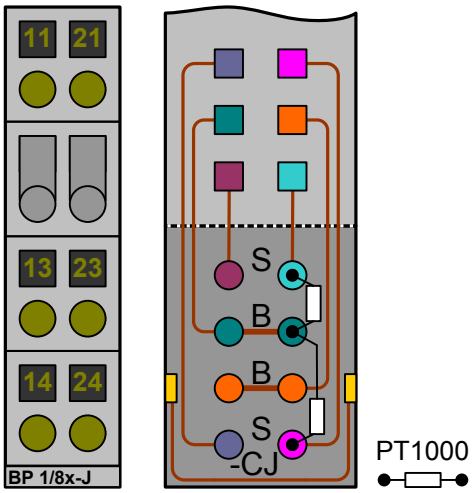
PSSu BP-C1 1/12S; PSSu BP-C1 1/12C **[SBCSBC]**

All internal 7 signals at the terminals available!

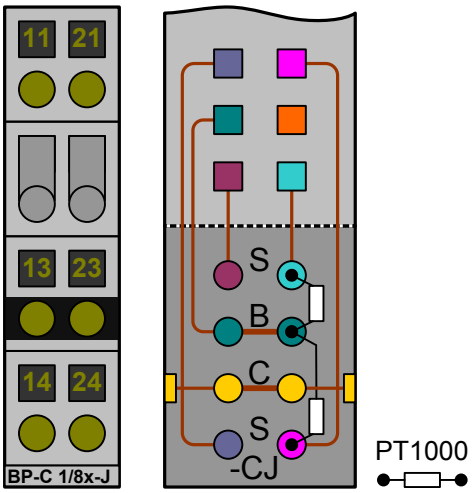


Type of Contacts
S .. Single
B .. Bridged
C .. C-rail

PSSu BP 1/8S-J; PSSu BP 1/8C-J **[SBBS-CJ]**

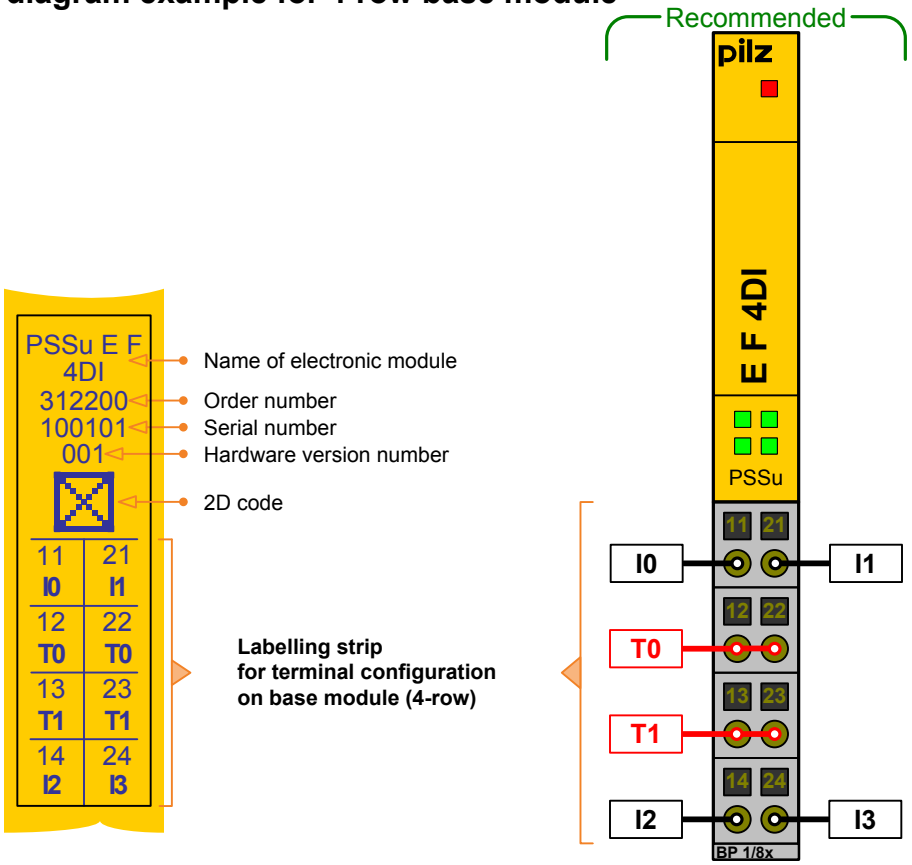


PSSu BP-C 1/8S-J; PSSu BP-C 1/8C-J **[SBCS-CJ]**

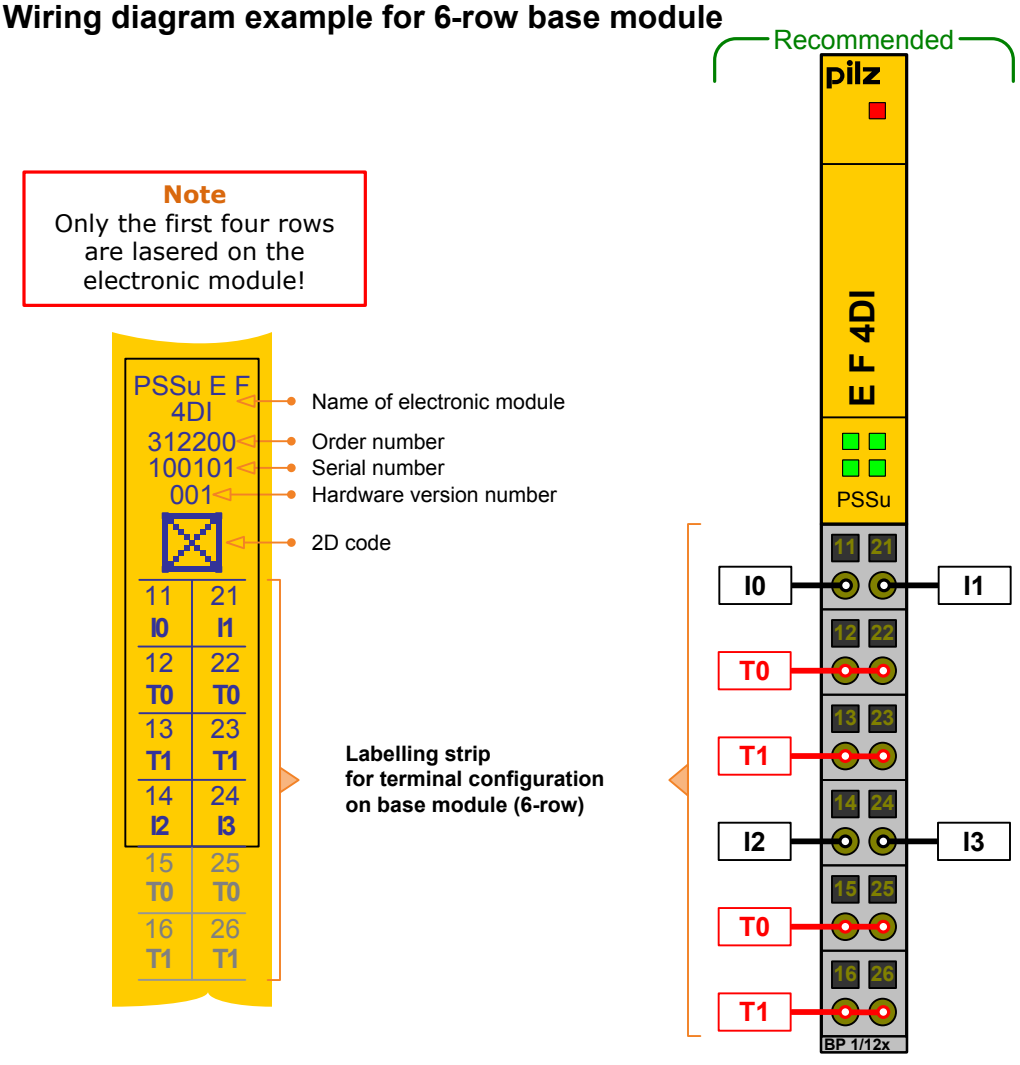


Type of Contacts
S .. Single
B .. Bridged
C .. C-rail
CJ .. Cold Junction

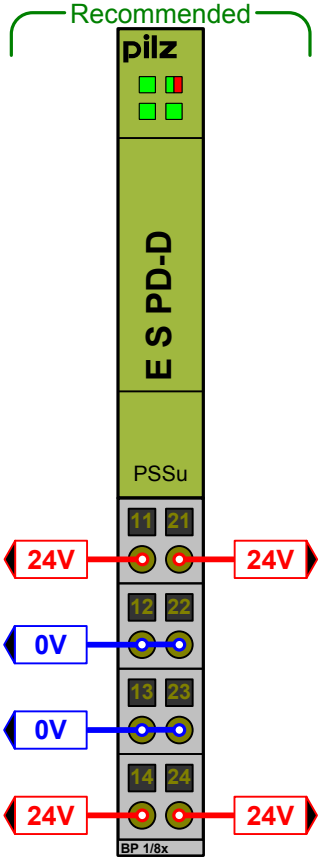
Wiring diagram example for 4-row base module



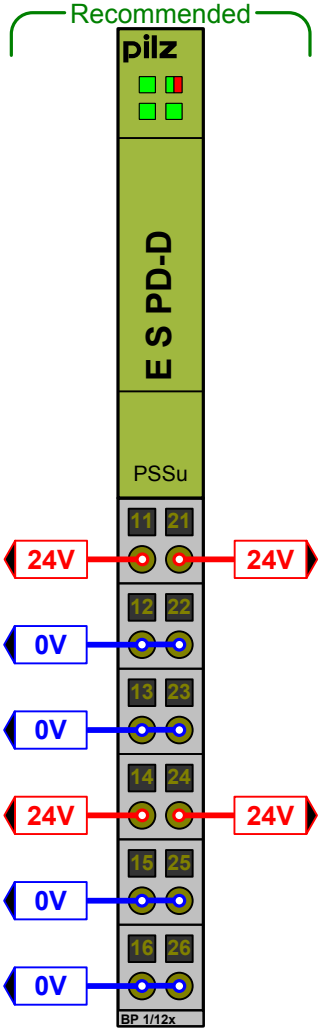
Wiring diagram example for 6-row base module



Recommended



Recommended



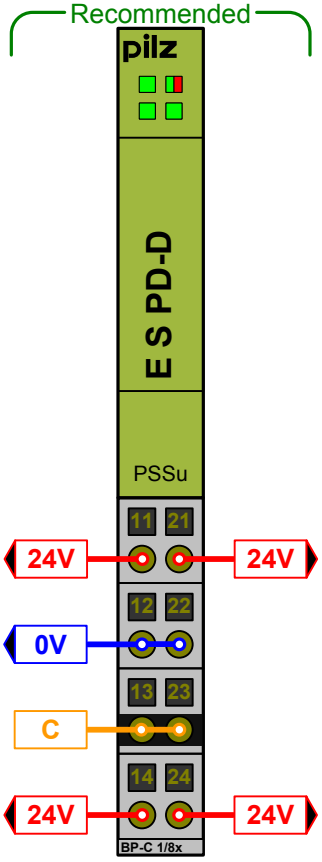
Standard electronic module

Module's device code: 000Ah

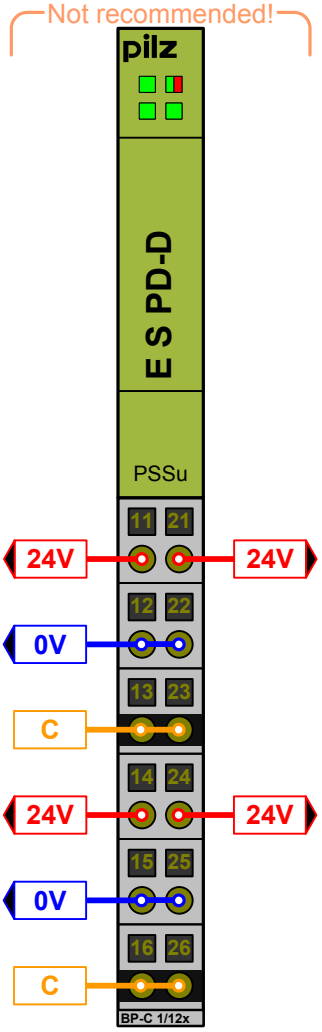
Distributor for periphery supply
Distribution terminal
For extracting the periphery supply only
Load current, periphery supply: max. 2.5 A
per output
Total current of outputs: max. 6 A/24 V DC
Periphery supply: 30 mA (without load)
Module supply: 60 mA
Additional diagnostic data
Addresses in the process image:
ST-PII: 8 Bit (diagnostics)

312197 PSSu E S PD-D
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C

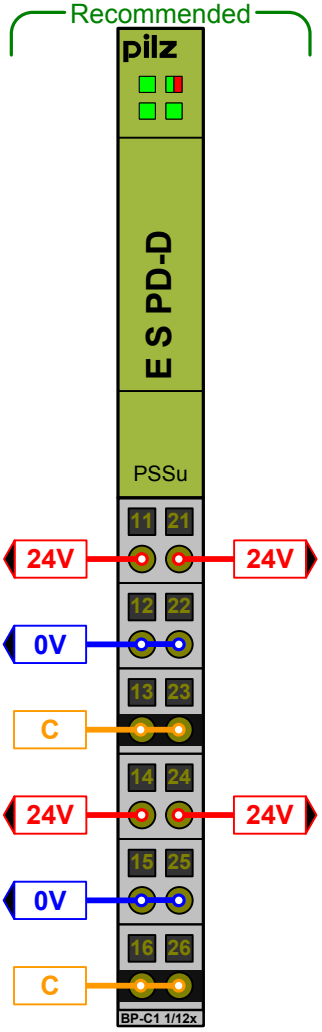
Recommended



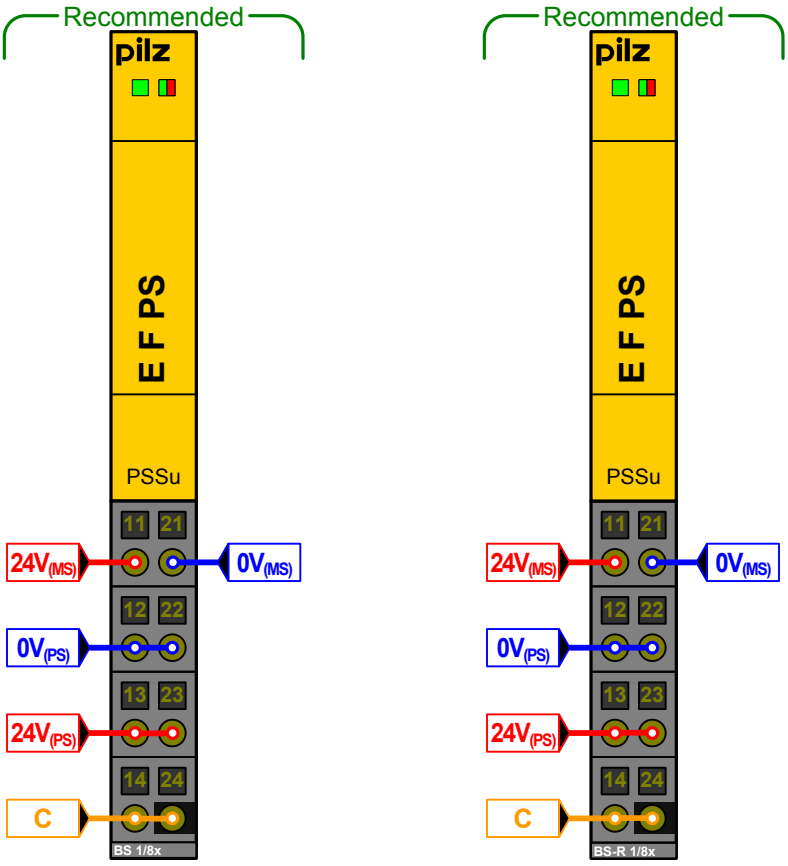
Not recommended!



Recommended



Operating Manual: 21292

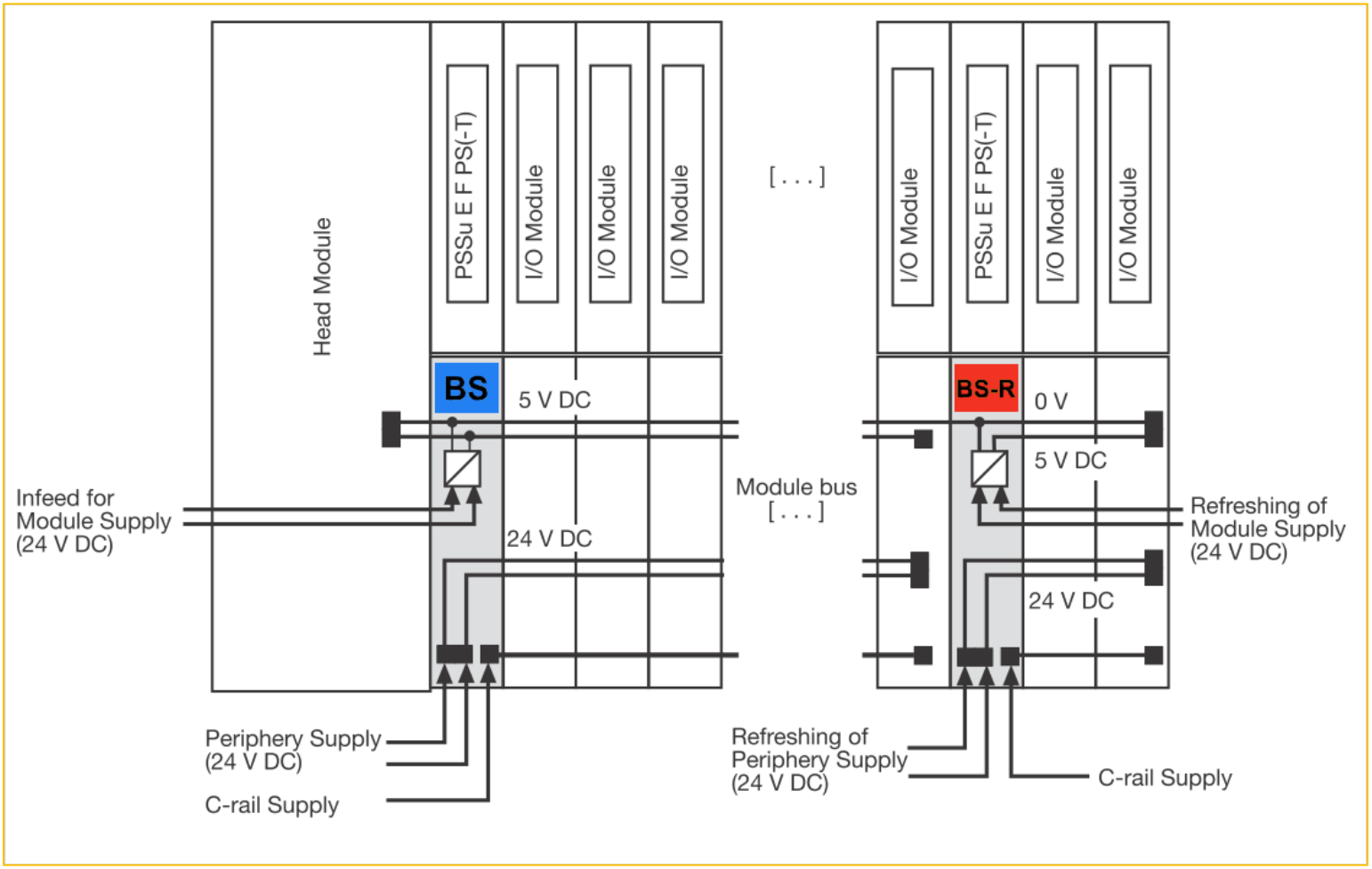


Failsafe electronic module

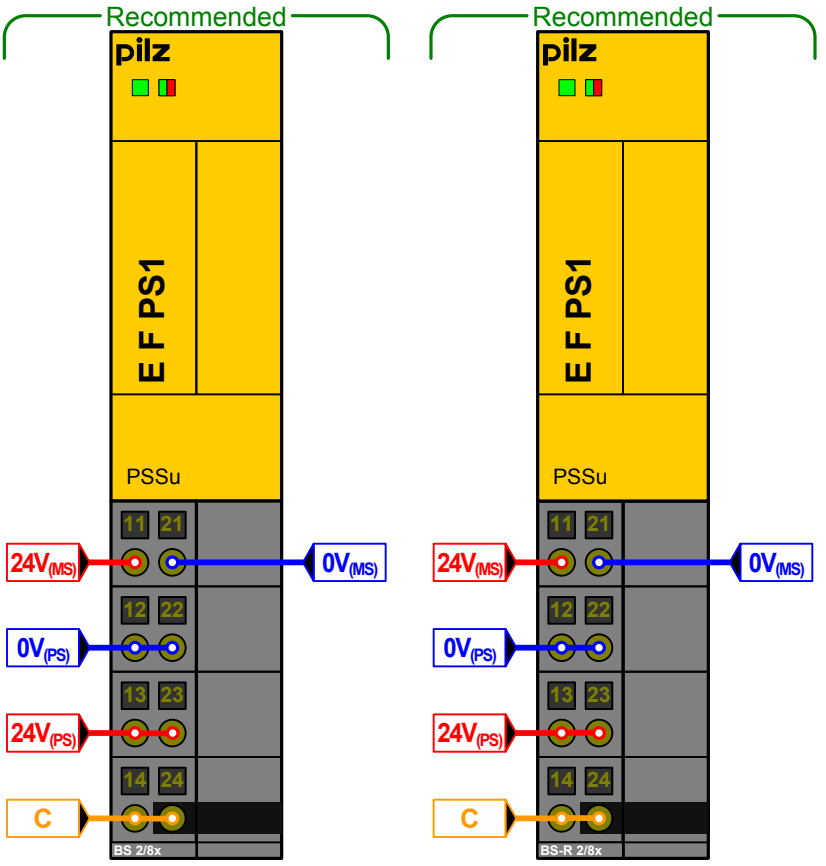
Module's device code: 0801h

Provides a PSSu system with the module supply, periphery supply and infeed for the C-rail supply
Load current, module supply: max. 1.5 A
Module supply buffer: ca. 4 ms
Load current, periphery supply: max. 10 A/ 24 VDC (Refer to derating diagram!)
Total current on C-rail: max. 10 A/24 VDC (Refer to derating diagram!)
Periphery supply: 5 mA (without load)
Module supply: 23 mA
Addresses in the process image:
(only as the first electronic module after the head module on an "R" configuration)
ST-PII: 8 Bit (system status)

312190 PSSu E F PS
312650 PSSu BS 1/8S (for use only as the first module after the head module)
312651 PSSu BS 1/8C (for use only as the first module after the head module)
312652 PSSu BS-R 1/8S (for use only to refresh the voltage and form supply groups)
312653 PSSu BS-R 1/8C (for use only to refresh the voltage and form supply groups)
Coated version available (314xxx; '-T')
314190 PSSu E F PS-T
314650 PSSu BS 1/8S-T
314651 PSSu BS 1/8C-T
314652 PSSu BS-R 1/8S-T
314653 PSSu BS-R 1/8C-T



Operating Manual: 21298

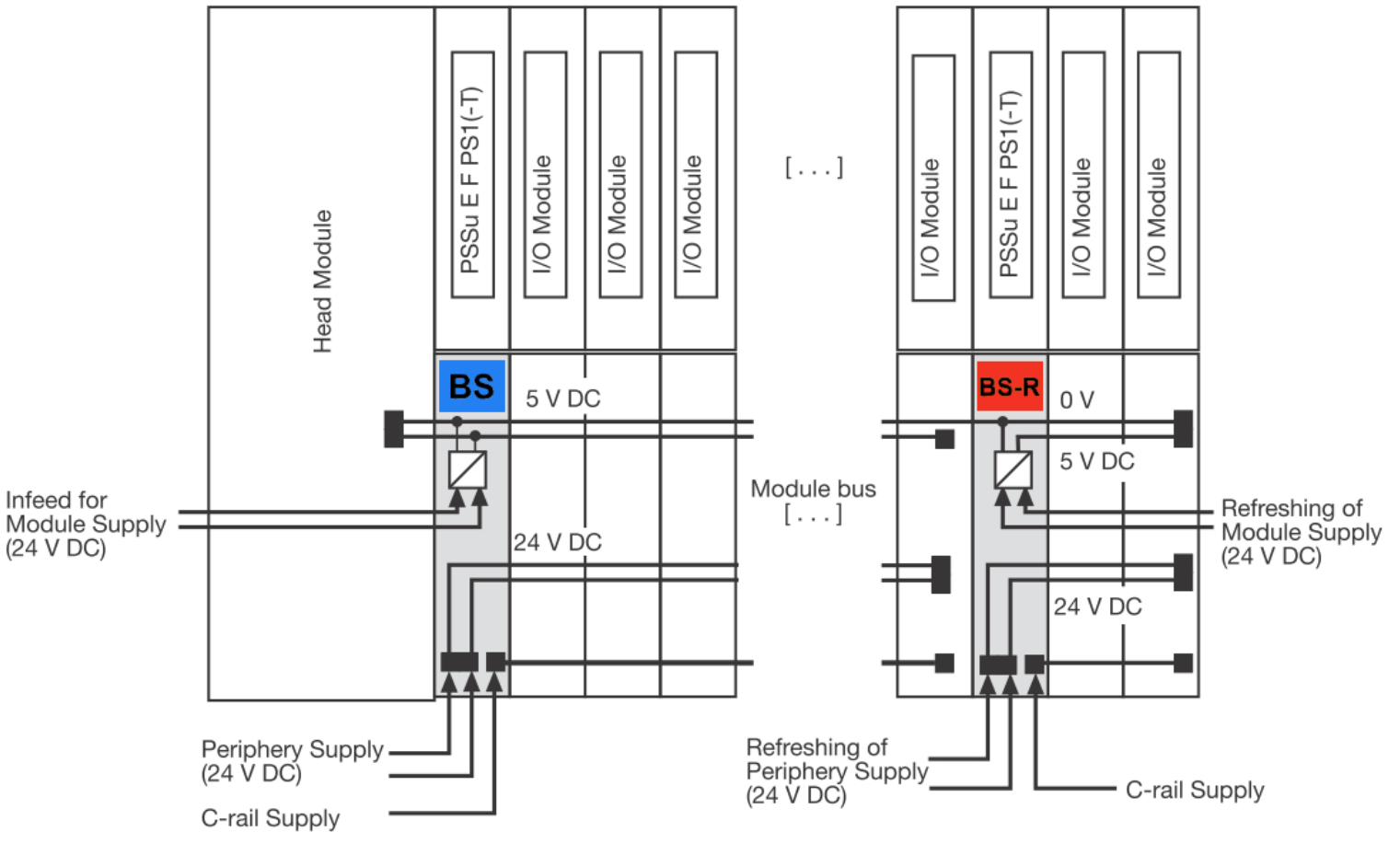


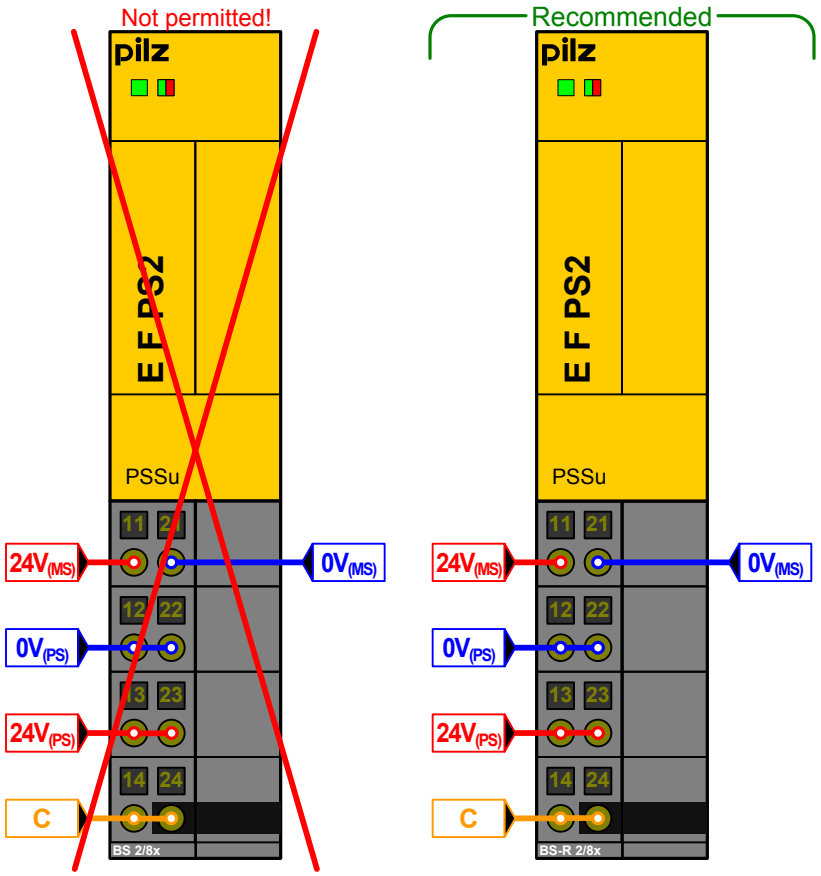
Failsafe electronic module

Module's device code: 0800h

Provides a PSSu system with the module supply, periphery supply and infeed for the C-rail supply
Load current, module supply: max. 2.0 A
Module supply buffer: 20 ms
Load current, periphery supply: max. 10 A/ 24 VDC (Refer to derating diagram!)
Total current on C-rail: max. 10 A/24 VDC (Refer to derating diagram!)
Addresses in the process image:
(only as the first electronic module after the head module on an "R" configuration)
ST-PII: 8 Bit (system status)

312191 PSSu E F PS1
312656 PSSu BS 2/8S (for use only as the first module after the head module)
312657 PSSu BS 2/8C (for use only as the first module after the head module)
312654 PSSu BS-R 2/8S (for use only to refresh the voltage and form supply groups)
312655 PSSu BS-R 2/8C (for use only to refresh the voltage and form supply groups)
Coated version available (314xxx; '-T')
314191 PSSu E F PS1-T
314656 PSSu BS 2/8S-T
314657 PSSu BS 2/8C-T
314654 PSSu BS-R 2/8S-T
314655 PSSu BS-R 2/8C-T



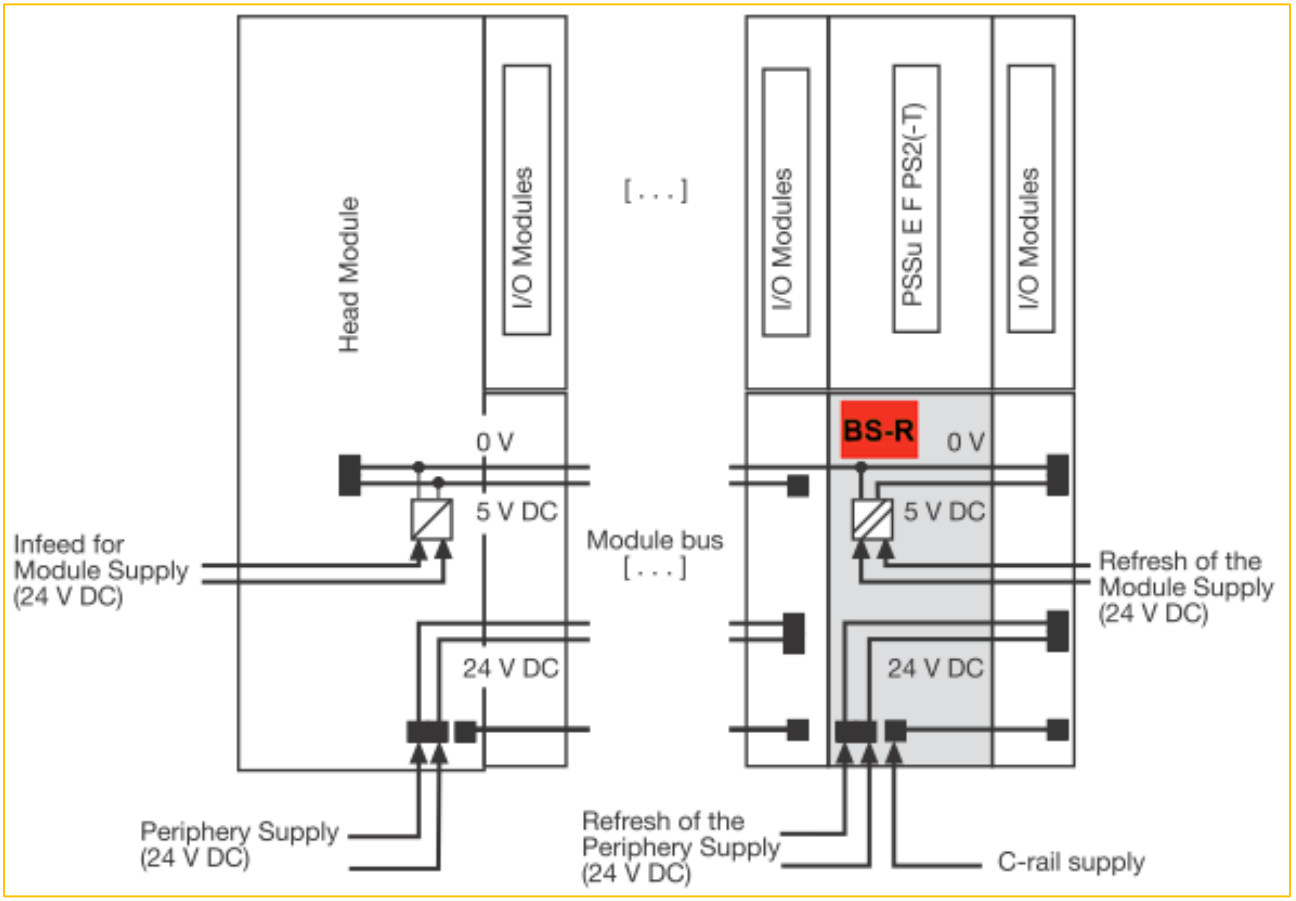


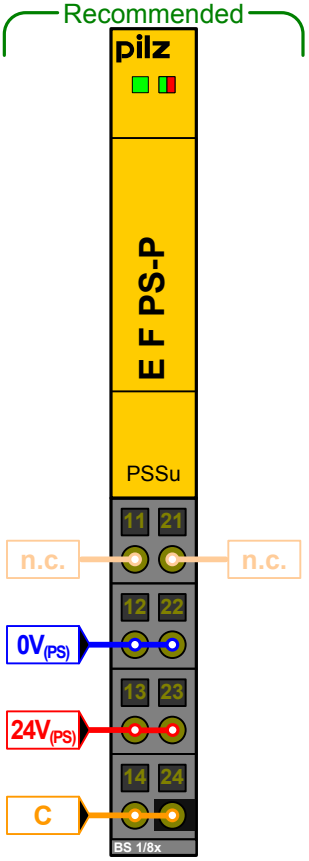
Failsafe electronic module

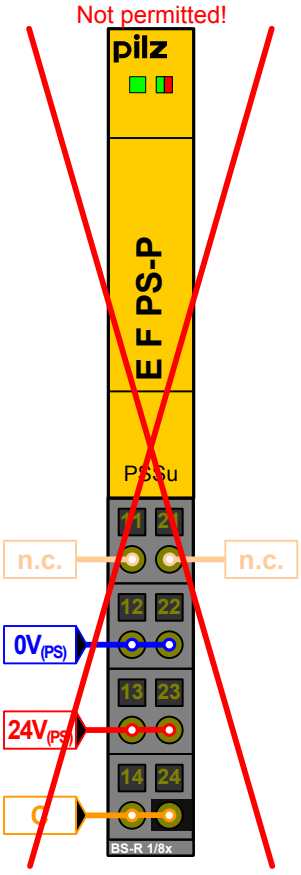
Module's device code: 0803h

Provides a PSSu system with the module supply, periphery supply and infeed for the C-rail supply
Load current, module supply: max. 1.0 A
Module supply buffer: 20 ms
Load current, periphery supply: max. 10 A/ 24 VDC (Refer to derating diagram!)
Total current on C-rail: max. 10 A/24 VDC (Refer to derating diagram!)
Addresses in the process image: none

312192 PSSu E F PS2
312654 PSSu BS-R 2/8S (for use only to refresh the voltage and form supply groups)
312655 PSSu BS-R 2/8C (for use only to refresh the voltage and form supply groups)
Coated version available (314xxx; '-T')
314192 PSSu E F PS2-T
314654 PSSu BS-R 2/8S-T
314655 PSSu BS-R 2/8C-T
Railway version available (315xxx; '-R')
315192 PSSu E F PS2-R
314654 PSSu BS-R 2/8S-T
314655 PSSu BS-R 2/8C-T





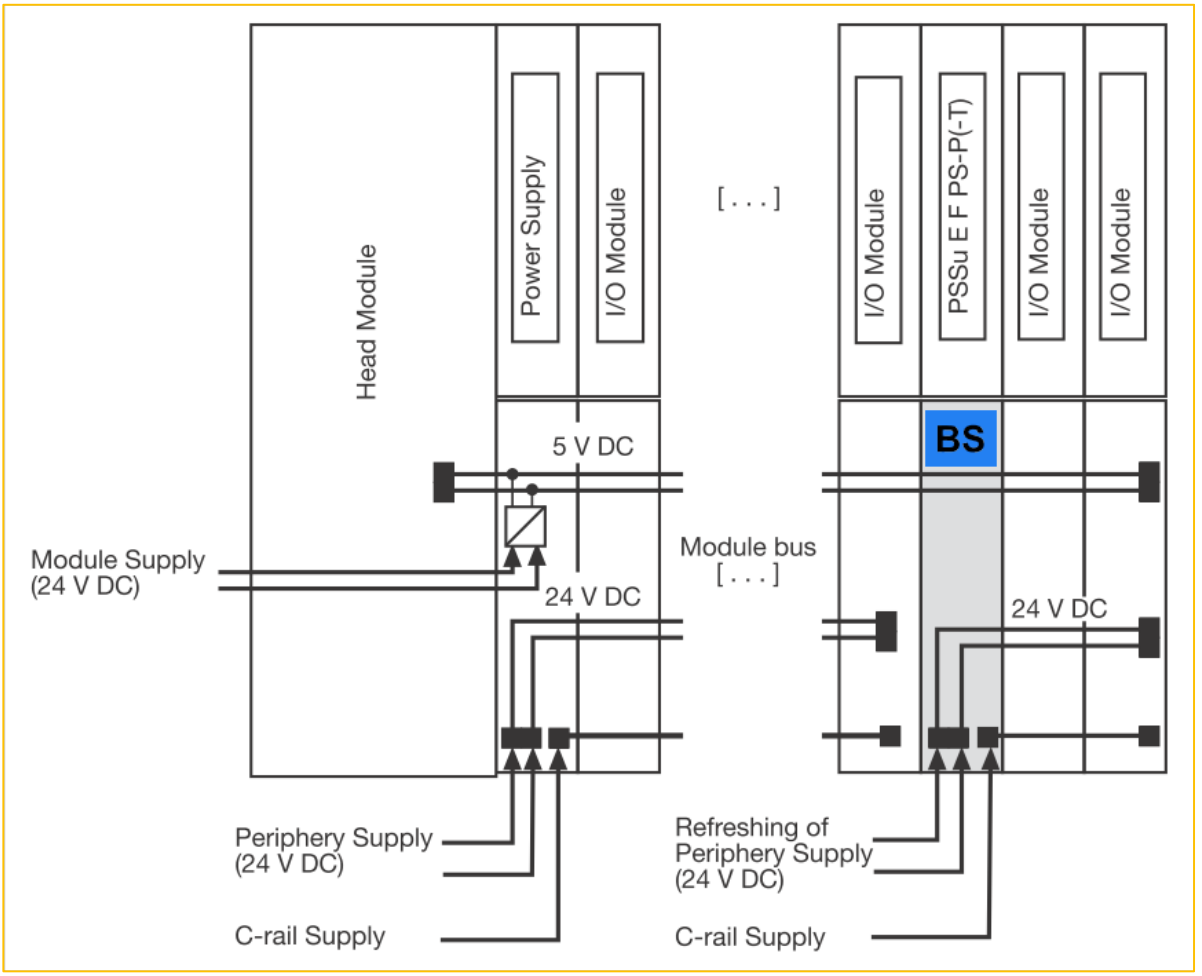


Failsafe electronic module

Module's device code: 0802h

Provides within PSSu system infeed/refresh for periphery supply and C-rail supply
Load current, periphery supply: max. 10 A/ 24 VDC (Refer to derating diagram!)
Total current on C-rail: max. 10 A/24 VDC (Refer to derating diagram!)
Periphery supply: 5 mA (without load)
Module supply: 23 mA
Addresses in the process image: none

312185 PSSu E F PS-P
312650 PSSu BS 1/8S
312651 PSSu BS 1/8C
Coated version available (314xxx; '-T')
314185 PSSu E F PS-P-T
314650 PSSu BS 1/8S-T
314651 PSSu BS 1/8C-T
Railway version available (315xxx; '-R')
315185 PSSu E F PS-P-R
314650 PSSu BS 1/8S-T
314651 PSSu BS 1/8C-T



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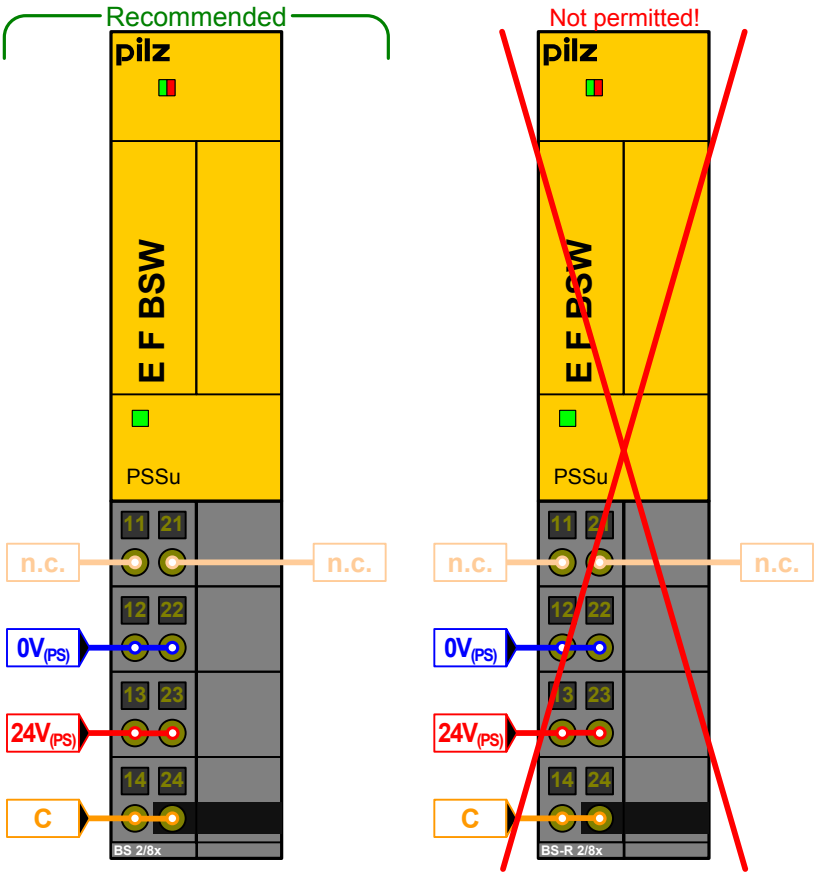
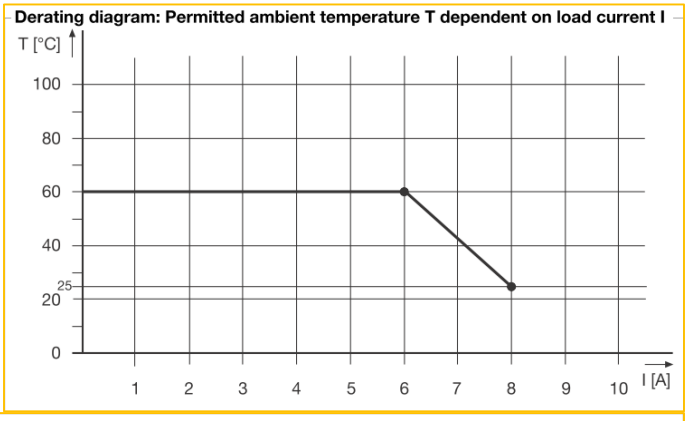


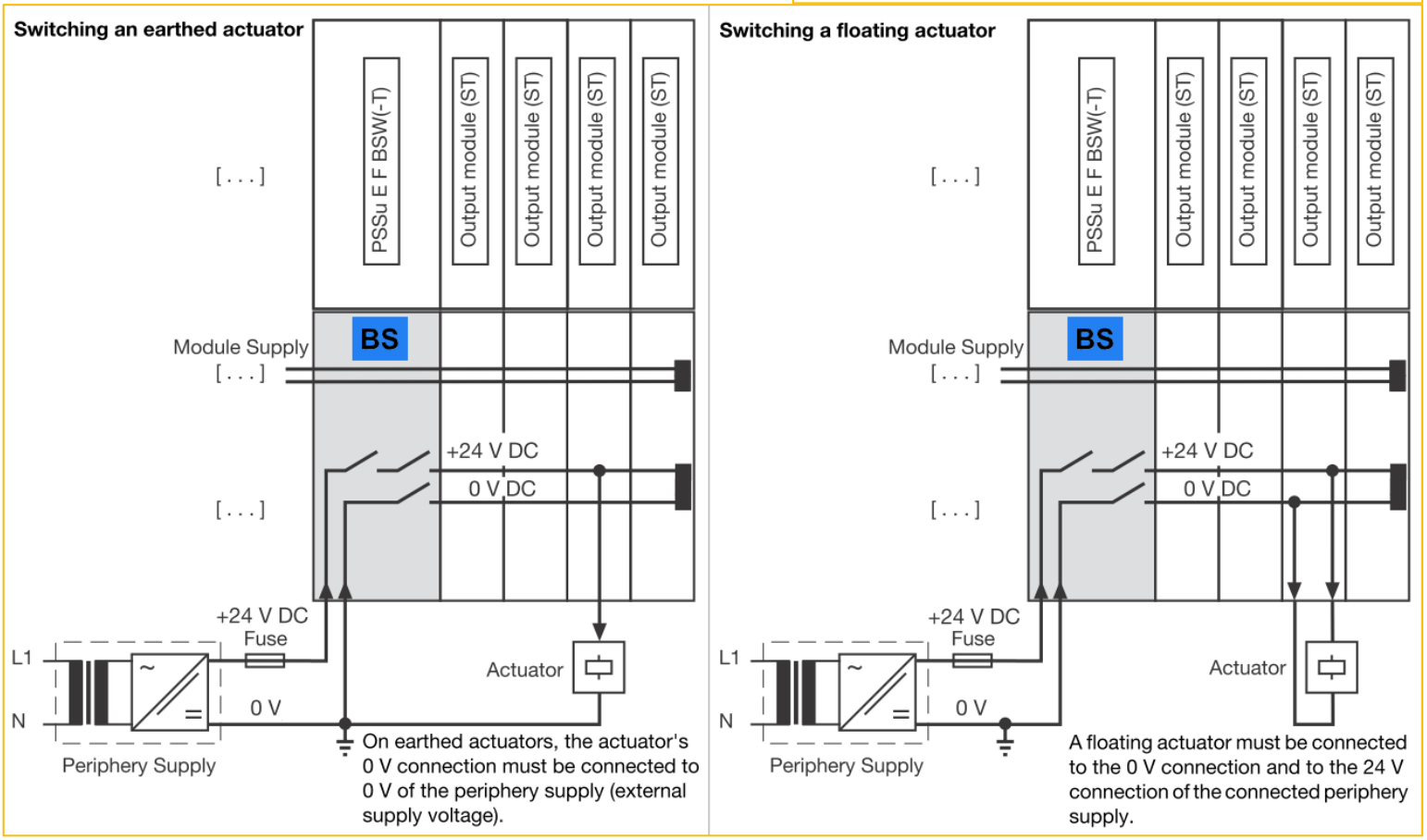
Failsafe electronic module

Module's device code: 0C02h
Maximum number of modules per system: 24|0

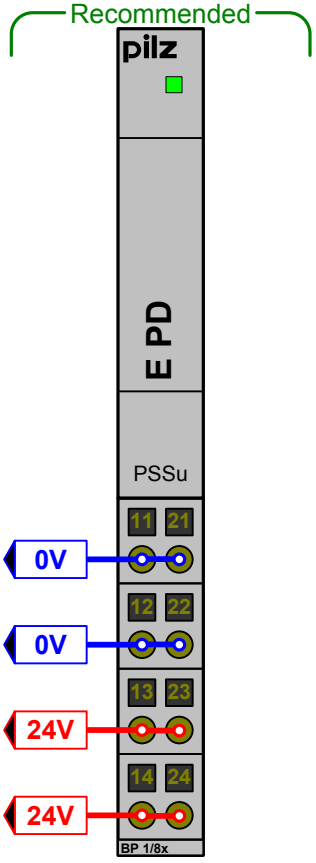
Switches the periphery supply for
subsequent ST modules or
passive distributors (PSSu E PD)
Safety-related shutdown only!
Load current, periphery supply: max. 8 A/
24 VDC (Refer to derating diagram!)
Total current on C-rail: max. 10 A/24 VDC
(Refer to derating diagram!)
Periphery supply: 40 mA (without load)
Module supply: 330 mA
Addresses in the process image:
FS-PIO: 1 Bit
ST-PII: 1 Bit ("R" configuration)

312230 PSSu E F BSW
312656 PSSu BS 2/8S
312657 PSSu BS 2/8C
Coated version available (314xxx; '-T')
314230 PSSu E F BSW-T
314656 PSSu BS 2/8S-T
314657 PSSu BS 2/8C-T

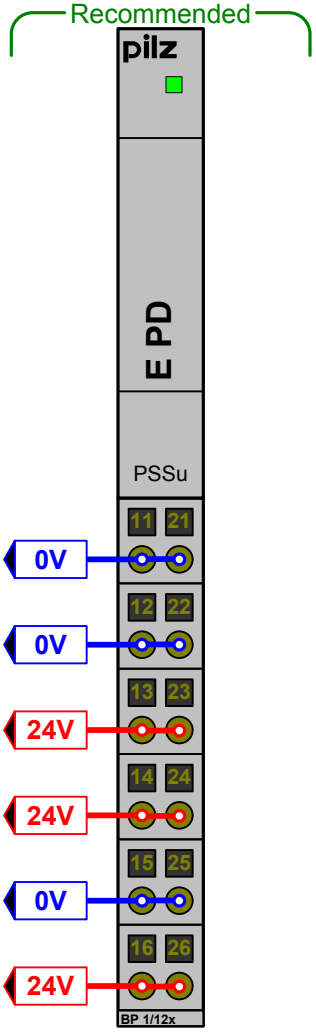




Recommended



Recommended



Standard electronic module
(passiv)

Module's device code: ----

Distributor for periphery supply
Passive distribution terminal block
For extracting the periphery supply only!
Addresses in the process image: none
Slot number: none
Slot marking: PD

312195 PSSu E PD
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314195 PSSu E PD-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
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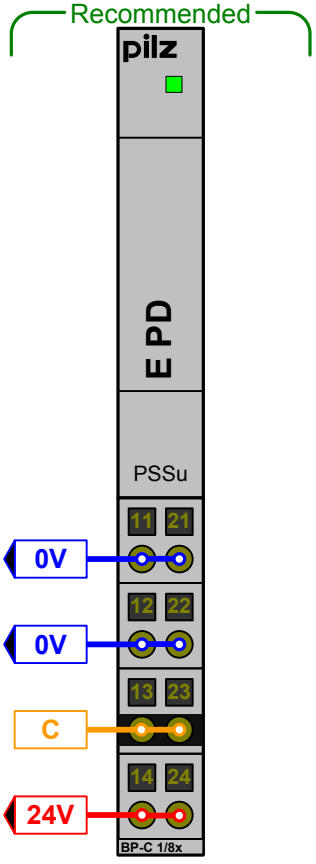
314623 PSSu BP-C1 1/12C-T

Recommended



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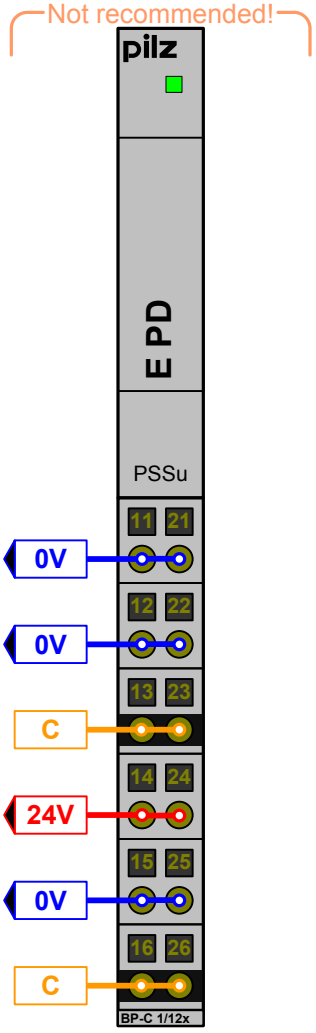

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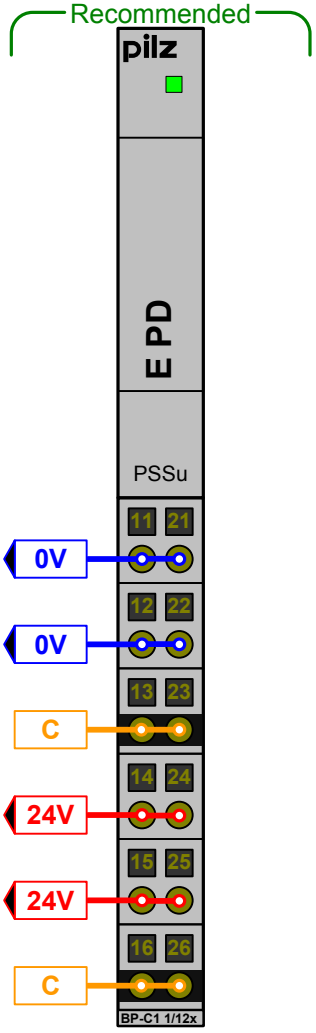

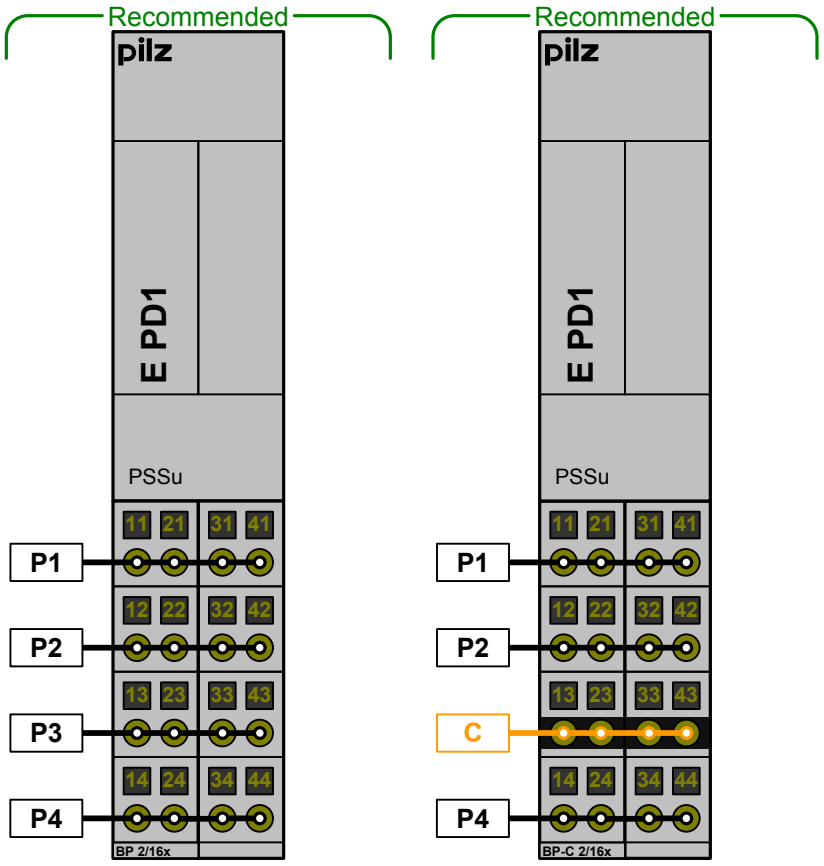

Standard electronic module
(passiv)

Module's device code: ----

Distributor for periphery supply
Passive distribution terminal block
Max. 4 different external supplies
Addresses in the process image: none
Slot number: none
Slot marking: PD

312196 PSSu E PD1
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C
Coated version available (314xxx; '-T')
314196 PSSu E PD1-T
314628 PSSu BP 2/16S-T
314629 PSSu BP 2/16C-T
314630 PSSu BP-C 2/16S-T
314631 PSSu BP-C 2/16C-T

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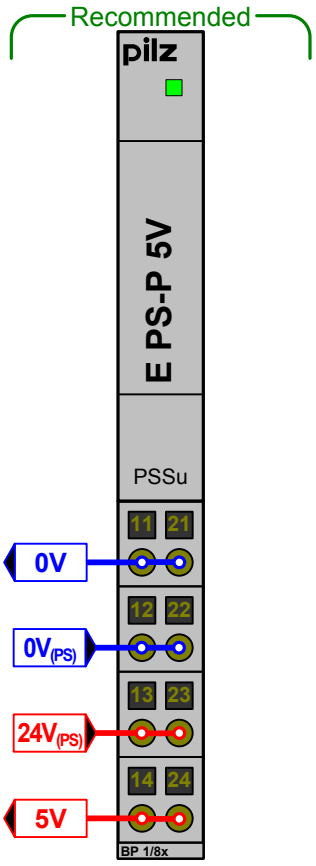

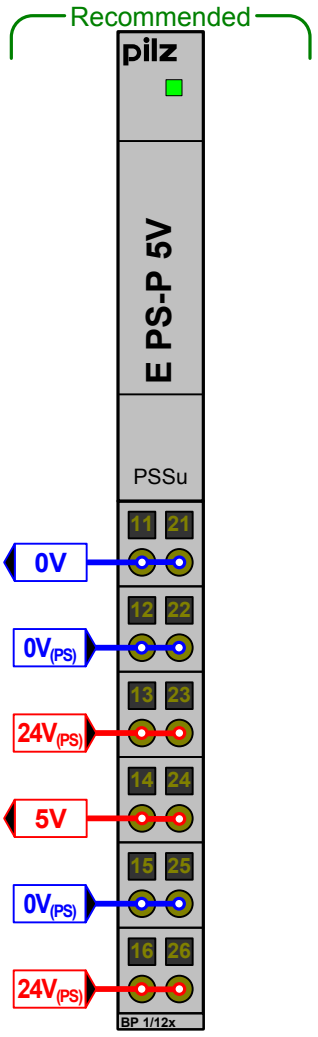

Standard electronic module
(passiv)

Module's device code: ----

DC power supply
Input voltage: 0 V, +24 V
Output voltage: 0 V, +5 V
Max. continuous output: 10 W
Max. output current: +5V: 2.0 A
Addresses in the process image: none
Slot number: none
Slot marking: PS

312590 PSSu E F PS-P 5V
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
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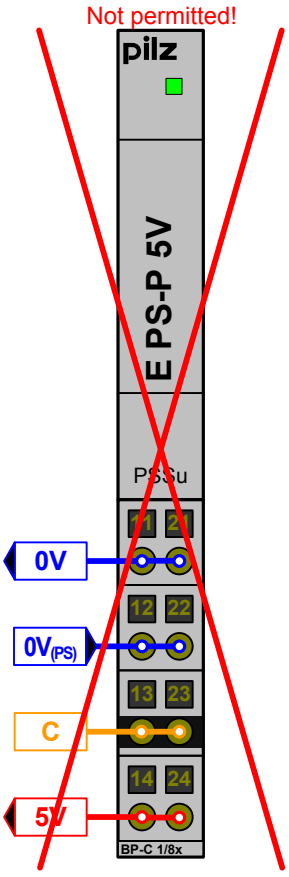
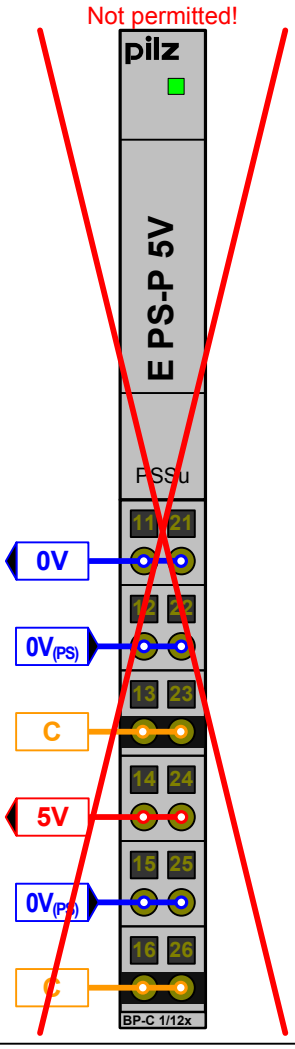
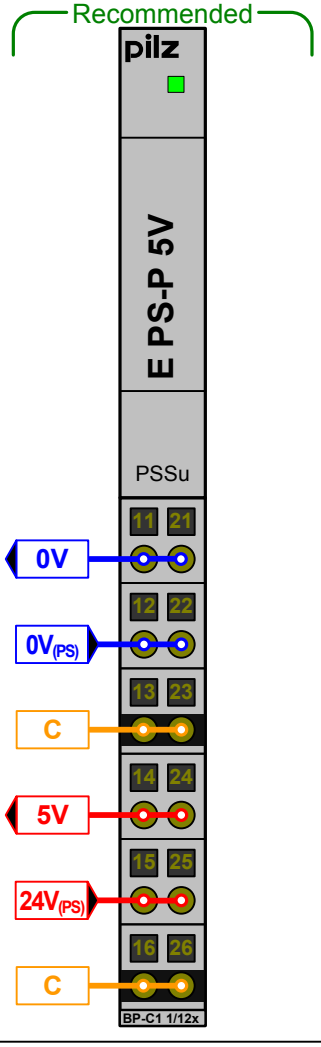
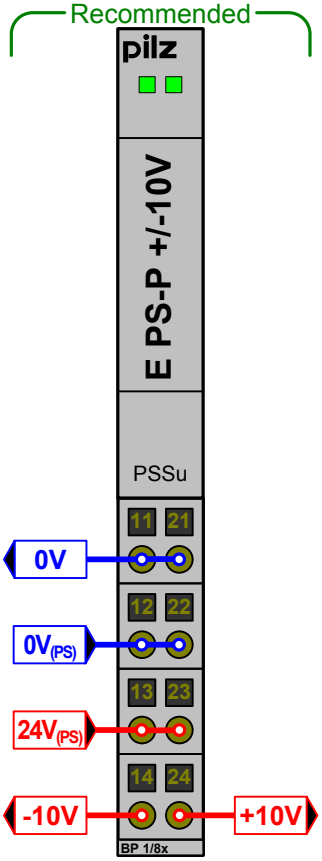
312623 PSSu BP-C1 1/12C







Recommended



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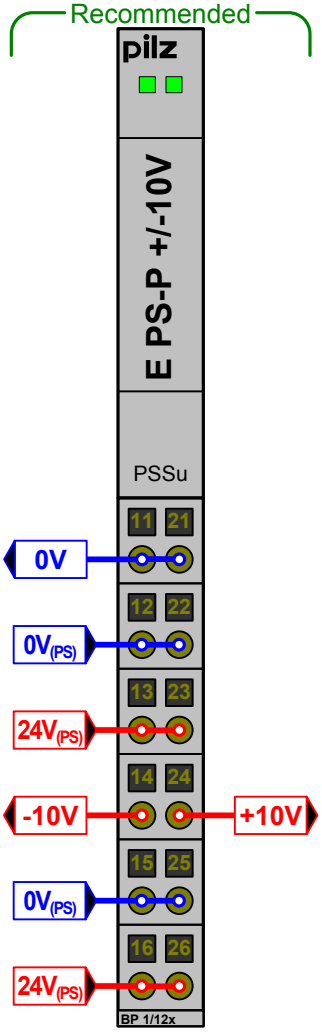


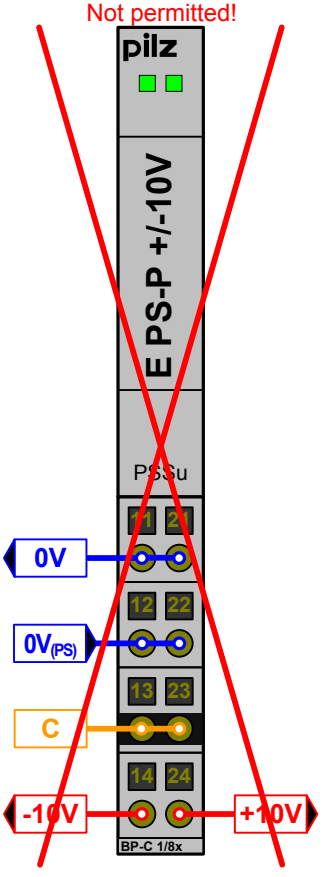
Standard electronic module
(passiv)

Module's device code: ----

DC power supply
Input voltage: 0 V, +24 V
Output voltage: -10 V, 0 V, +10 V
Max. continuous output: 10 W
Max. output current:
  -10V: 0.5 A
  +10V: 1.0 A
Addresses in the process image: none
Slot number: none
Slot marking: PS

312591 PSSu E F PS-P +/-10V
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C

Not permitted!



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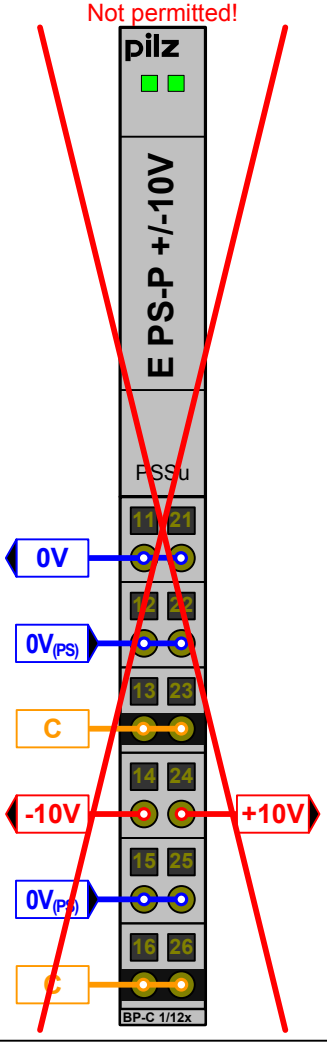

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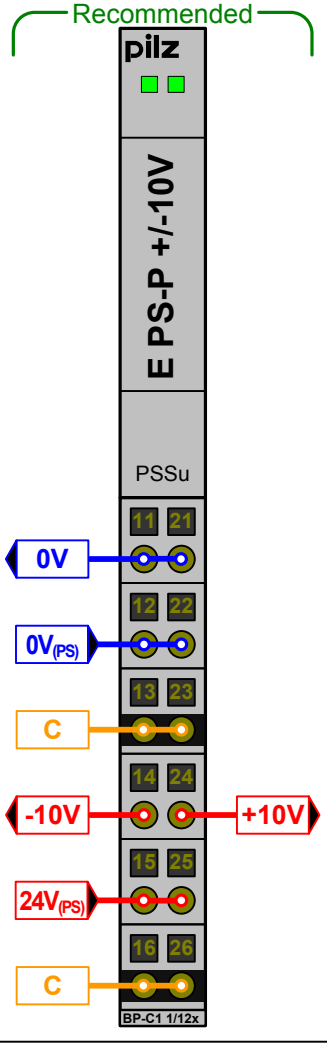

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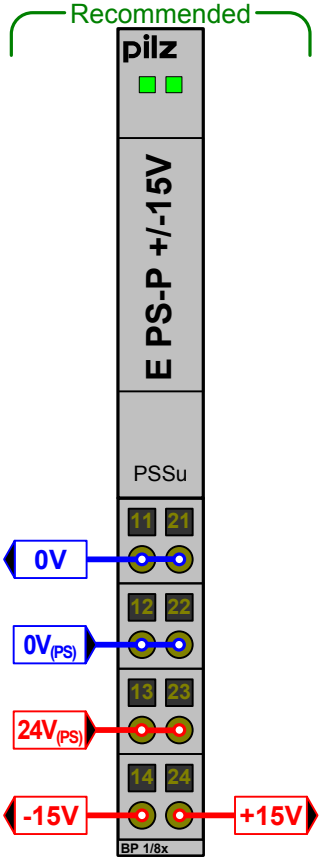
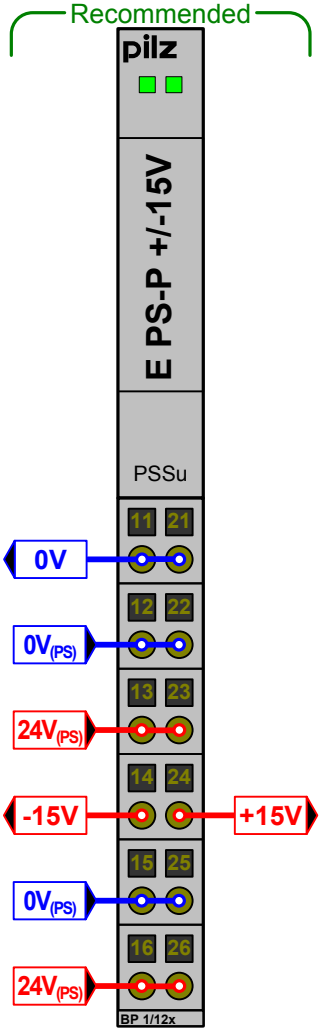


Recommended



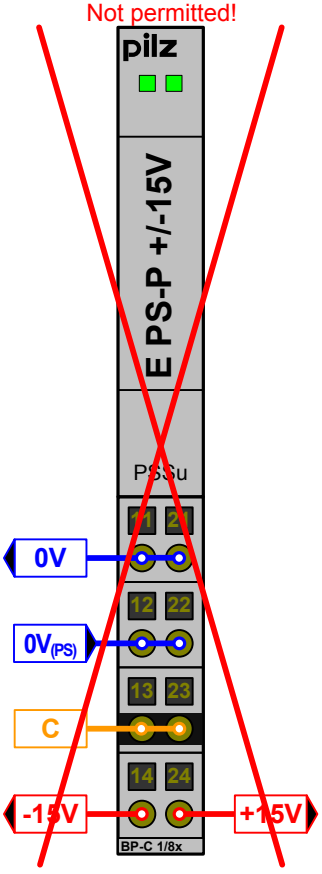
Standard electronic module
(passiv)

Module's device code: ----

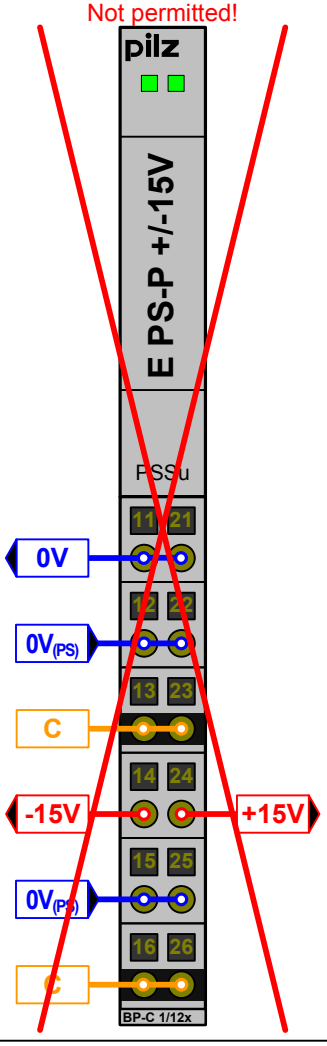
DC power supply
Input voltage: 0 V, +24 V
Output voltage: -15 V, 0 V, +15 V
Max. continuous output: 10 W
Max. output current:
  -15V: 0.3 A
  +15V: 0.6 A
Addresses in the process image: none
Slot number: none
Slot marking: PS

312591 PSSu E F PS-P +/-15V
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C

Not permitted!



Not permitted!



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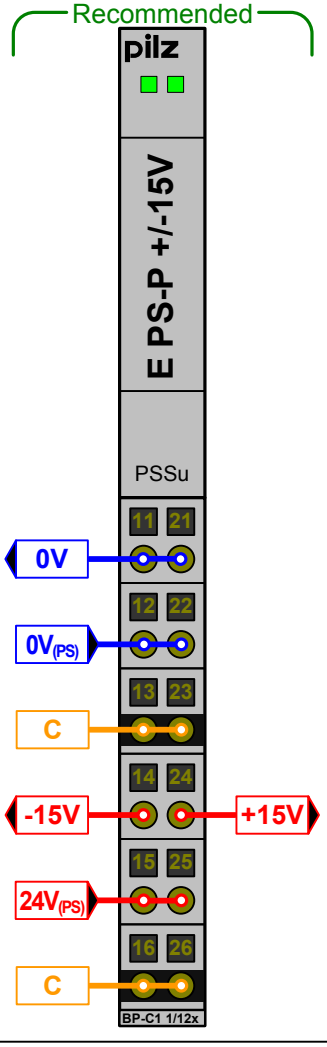
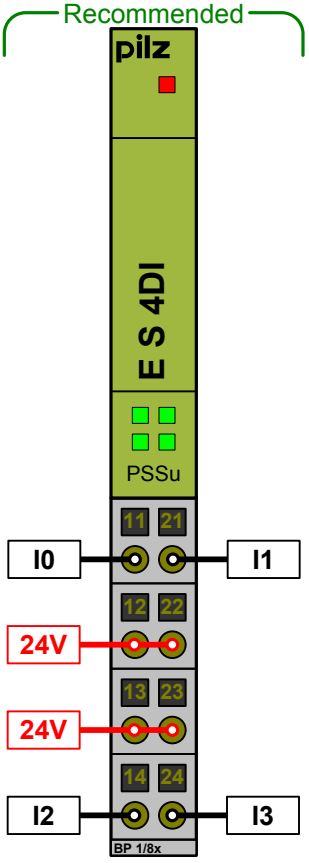
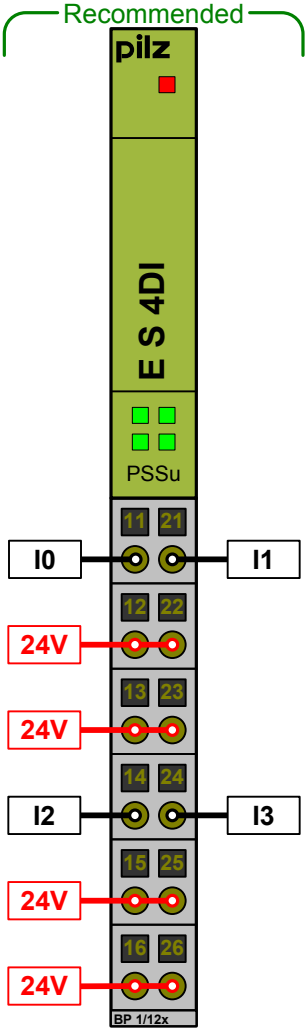


Recommended



Recommended



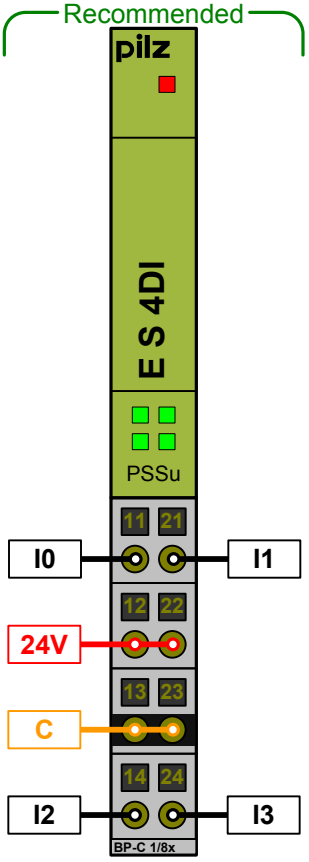
Standard electronic module

Module's device code: 0200h

Digital ST inputs: 4
Periphery supply: 0 mA
Module supply: 24 mA
Addresses in the process image:
ST-PII: 4 Bit

312400 PSSu E S 4DI
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314400 PSSu E S 4DI-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

Recommended



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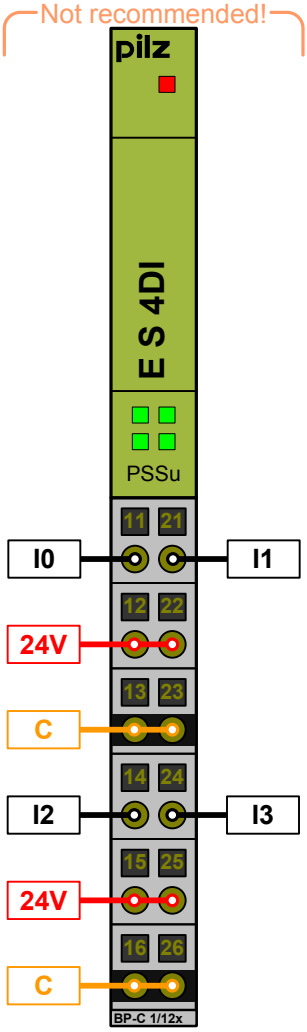

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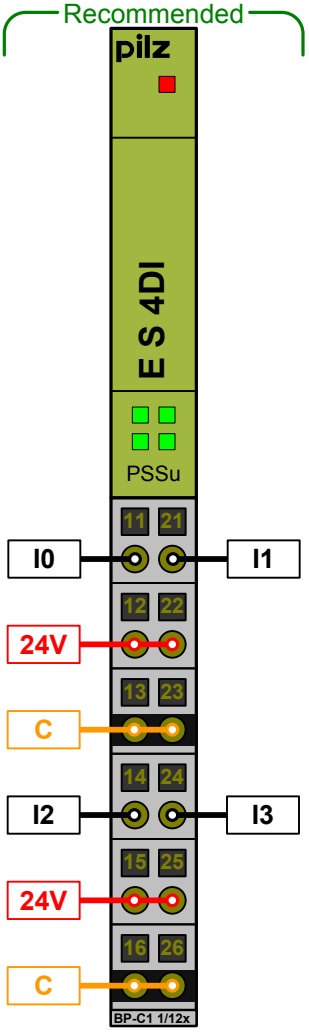
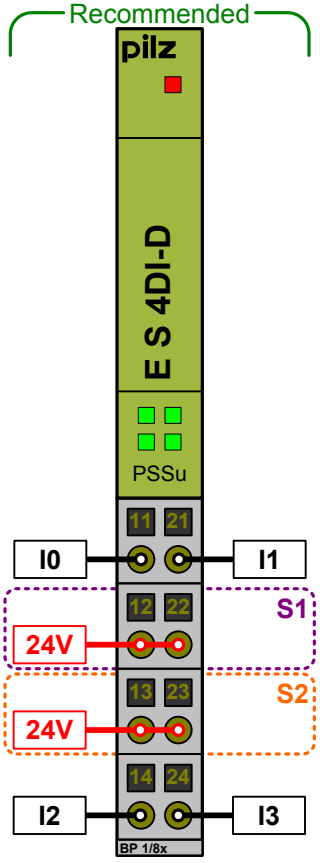
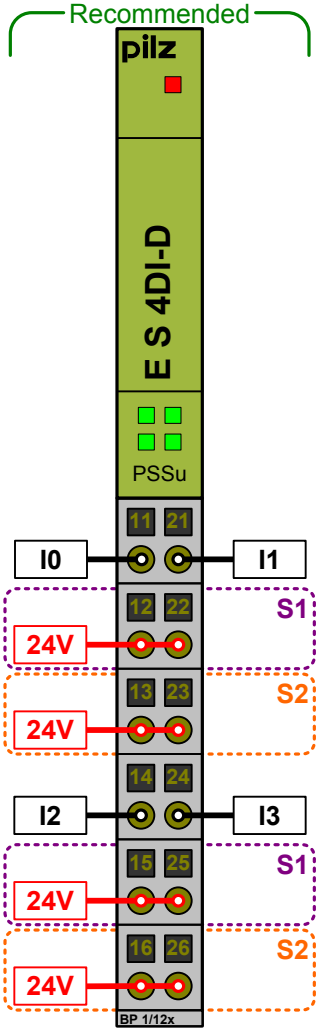


Recommended



Recommended



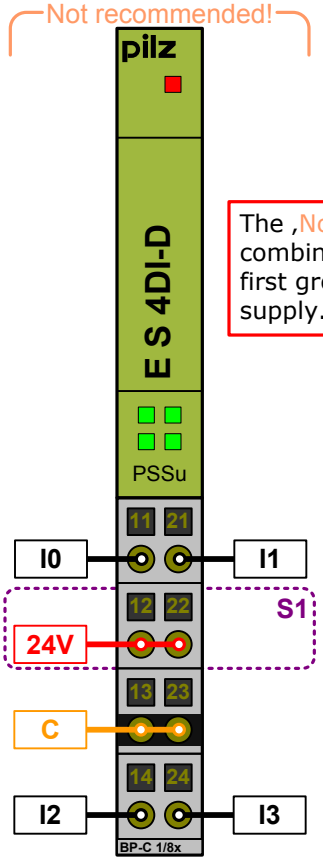
Standard electronic module

Module's device code: 0210h

Digital ST inputs: 4
Load current, periphery supply:
max. 0.25 A per output
Periphery Supply: 25 mA (without load)
Module Supply: 60 mA
Addresses in the process image:
> System environment A (PSSu I/O)
ST-PII: 4 Bit (Bit 0-3)
ST-PII: 4 Bit (Bit 4-7){"*" configuration}
ST-PII: 8 Bit (1 Byte) + 4 Bit (Bit 0-3)
{"S" configuration}
> System environment B (PSS 4000)
ST-PII: 4 Bit (Bit 0-3)

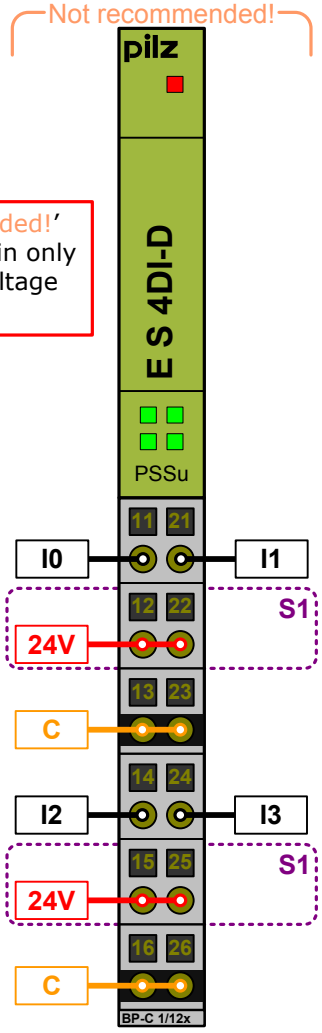
312401 PSSu E S 4DI-D
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C

Not recommended!



The ‚Not recommended!' combinations contain only first group **S1** of voltage supply.

Not recommended!



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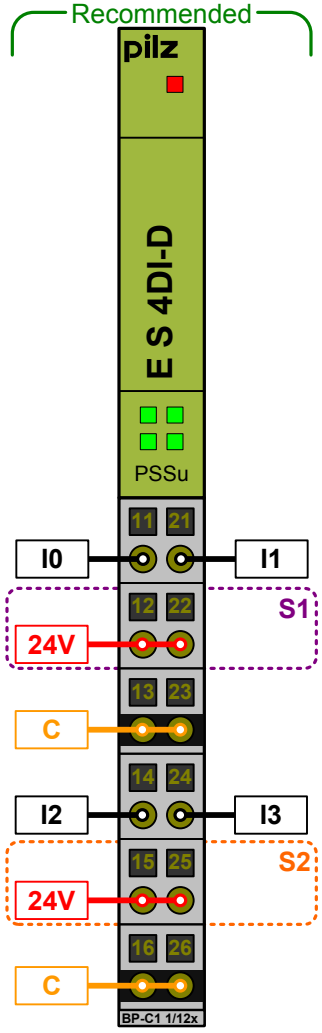

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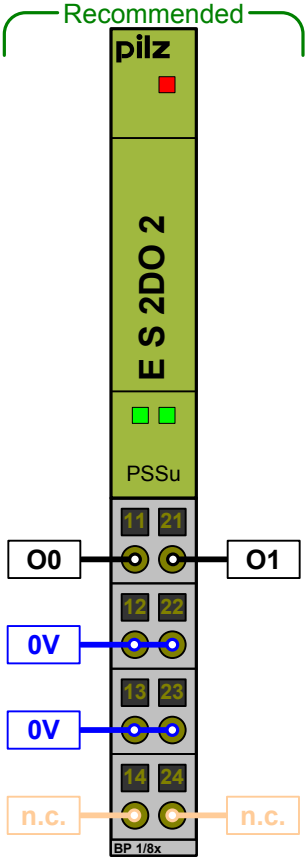
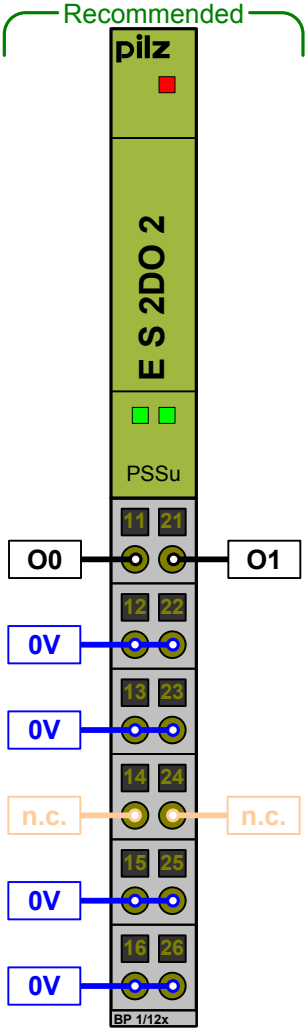


Recommended



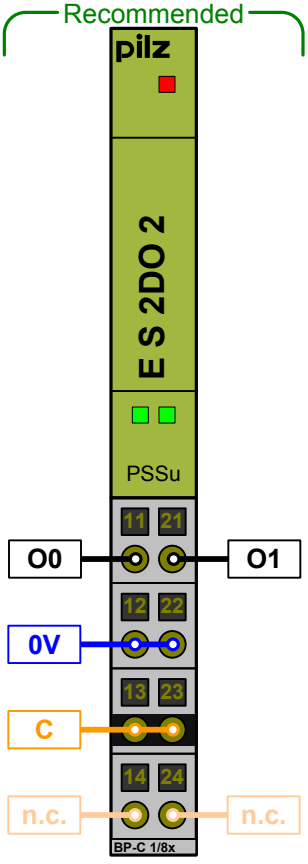
Standard electronic module

Module's device code: 0400h

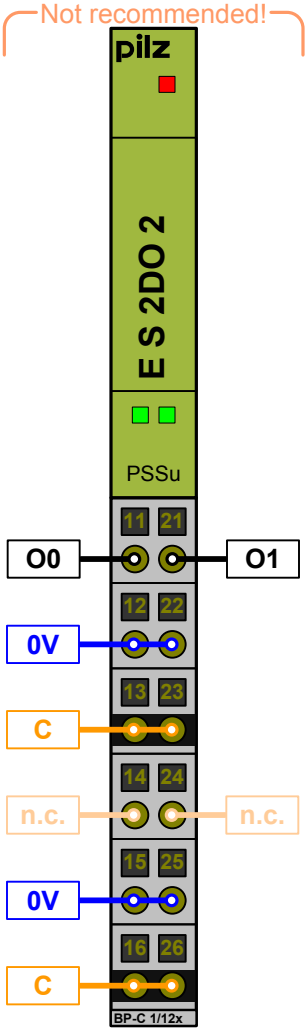
Digital ST outputs: 2 (single-pole)
Load current, periphery supply:
  2 A per output
Total current of outputs: 4 A/24 VDC
Periphery supply: 10 mA (without load)
Module supply: 18 mA
Addresses in the process image:
  ST-PIO: 2 Bit

312410 PSSu E S 2DO 2
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314410 PSSu E S 2DO 2-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

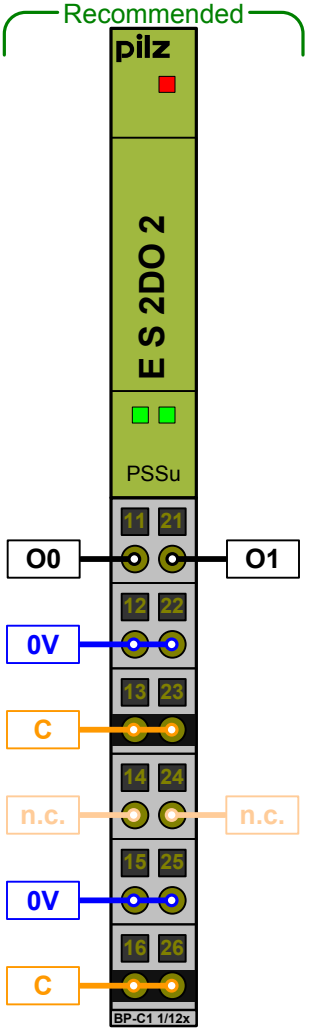
Recommended



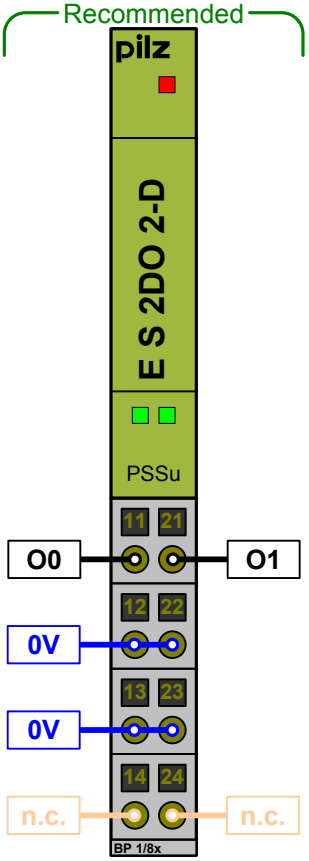
Not recommended!



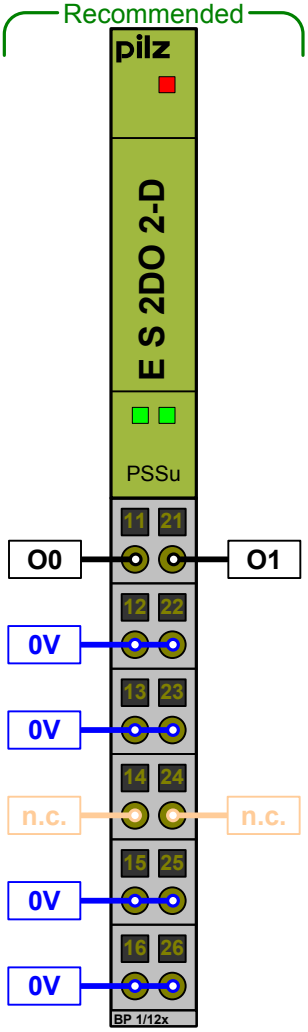
Recommended



Recommended



Recommended



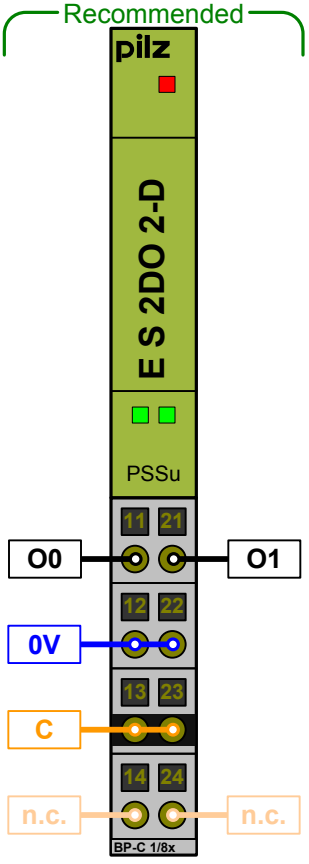
Standard electronic module

Module's device code: 0410h

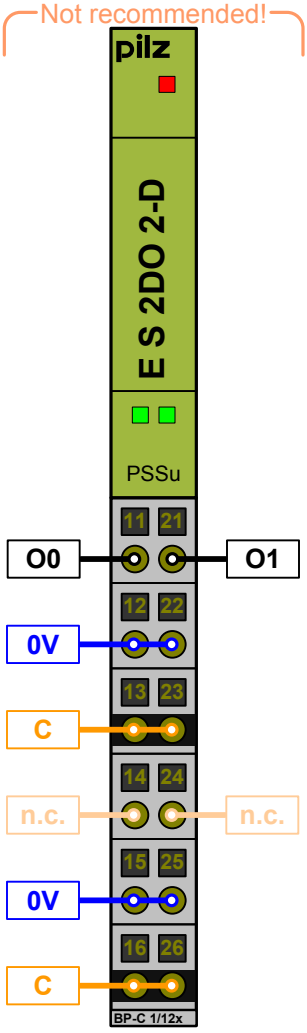
Digital ST outputs: 2 (single-pole)
Load current, periphery supply:
  2 A per output
Total current of outputs: 4 A/24 VDC
Additional diagnostic data
Periphery supply: 25 mA (without load)
Module supply: 60 mA
Addresses in the process image:
> System environment A (PSSu I/O)
  ST-PIO: 2 Bit (outputs)
  ST-PII: 8 Bit (diagnostics) {"S" config.}
> System environment B (PSS 4000)
  ST-PIO: 2 Bit (outputs)

312411 PSSu E S 2DO 2-D
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314411 PSSu E S 2DO 2-TD
> Coated base modules just like
  '314410 PSSu E S 2DO 2-T'

Recommended



Not recommended!



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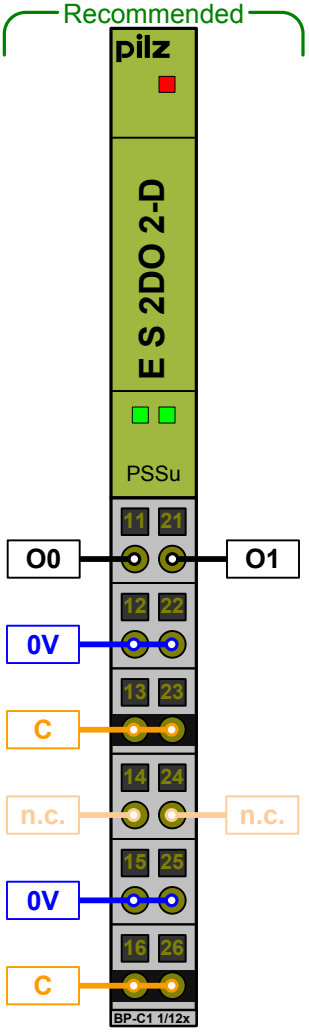

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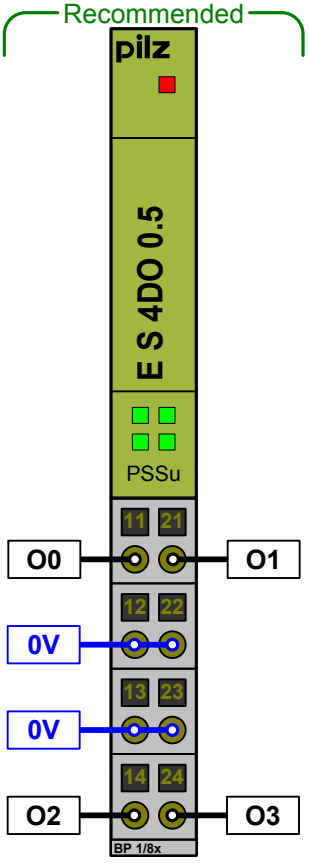
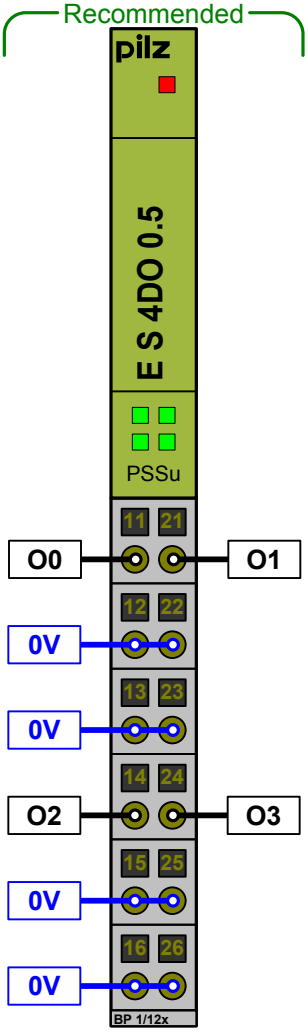
Recommended



Recommended



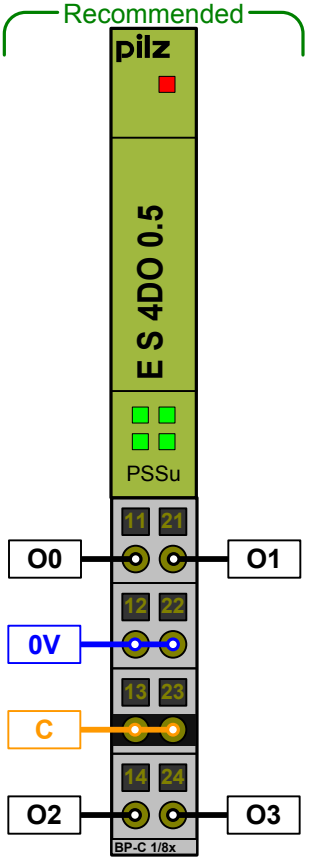
Standard electronic module

Module's device code: 0401h

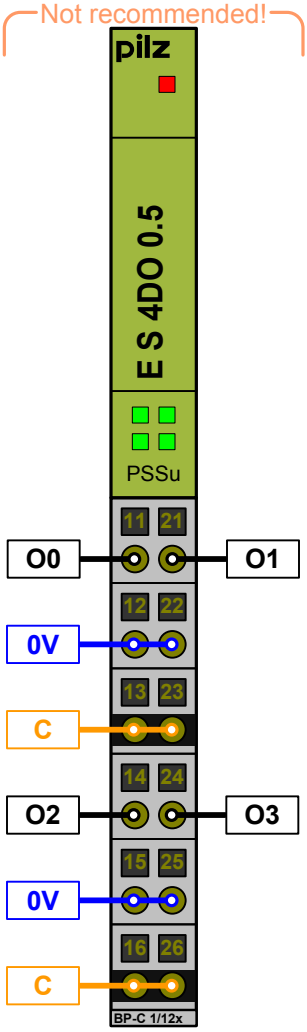
Digital ST outputs: 4 (single-pole)
Load current, periphery supply:
  0.5 A per output
Total current of outputs: 2 A/24 V DC
Periphery supply: 18 mA (without load)
Module supply: 20 mA
Addresses in the process image:
  ST-PIO: 4 Bit

312405 PSSu E S 4DO 0.5
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314405 PSSu E S 4DO 0.5-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

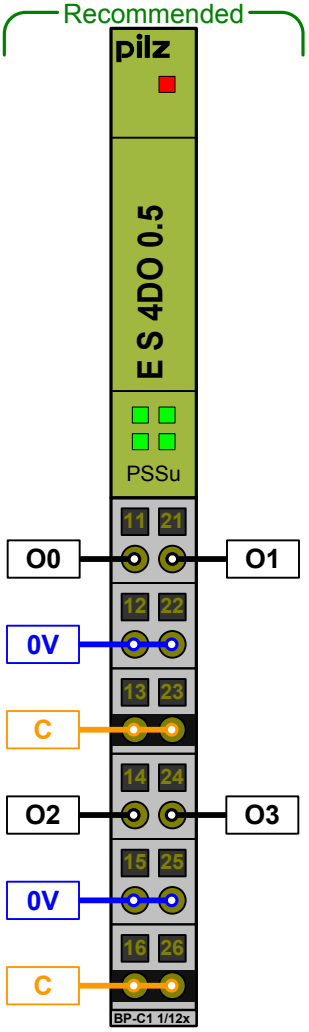
Recommended



Not recommended!



Recommended



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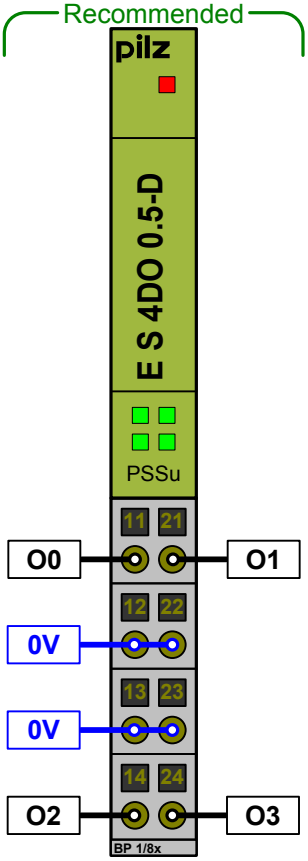

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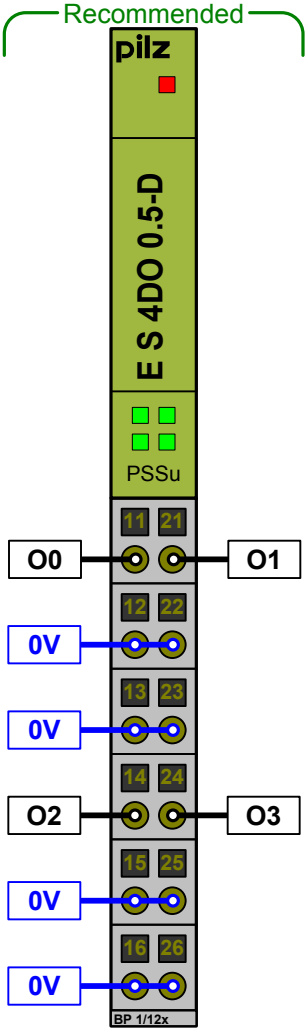


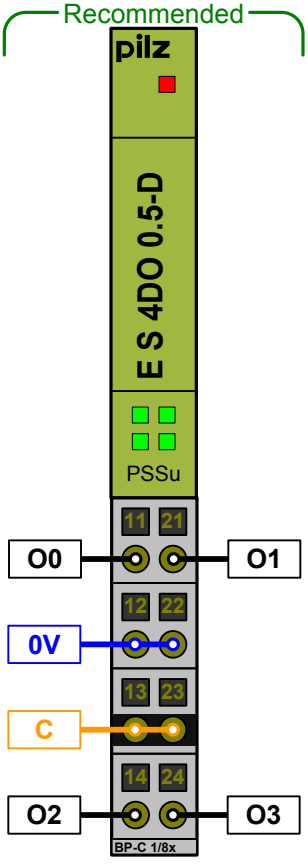
Standard electronic module

Module's device code: 0411h

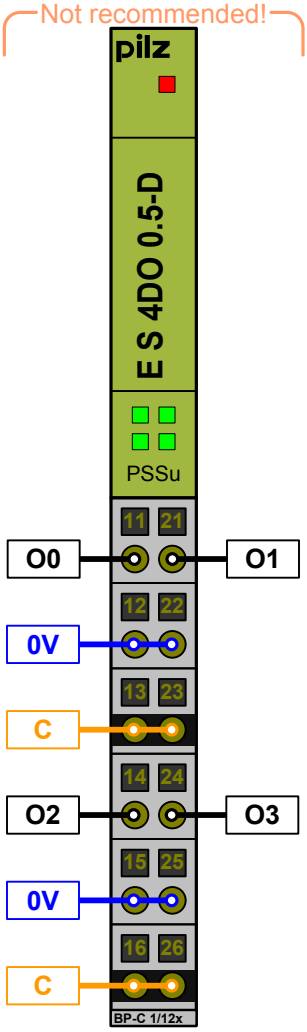
Digital ST outputs: 4 (single-pole)
Load current, periphery supply:
  0.5 A per output
Total current of outputs: 2 A/24 V DC
Additional diagnostic data
Periphery supply: 25 mA (without load)
Module supply: 60 mA
Addresses in the process image:
> System environment A (PSSu I/O)
  ST-PIO: 4 Bit (outputs)
  ST-PII: 8 Bit (diagnostics) {"S" config.}
> System environment B (PSS 4000)
  ST-PIO: 4 Bit (outputs)

312406 PSSu E S 4DO 0.5-D
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314406 PSSu E S 4DO 0.5-TD
> Coated base modules just like
  '314405 PSSu E S 4DO 0.5-T'

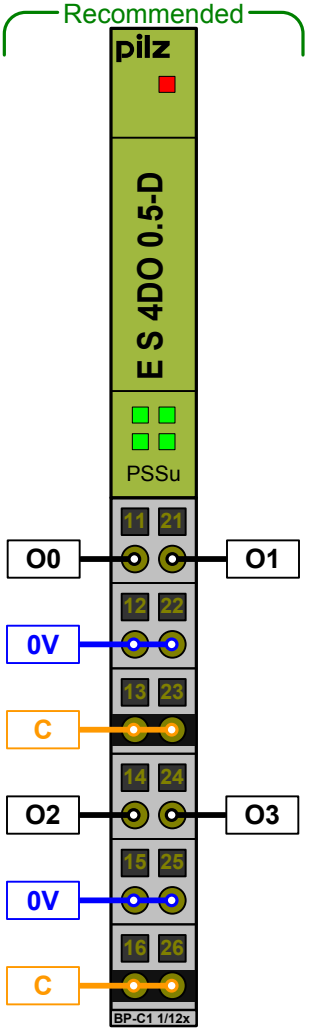
Recommended



Not recommended!



Recommended



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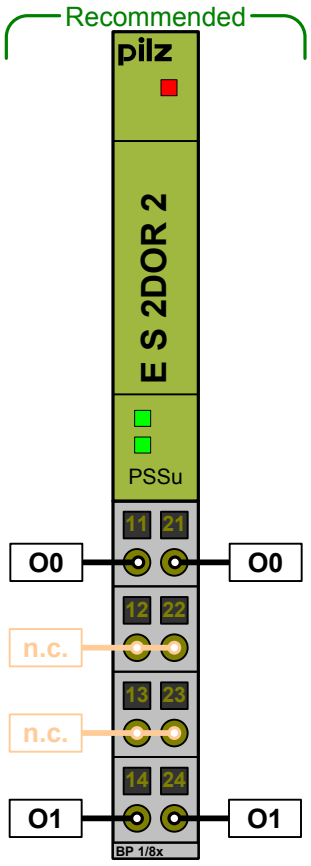

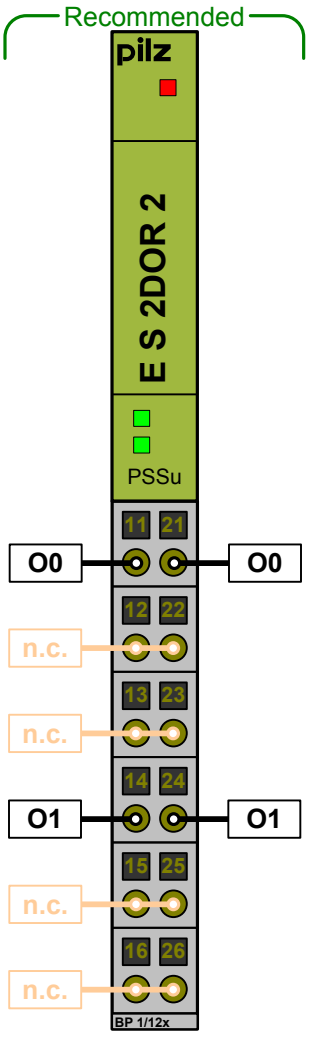

Standard electronic module

Module's device code: 0404h

Digital ST outputs: 2 (relay)
Contact load: max. 2 A per output
(refer to switching capability!)
Periphery supply: 42 mA (without load)
Module supply: 19 mA
Addresses in the process image:
ST-PIO: 2 Bit

312511 PSSu E S 2DOR 2
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314511 PSSu E S 2DOR 2-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
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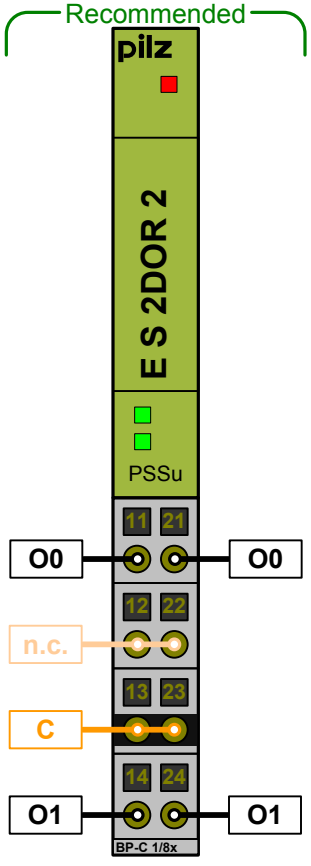
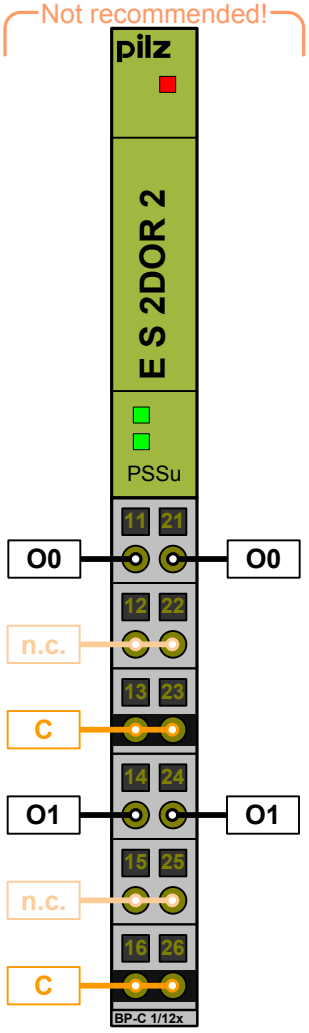
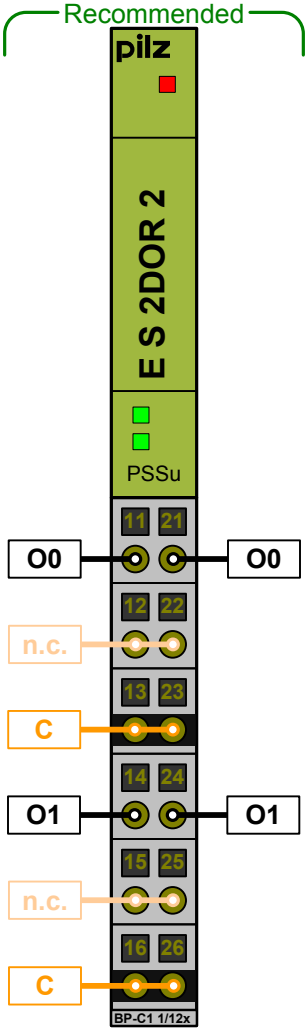
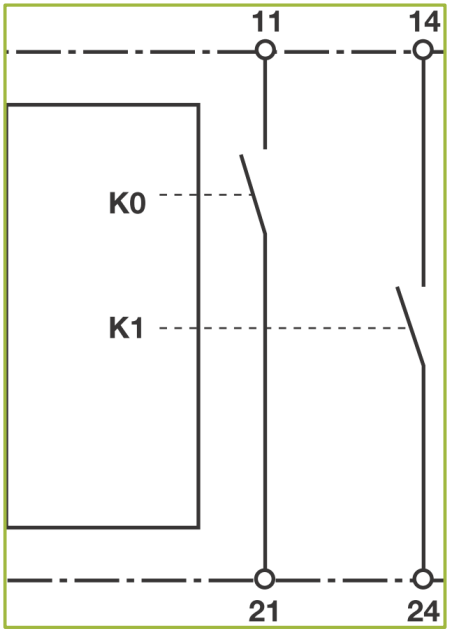
314623 PSSu BP-C1 1/12C-T

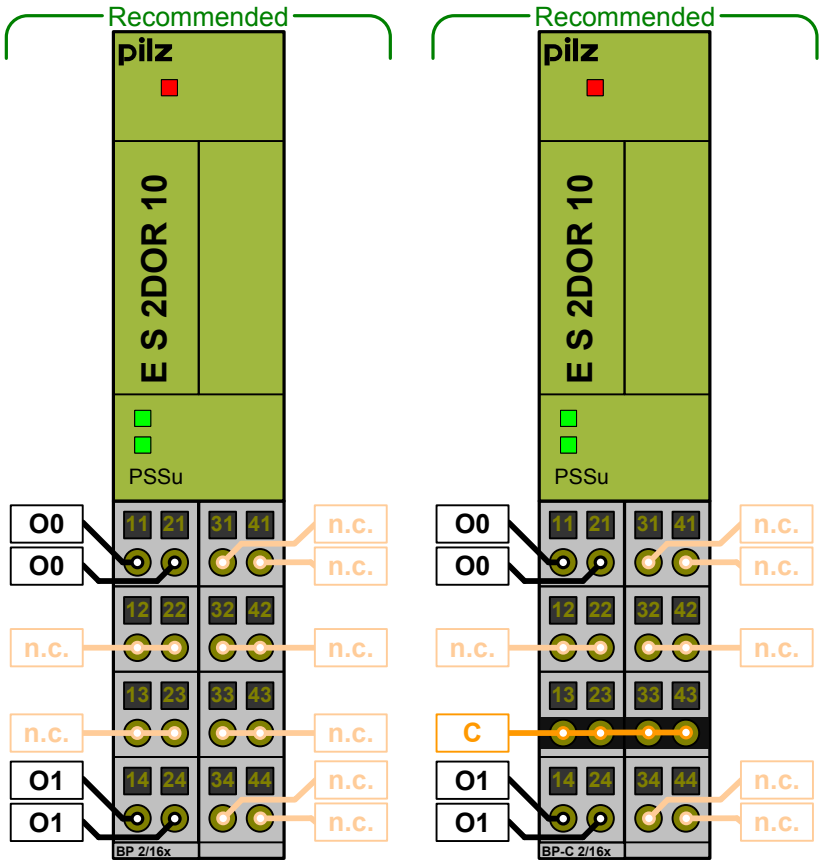








Operating Manual: 22047



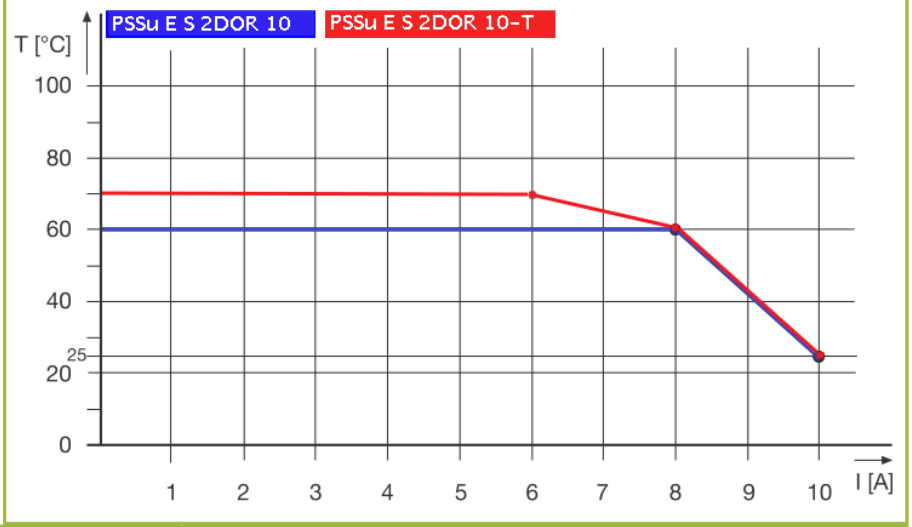
Standard electronic module

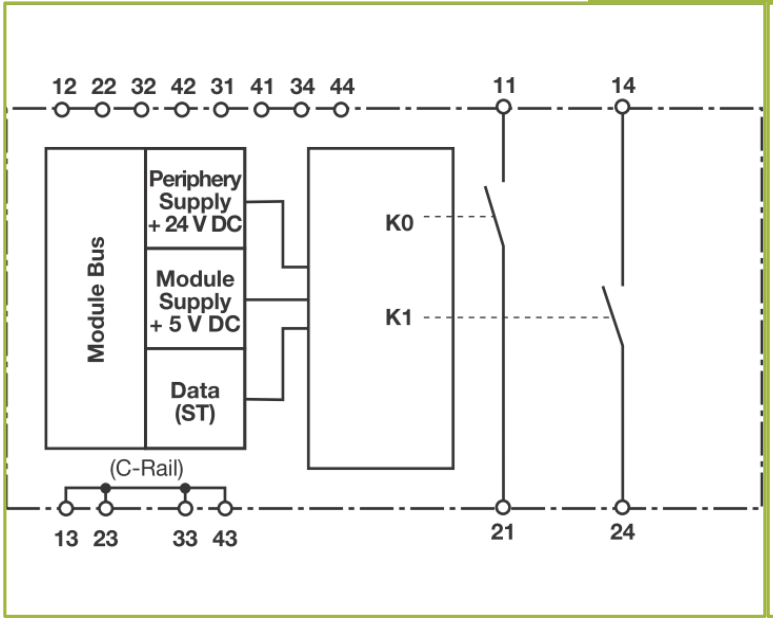
Module's device code: 0403h

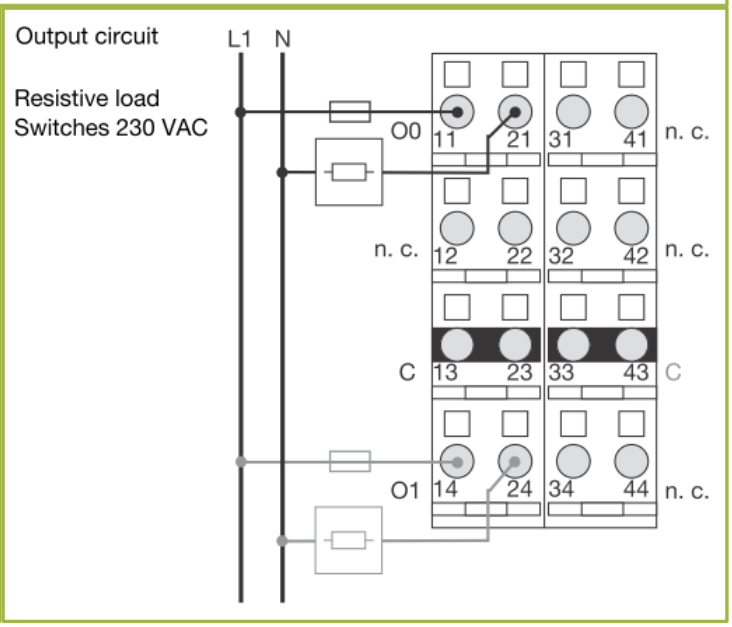
Digital ST outputs: 2 (relay)
Contact load: max. 10 A per output
(refer to switching capability and derating diagram!)
Periphery supply: 60 mA (without load)
Module supply: 19 mA
Addresses in the process image:
ST-PIO: 2 Bit

312510 PSSu E S 2DOR 10
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C
Coated version available (314xxx; '-T')
314511 PSSu E S 2DOR 10-T
314628 PSSu BP 2/16S-T
314629 PSSu BP 2/16C-T
314630 PSSu BP-C 2/16S-T
314631 PSSu BP-C 2/16C-T

Derating diagram: Permitted ambient temperature T dependent on load current I

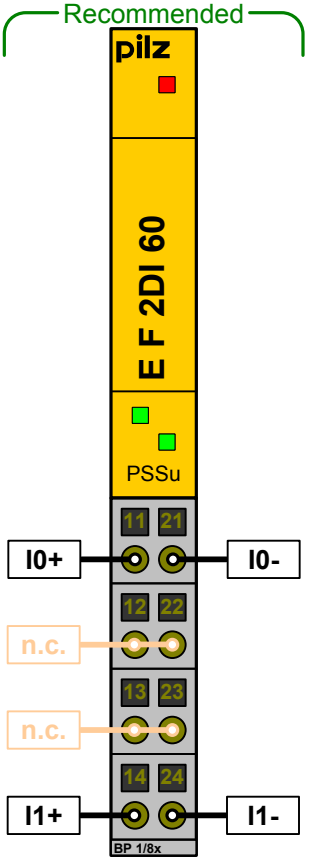




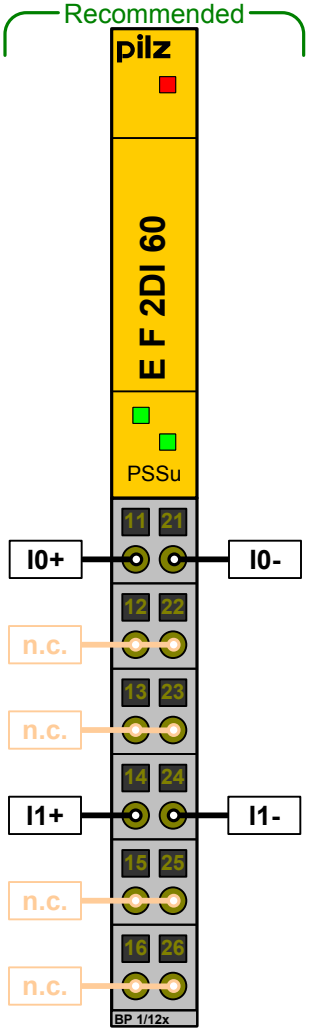


Operating Manual: 1002506

Recommended



Recommended



Failsafe electronic module

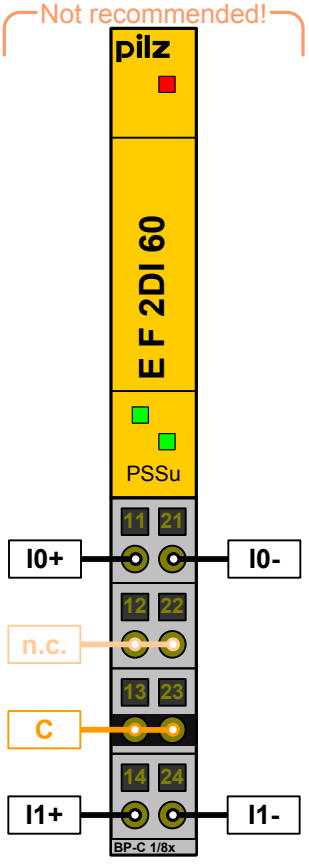
Module's device code: 0A01h
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3

Digital FS inputs: 2 (24..72 V)
Test pulse outputs: 0
Periphery supply: 0 mA (without load)
Module supply: 23 mA
Addresses in the process image:
FS-PII: 2 Bit

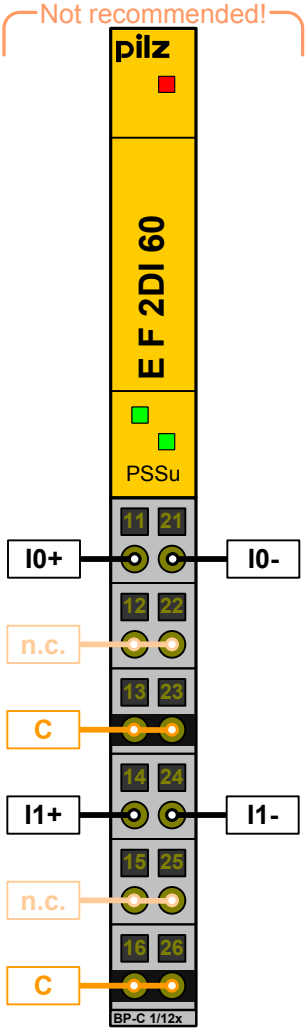
Railway version available (315xxx; '-R')
315201 PSSu E F 2DI 60-R
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

Please see Operating manual for wiring of Dual-channel input device.

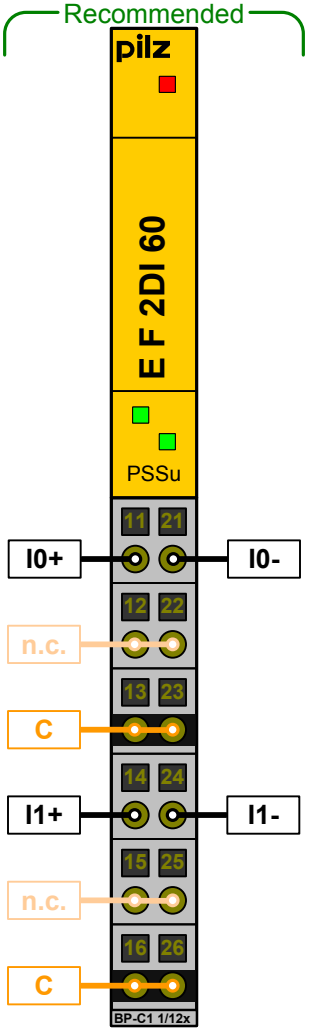
Not recommended!



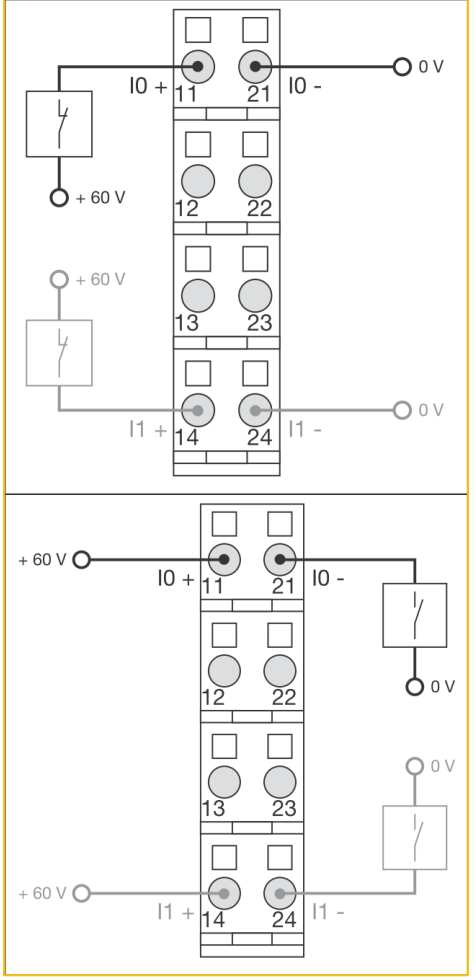
Not recommended!



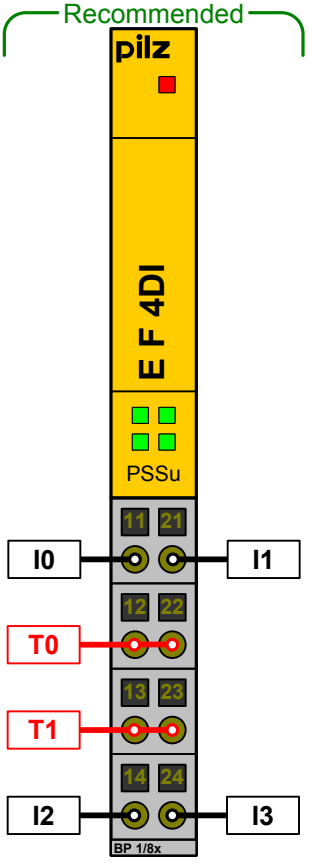
Recommended



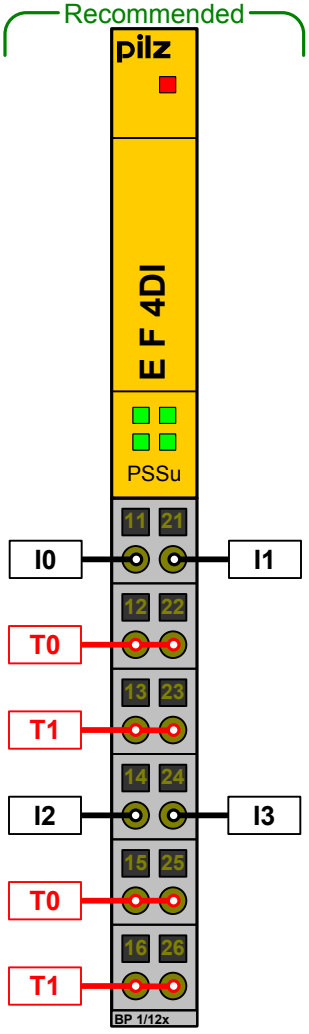
Single-channel input device



Recommended

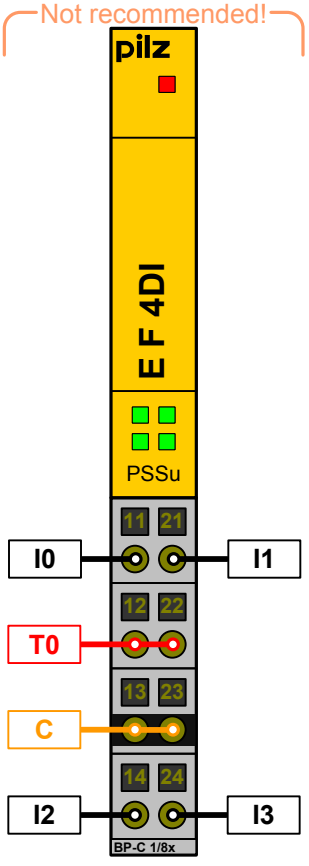


Recommended

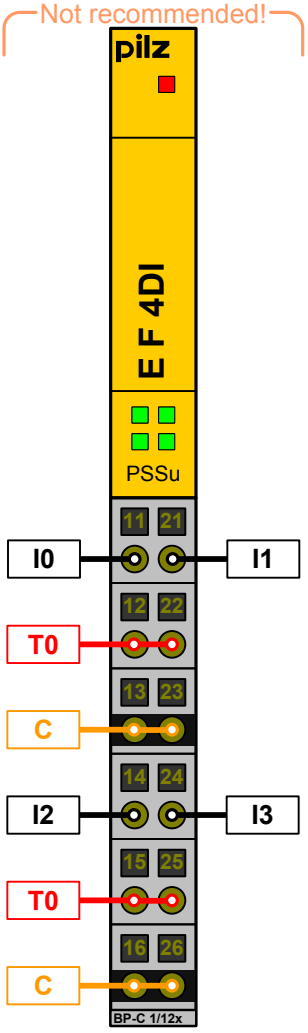


The ‚Not recommended!' combinations contain only first test pulse ‚**T0**'.

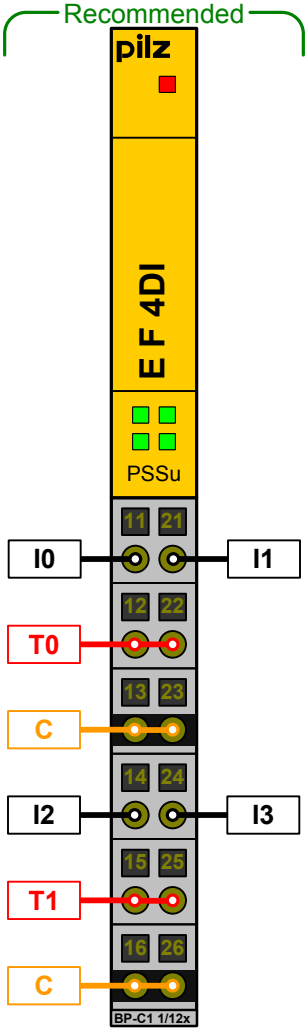
Not recommended!



Not recommended!

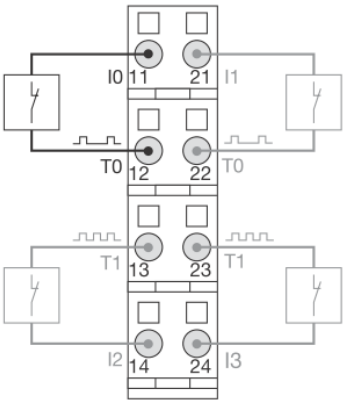


Recommended

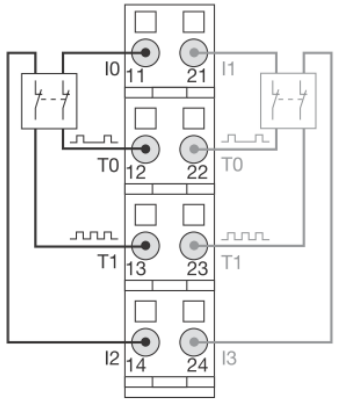



```
Failsafe electronic module
-------------------------------------------
Module's device code: 0A00h
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier :
                   PL e / SIL CL 3
-------------------------------------------
Digital FS inputs:  4
Test pulse outputs: 2 (T0, T1 configurable)
Load current, periphery supply:
   0.25 A per output (test pulse)
Periphery supply: 8 mA (without load)
Module supply: 30 mA
Addresses in the process image:
> System environment A (PSSu I/O)
  FS-PII: 4 Bit
  ST-PII: 4 Bit ("R" configuration)
> System environment B (PSS 4000)
  FS-PII: 4 Bit (Bit 0-3)
-------------------------------------------
312200 PSSu E F 4DI
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314200 PSSu E F 4DI-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T
        Railway version available
315200 PSSu E F 4DI-R
> Base modules like Coated version
-----------------------------------
```

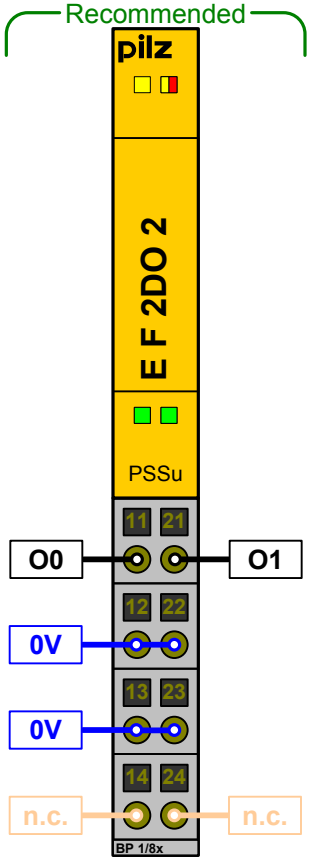
With test pulses (checked)

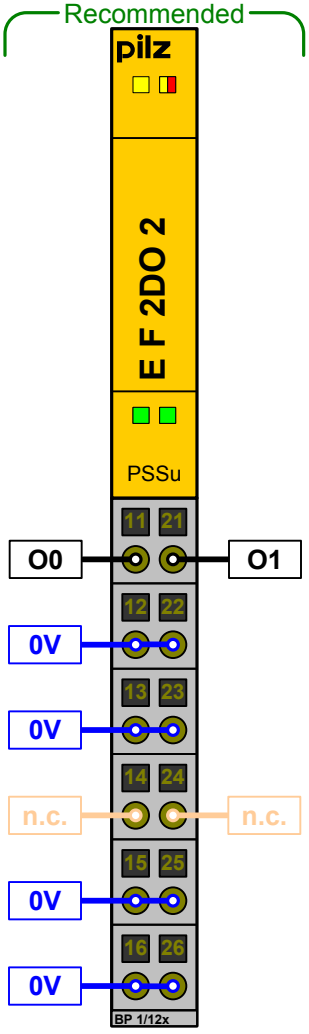


With test pulses (checked)
Input device with homogenous channels



Operating Manual: 21322



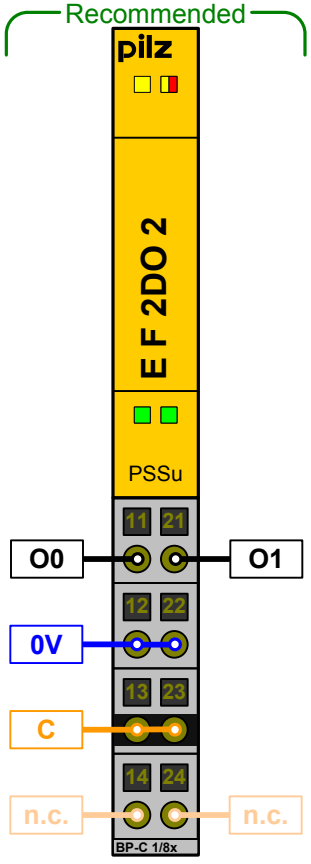


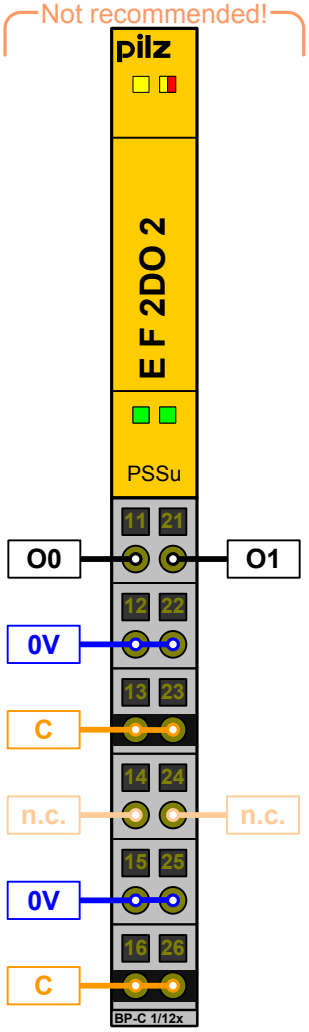
Failsafe electronic module

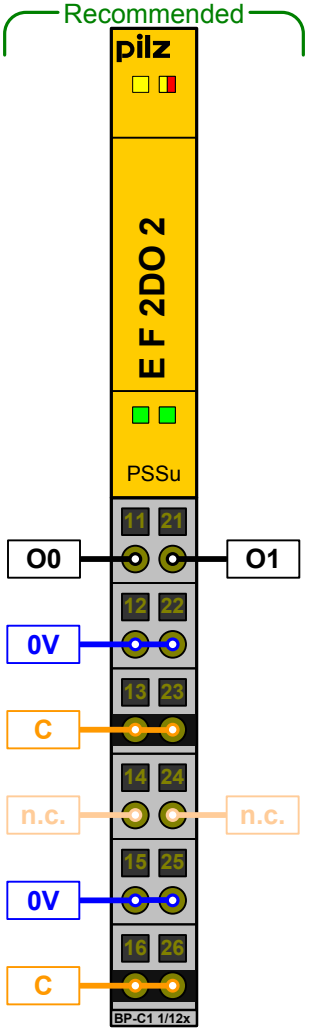
Module's device code: 0C00h
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3

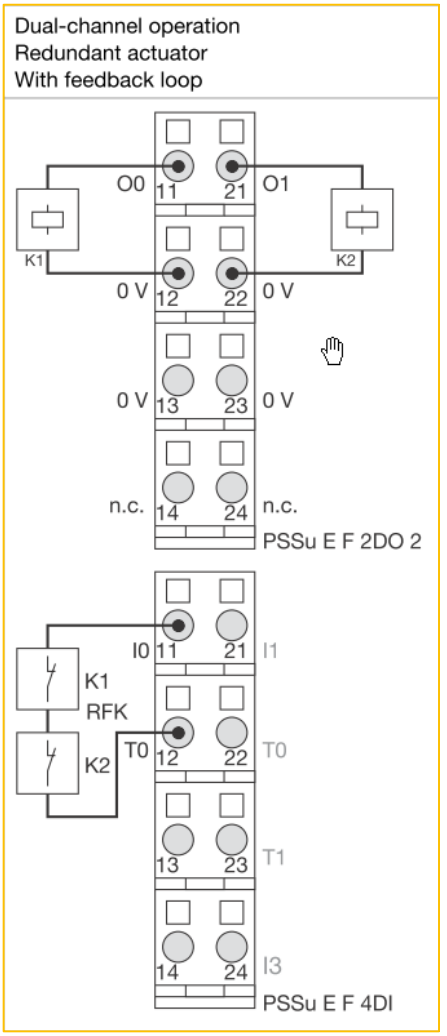
Digital FS outputs: 2 (single-pole)
Load current, periphery supply:
  2 A per output
Total current of outputs: 4 A/24 V DC
Periphery supply: 30 mA (without load)
Module supply: 45 mA
Addresses in the process image:
  FS-PIO: 2 Bit
  ST-PII: 2 Bit ("R" or "&" configuration)
  ST-PIO: 2 Bit ("&" configuration)

312215 PSSu E F 2DO 2
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314215 PSSu E F 2DO 2-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T ...
Railway version available (315xxx; '-R')
315215 PSSu E F 2DO 2-R



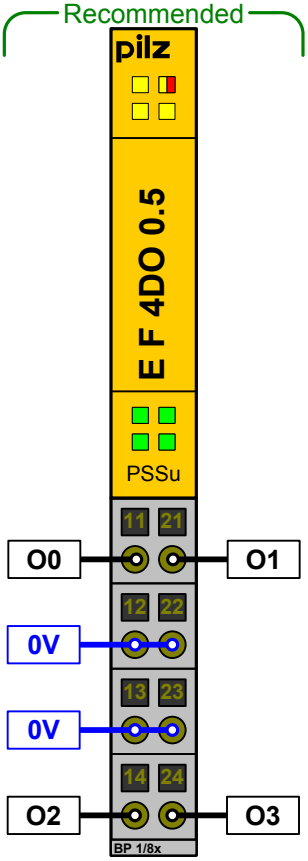




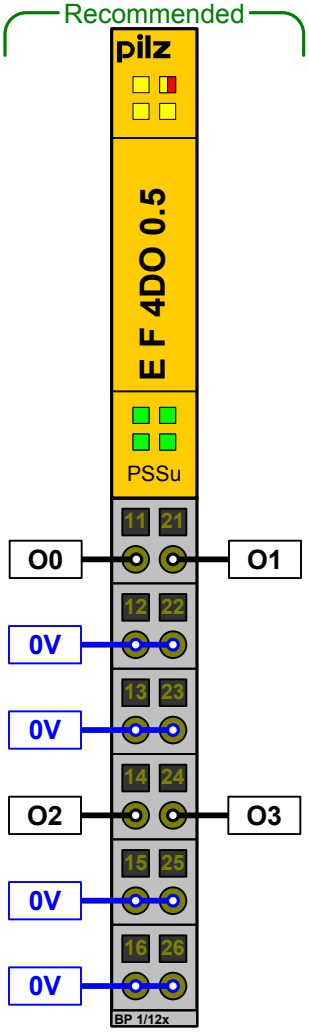


Operating Manual: 21316

Recommended



Recommended



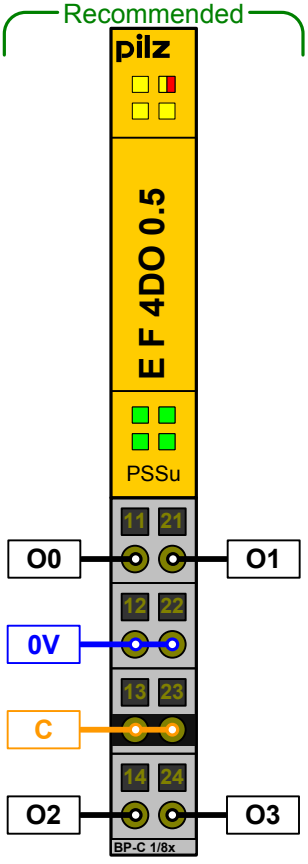
Failsafe electronic module

Module's device code: 0C01h
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3

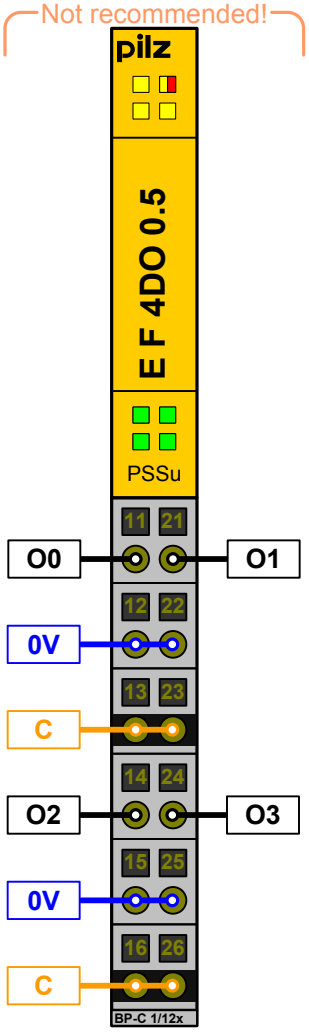
Digital FS outputs: 4 (single-pole)
Load current, periphery supply:
  0.5 A per output
Total current of outputs: 2 A/24 V DC
Periphery supply: 37 mA (without load)
Module supply: 56 mA
Addresses in the process image:
  FS-PIO: 4 Bit
  ST-PII: 4 Bit ("R" or "&" configuration)
  ST-PIO: 4 Bit ("&" configuration)

312210 PSSu E F 4DO 0.5
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314210 PSSu E F 4DO 0.5-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T
Railway version available (315xxx; '-R')
315210 PSSu E F 4DO 0.5-R

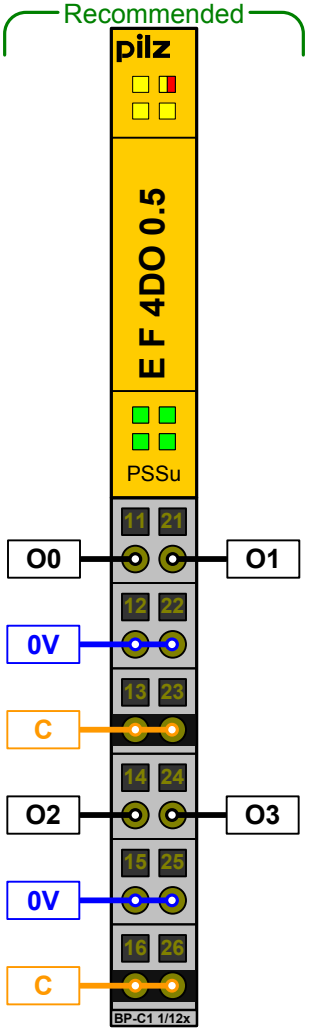
Recommended



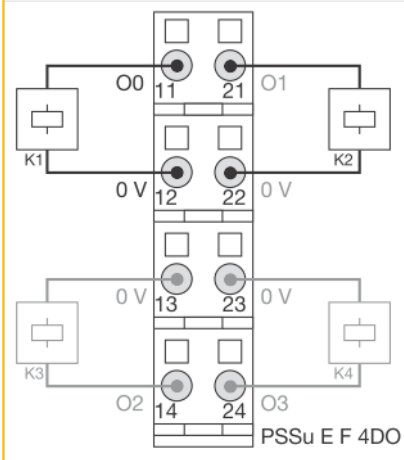
Not recommended!

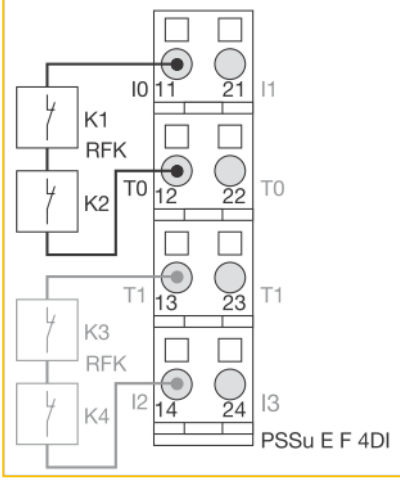


Recommended

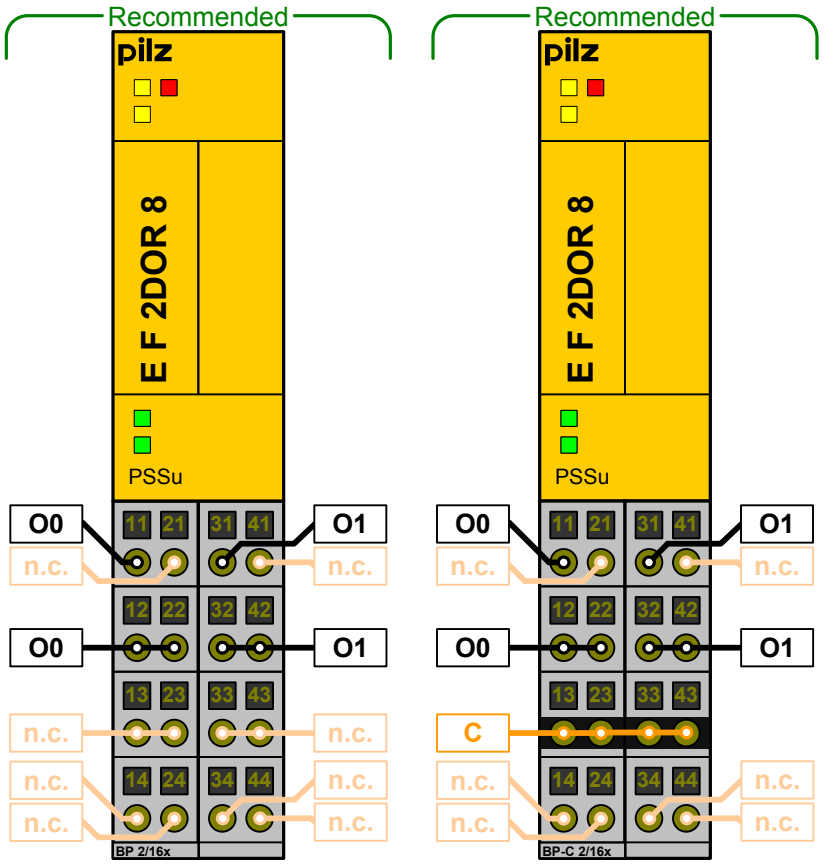


Dual-channel operation
Redundant actuator
With feedback loop





Operating Manual: 21334

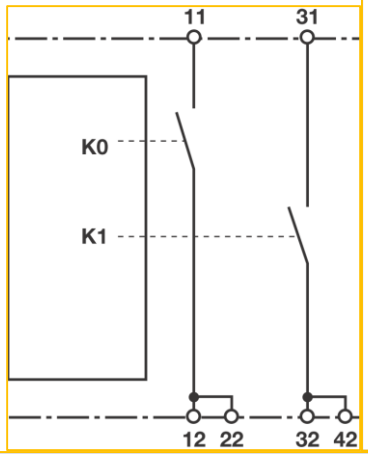


Failsafe electronic module

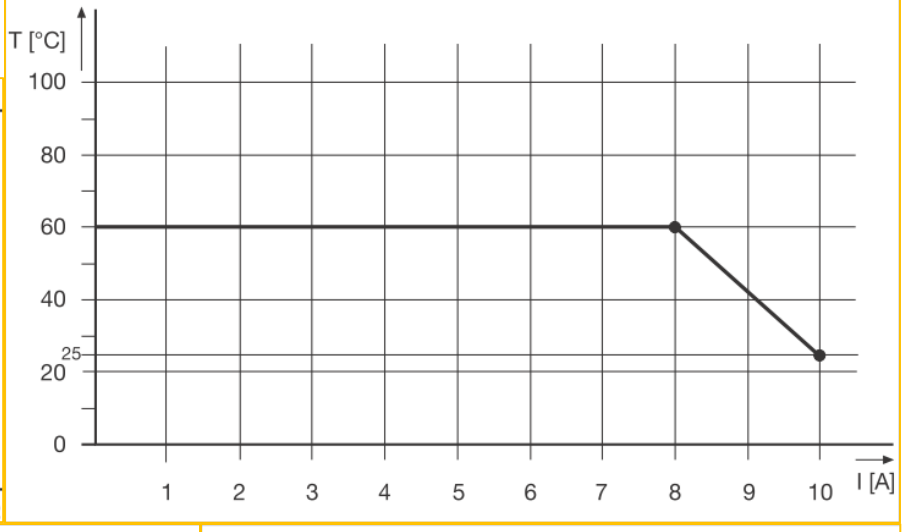
Module's device code: 0C03h
1-channel (up to): PL c / SIL -
2-channel (up to): PL e / SIL CL 3

Digital FS outputs: 2 (relay)
Contact load: max. 10 A per output
(refer to switching capability and derating diagram!)
Periphery supply: 60 mA (without load)
Module supply: 40 mA
Addresses in the process image:
FS-PIO: 2 Bit
ST-PII: 2 Bit {"R" or "&" configuration}
ST-PIO: 2 Bit {"&" configuration}

312225 PSSu E F 2DOR 8
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C
Coated version available (314xxx; '-T')
314225 PSSu E F 2DOR 8-T
314628 PSSu BP 2/16S-T
314629 PSSu BP 2/16C-T
314630 PSSu BP-C 2/16S-T
314631 PSSu BP-C 2/16C-T
Railway version available (315xxx; '-R')
315225 PSSu E F 2DOR 8-R

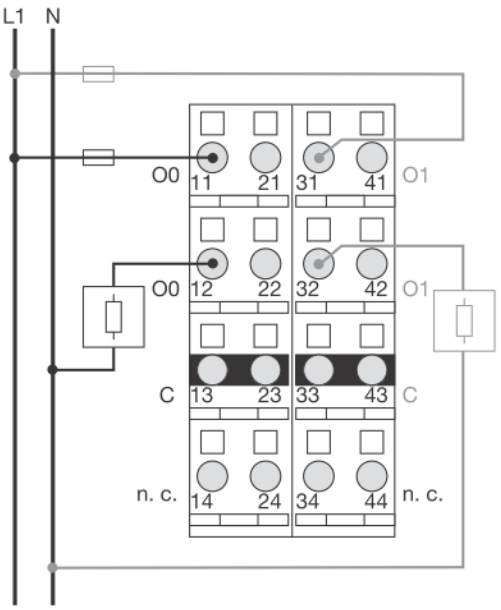


Derating diagram: Permitted ambient temperature T dependent on load current I



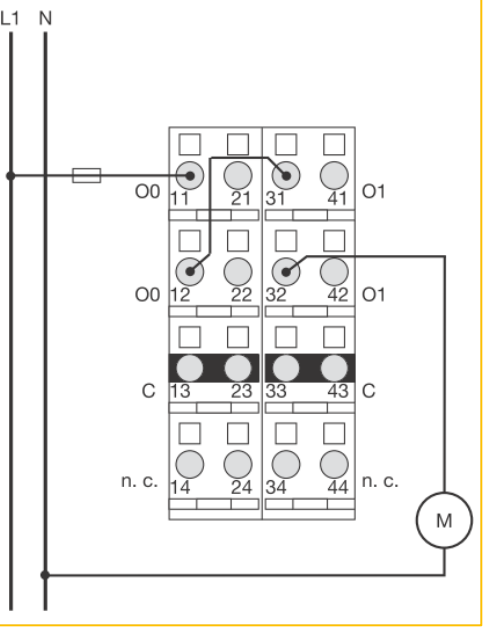
Output circuit

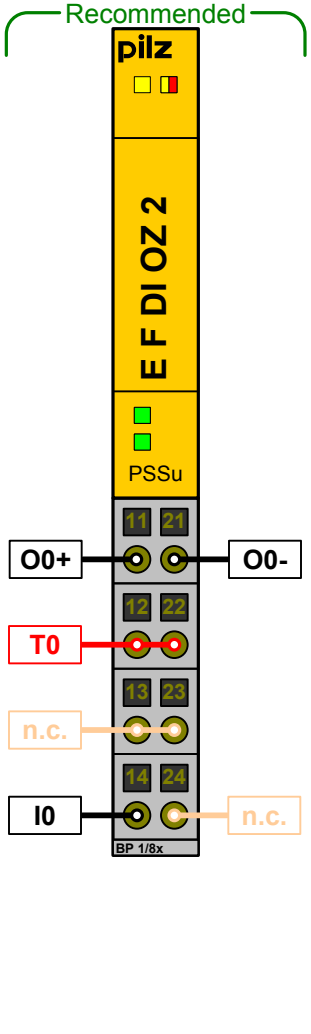
Single-channel actuator
Switches 230 VAC

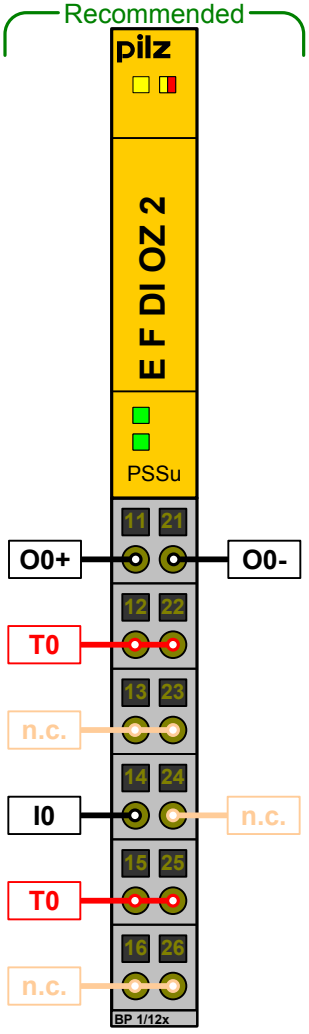


Output circuit

Dual-channel actuator
Switches 230 VAC





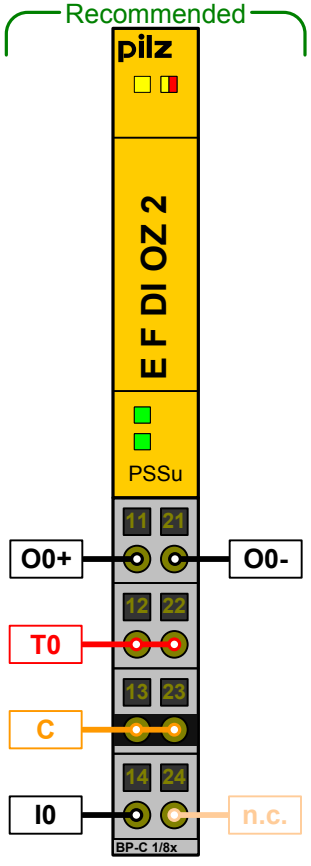


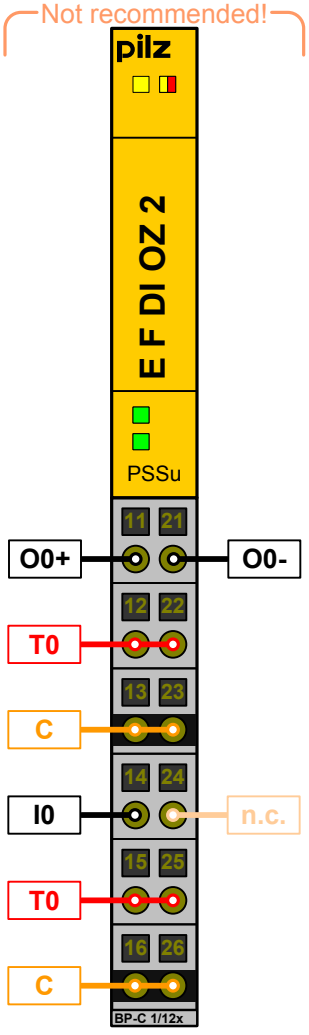
Failsafe electronic module

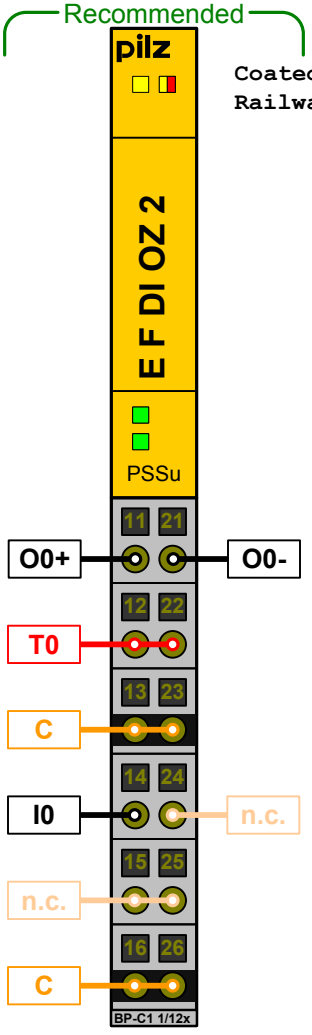
Module's device code: 0E00h
Maximum number of modules per system: 16|64
Digital inputs:
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier :
PL e / SIL CL 3
SC outputs (dual pole):
2-channel (up to): PL e / SIL CL 3

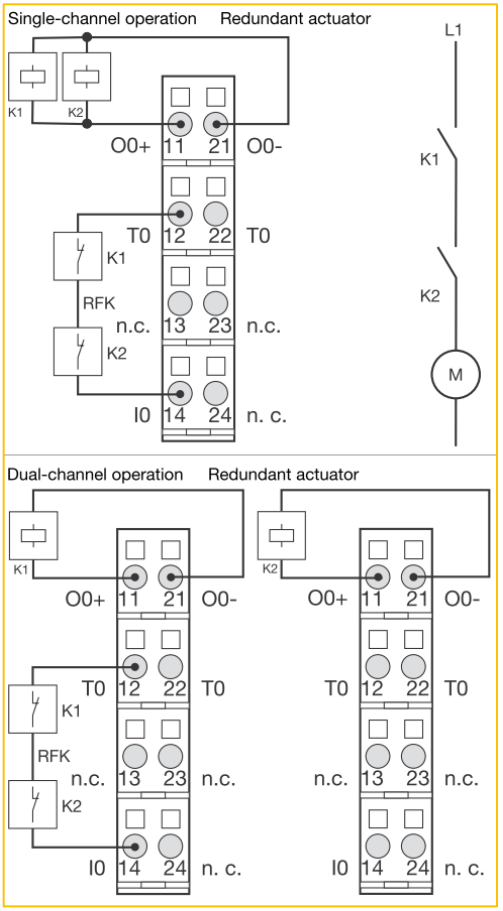
Digital FS input: 1 (plus 1 virtual =2)
Test pulse output: 1 (configurable)
Digital FS output: 1 (dual-pole)
Load current, periphery supply:
0.2 A per output (test pulse)
2.0 A per output (dual-pole)
Periphery supply: 28 mA (without load)
Module supply: 30 mA
Addresses in the process image - Inputs:
FS-PII: 2 Bit
(FS input and open circuit detection)
ST-PII: 2 Bit
(FS input and open circuit detection,
"R" configuration)
Addresses in the process image - Output:
FS-PIO: 1 Bit
ST-PII: 1 Bit ("R" or "&" configuration)
ST-PIO: 1 Bit ("&" configuration)

312220 PSSu E F DI OZ 2
312600 PSSu BP 1/8S ; 312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312622 PSSu BP-C1 1/12 S
312623 PSSu BP-C1 1/12 C
Coated version available (314xxx; '-T')
Railway version available (315xxx; '-R')



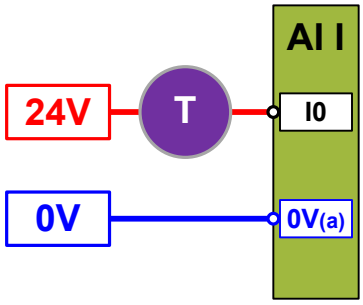


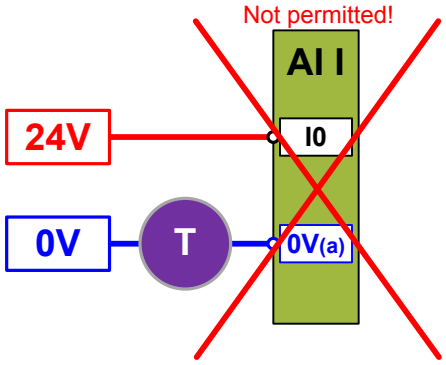




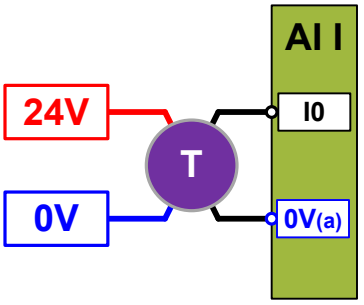
Please read the user manual of your transmitter first!

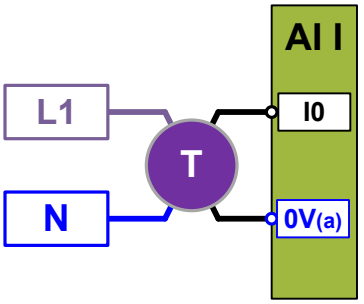
Passive transmitter, 2-wire, ST



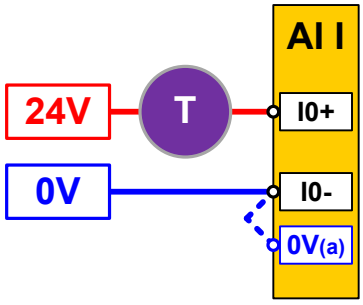


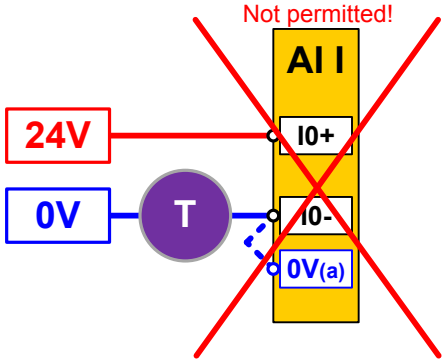
Active transmitter, 4-wire, ST



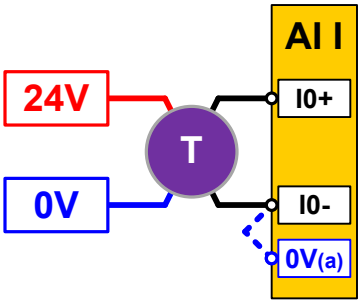


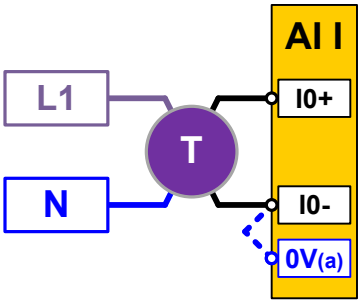
Passive transmitter, 2-wire, FS





Active transmitter, 4-wire, FS

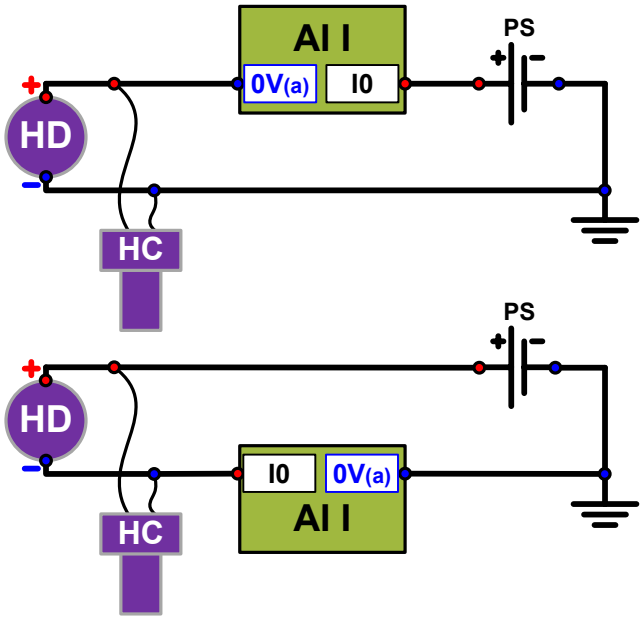




AI I .. Analogue Input Current
T .. Transmitter

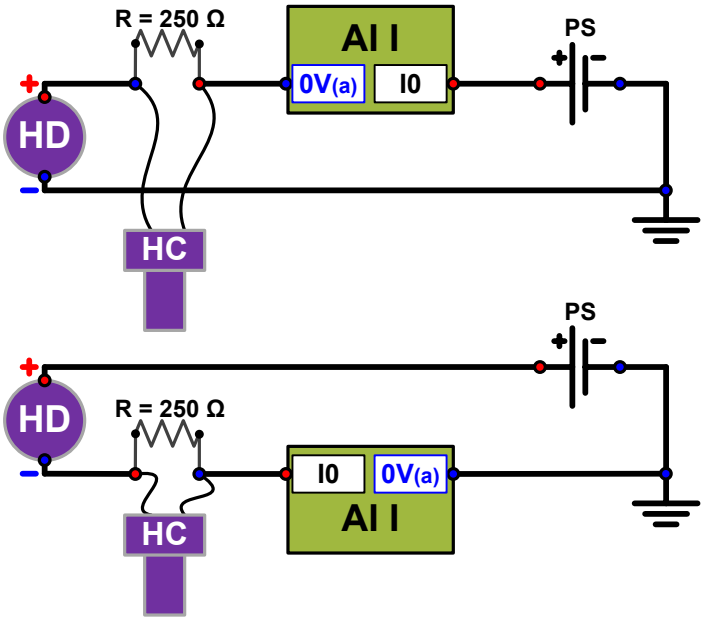
Please read the user manual of your field communicator first!

Ohm resistance RL ≥ 250 Ω, ST

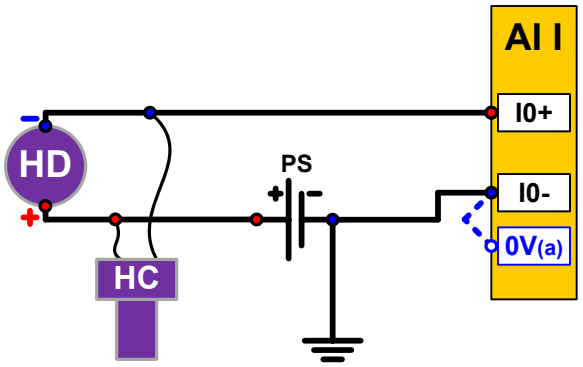


Ohm resistance RL < 250 Ω, ST

Together with HC installed load resistance R (optional).

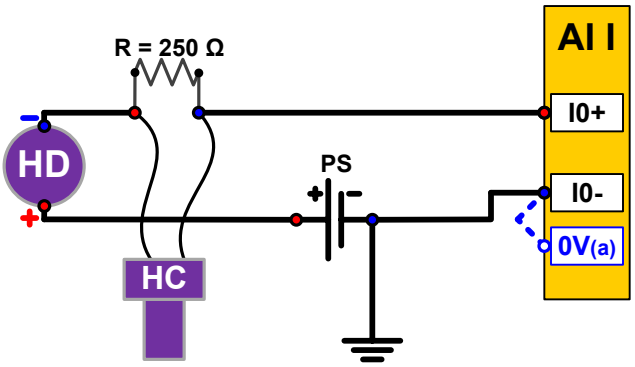


Ohm resistance RL ≥ 250 Ω, FS



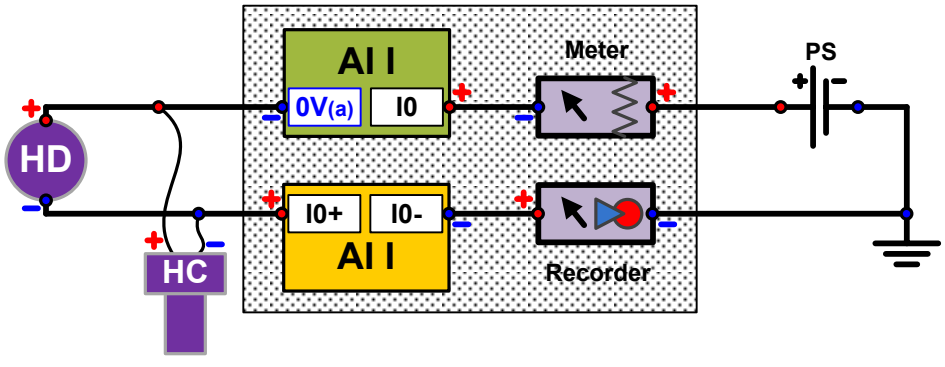
Ohm resistance RL < 250 Ω, FS

Together with HC installed load resistance R (optional).

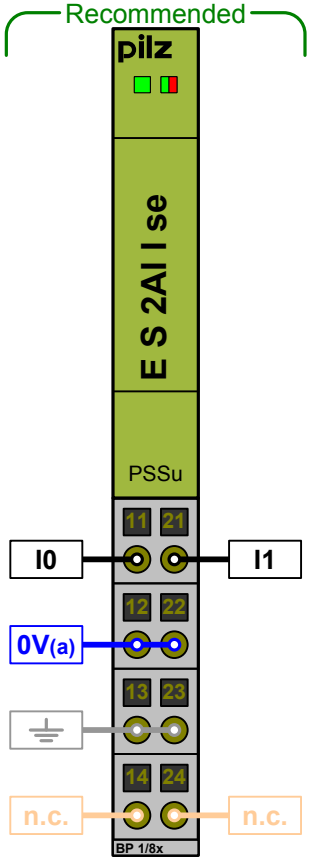


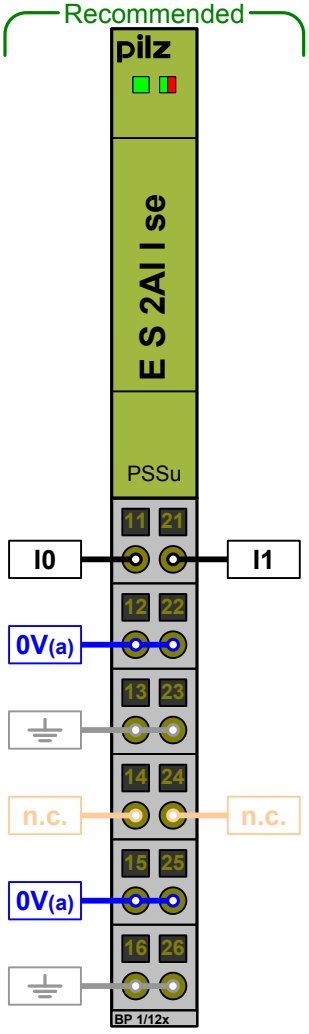
Voltage potentials in measure circuit (loop), Ohm resistance RL ≥ 250 Ω, FS/ST

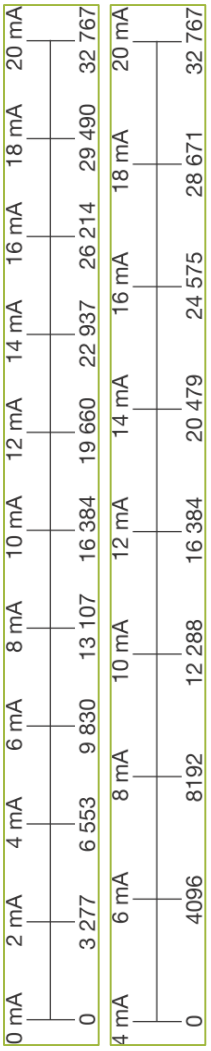
In the selected field ⬚, individual or all mechatronic devices can be omitted.



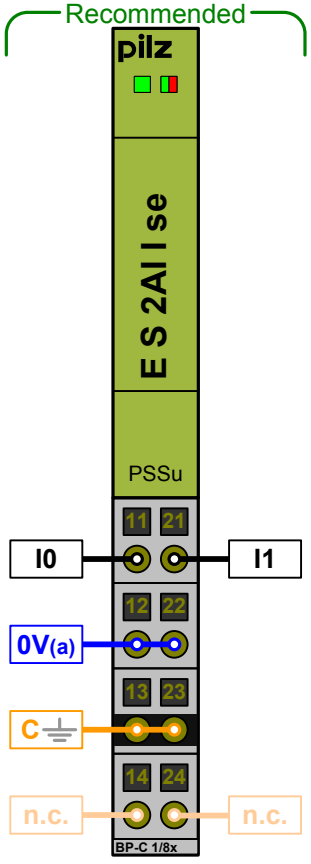
AI I .. Analogue Input Current
HC .. HART Communicator
HD .. HART Device (e.g. Transmitter)
PS .. Power Supply 24V DC
RL .. Total resistance of the HART loop

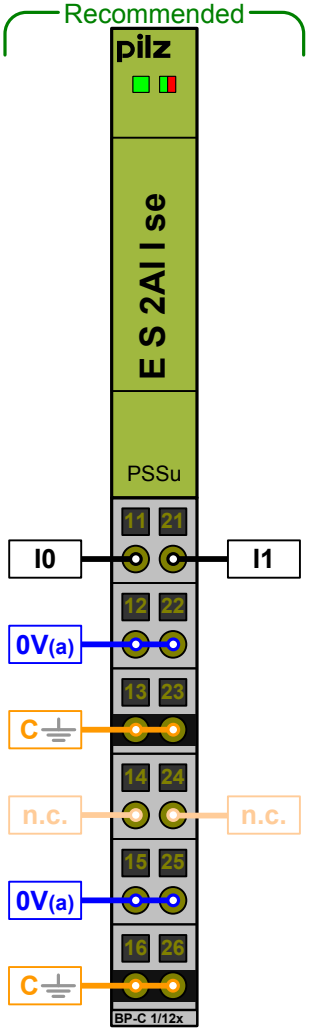


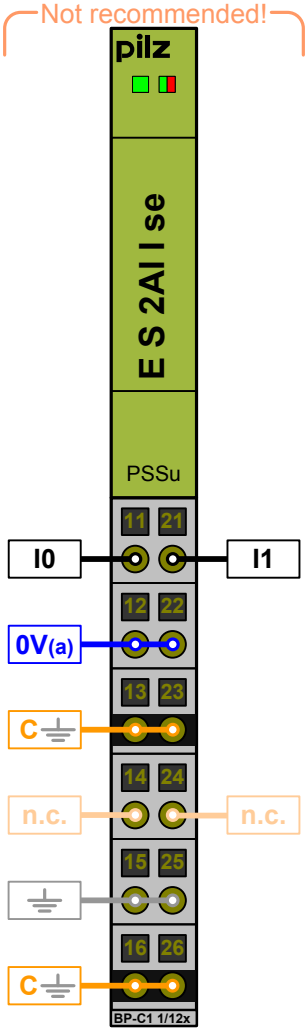


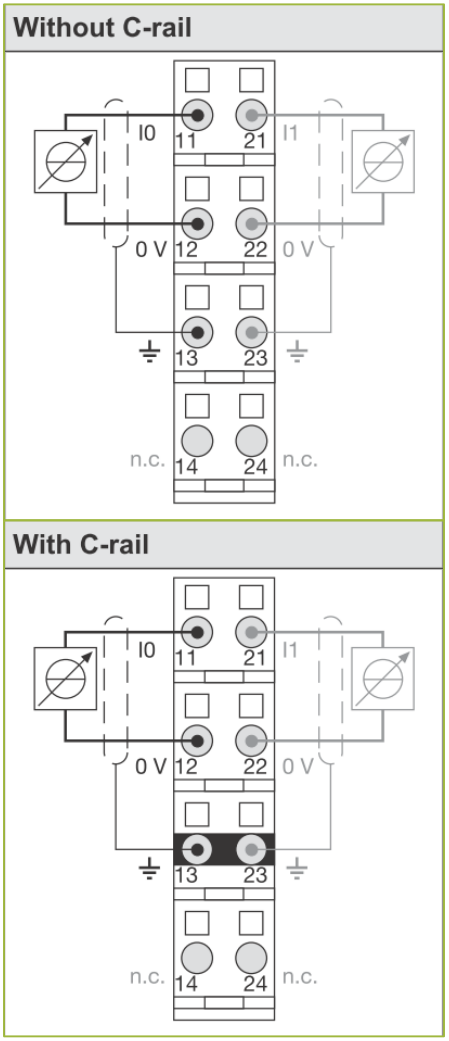


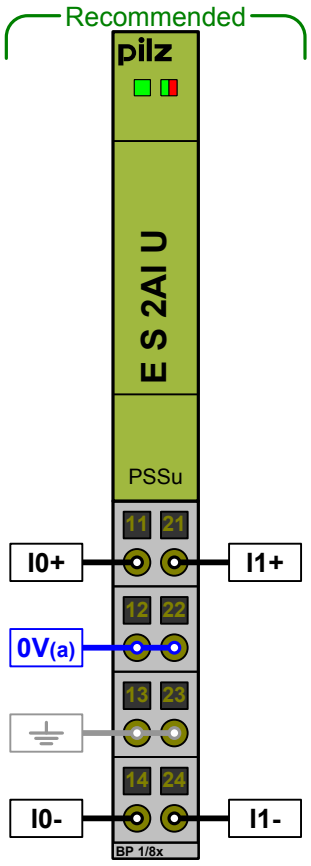

```
Standard electronic module
-------------------------------------------
Module's device code: 0310h
-------------------------------------------
Analogue ST inputs: 2
Type of inputs: Current
Range (configurable): 0..20 mA, 4..20 mA
Resolution: 12 Bit
Max. continuous current: 35 mA
Input resistance: 115 Ohm
Periphery supply: 10 mA (without load)
Module supply: 43 mA
Addresses in the process image:
  ST- PII: 2 x 16 (32) Bit measured values
           2 x  8 (16) Bit input status
-------------------------------------------
312450 PSSu E S 2AI I se
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314450 PSSu E S 2AI I se-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T ...
-------------------------------------------
```

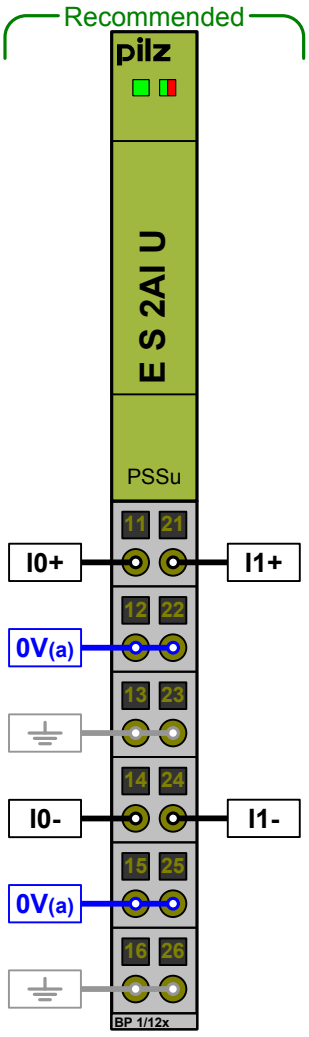


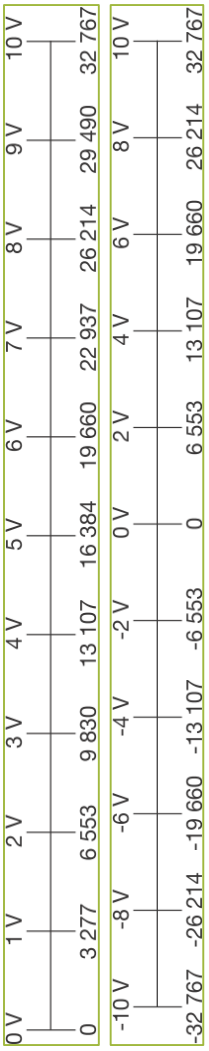




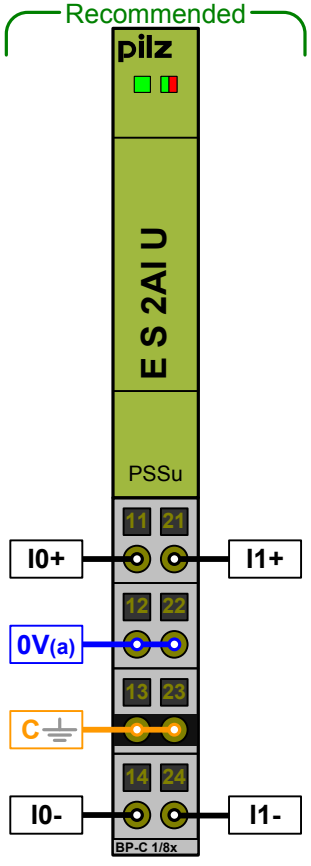


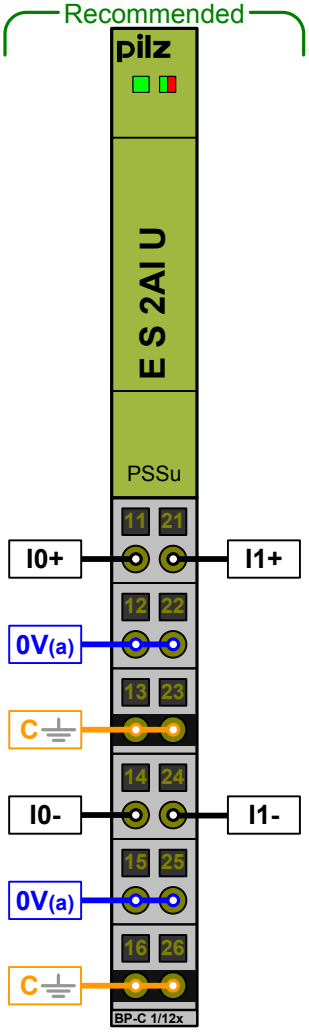


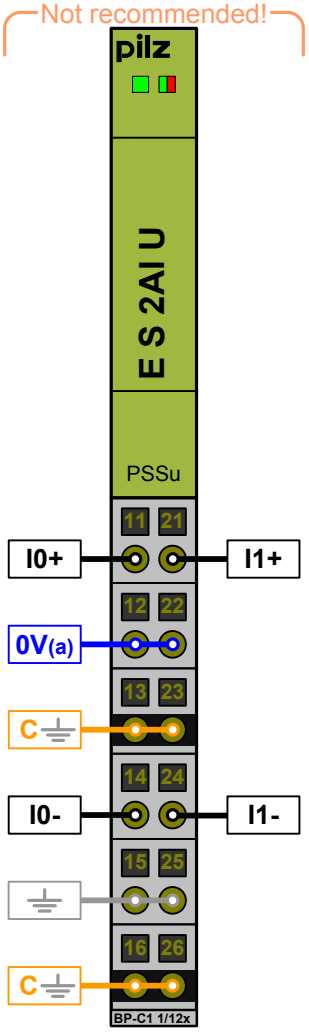


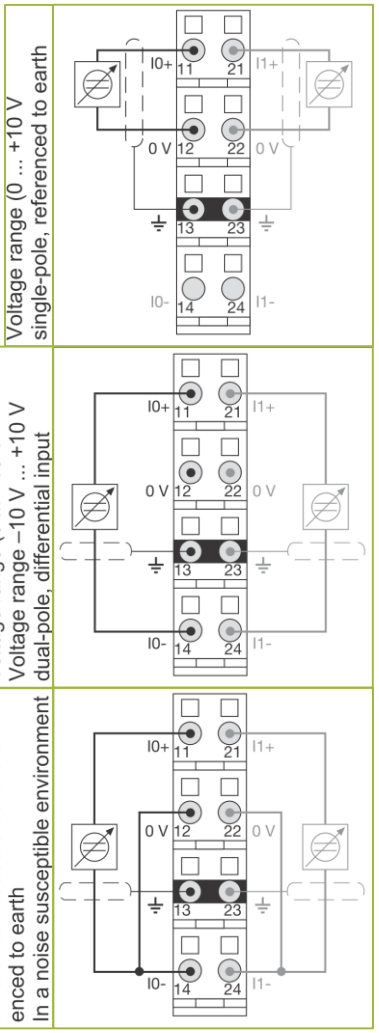



```
Standard electronic module
-------------------------------------------
Module's device code: 0300h
-------------------------------------------
Analogue ST inputs: 2
Type of inputs: Voltage
Range (configurable):
  0..+10 V, single-pole,
            input referenced to earth
  0..+10 V, dual-pole, differential input
  -10..+10 V, dual-pole, differential input
Resolution: 12 Bit
Max. continuous voltage: 12 V
Max. common mode voltage: 5 V
Input resistance: 100 kOhm
Periphery supply: 10 mA (without load)
Module supply: 43 mA
Addresses in the process image:
  ST-PII: 2 x 16 (32) Bit measured values,
          2 x  8 (16) Bit input status
-------------------------------------------
312440 PSSu E S 2AI U
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314440 PSSu E S 2AI U-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T ...
-------------------------------------------
```

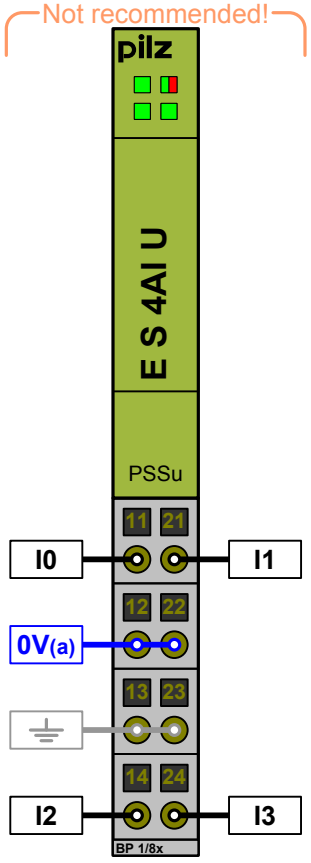




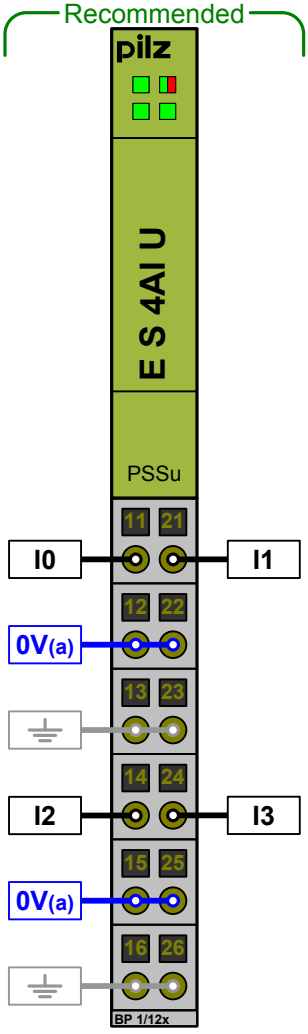


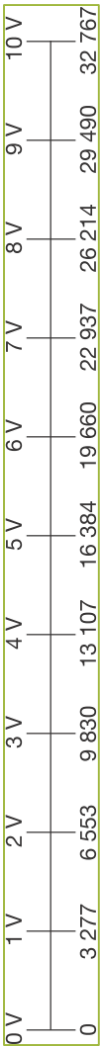


Not recommended!



Recommended





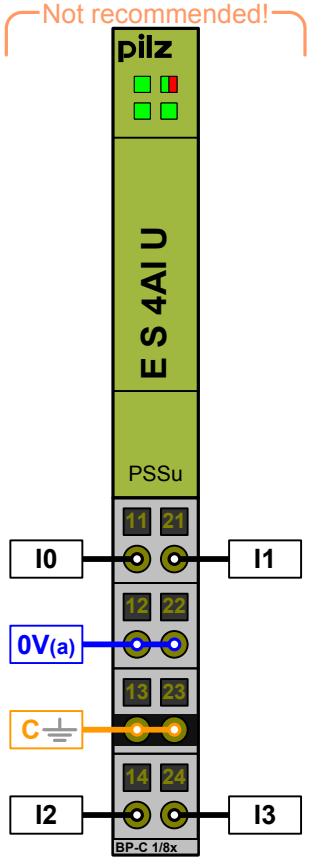
Standard electronic module

Module's device code: 0301h

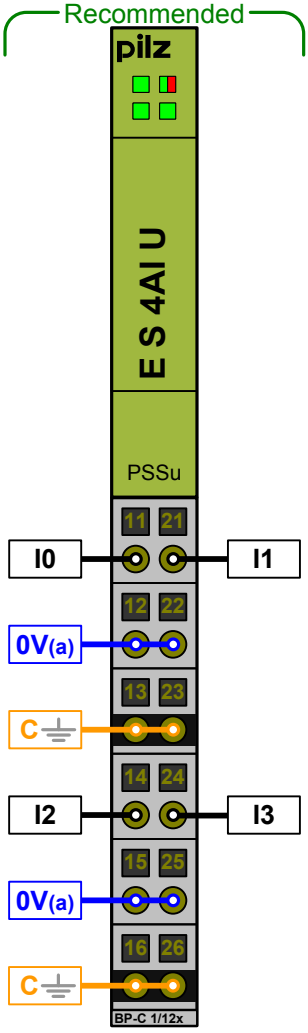
Analogue ST inputs: 4
Type of inputs: Voltage
Range (configurable):
  0..+10 V, single-pole,
  input referenced to earth
Resolution: 12 Bit
Max. continuous voltage: 12 V
Max. common mode voltage: 5 V
Input resistance: 100 kOhm
Periphery supply: 10 mA (without load)
Module supply: 53 mA
Addresses in the process image:
  ST-PII: 4 x 16 (64) Bit measured values,
  4 x 8 (32) Bit input status

312445 PSSu E S 2AI U
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314445 PSSu E S 2AI U-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T ...

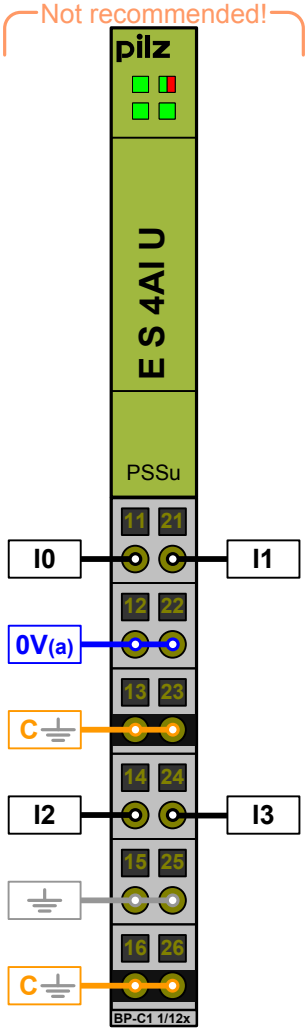
Not recommended!



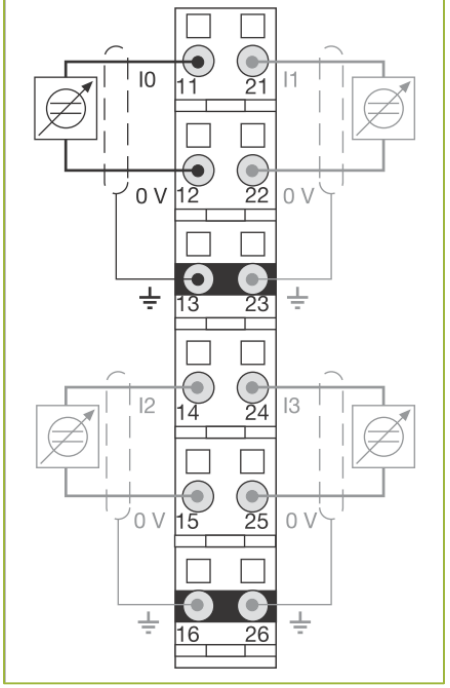
Recommended

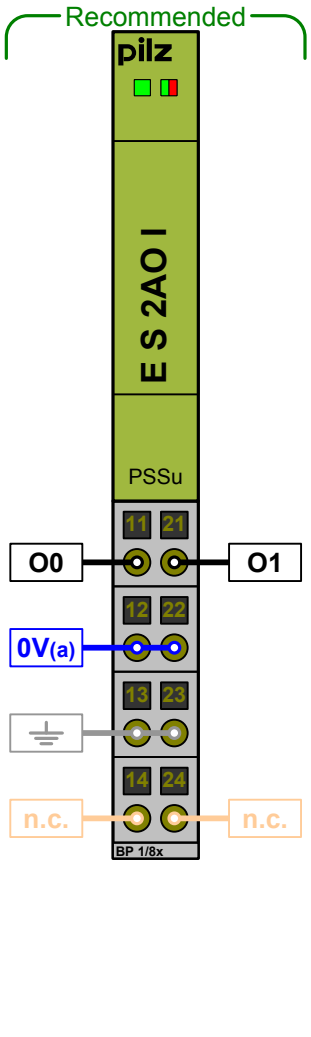


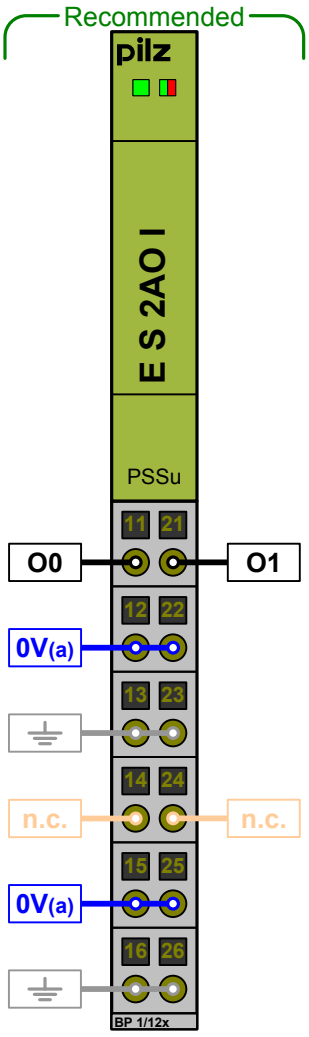
Not recommended!

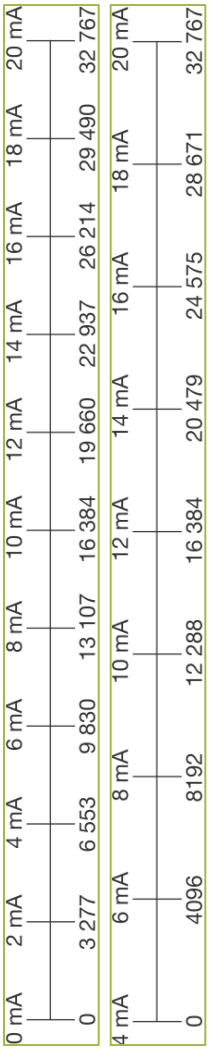


Voltage range (0 ... +10 V
single-pole, referenced to earth

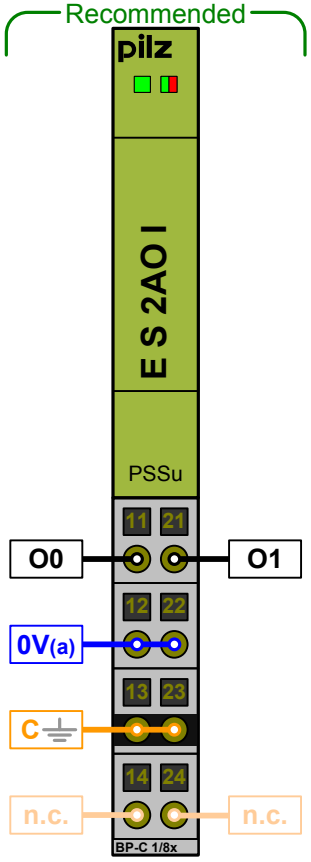


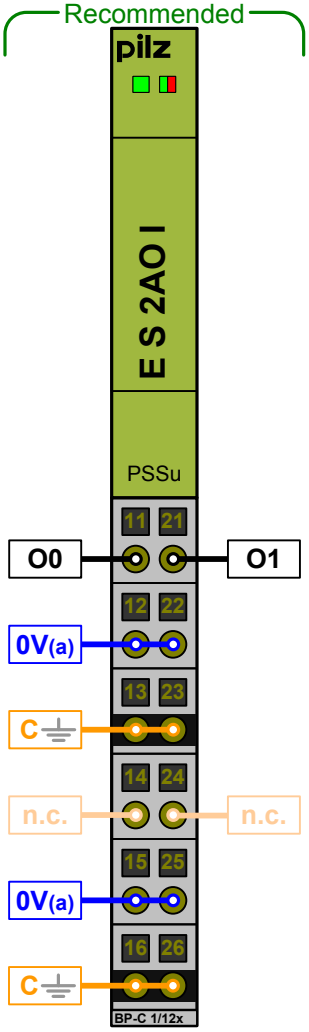


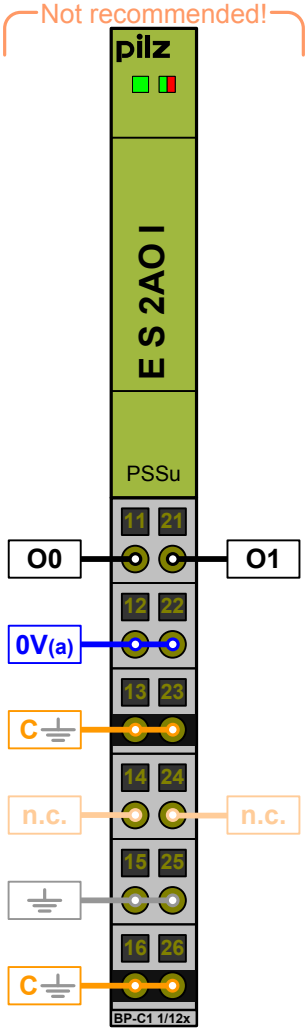


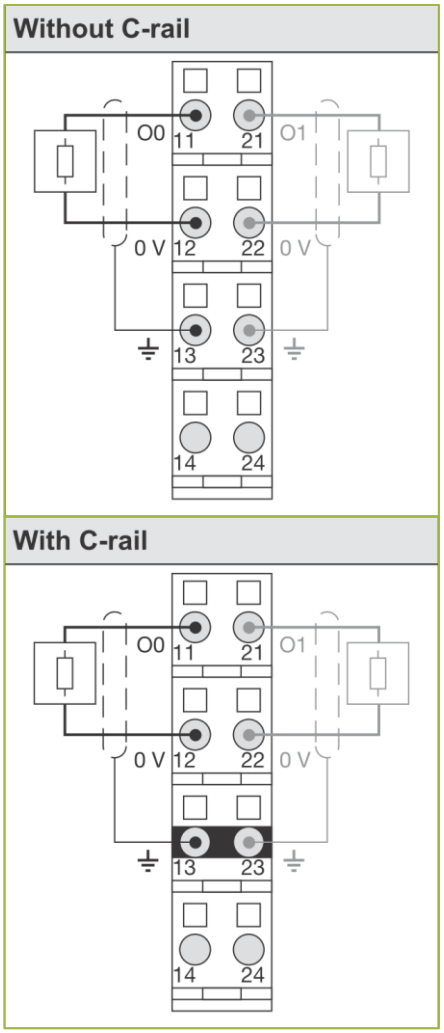


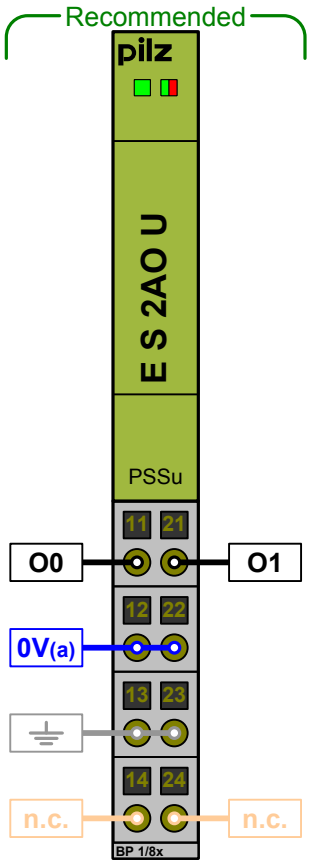

```
Standard electronic module
-------------------------------------------
Module's device code: 0510h
-------------------------------------------
Analogue ST outputs: 2
Type of outputs: Current
Range (configurable):
  0..20 mA, 4..20 mA,
  single-pole, output referenced to earth
Resolution: 12 Bit
Permitted loads: inductive, resistive
Max. permitted resistive load: 500 Ohm
Max. open circuit voltage: 14 V
Periphery supply: 54 mA (without load)
Module supply: 43 mA
Addresses in the process image:
  ST-PIO:  2 x 16 (32) Bit output values
-------------------------------------------
312470 PSSu E S 2AO I
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314470 PSSu E S 2AO I-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T ...
-------------------------------------------
```

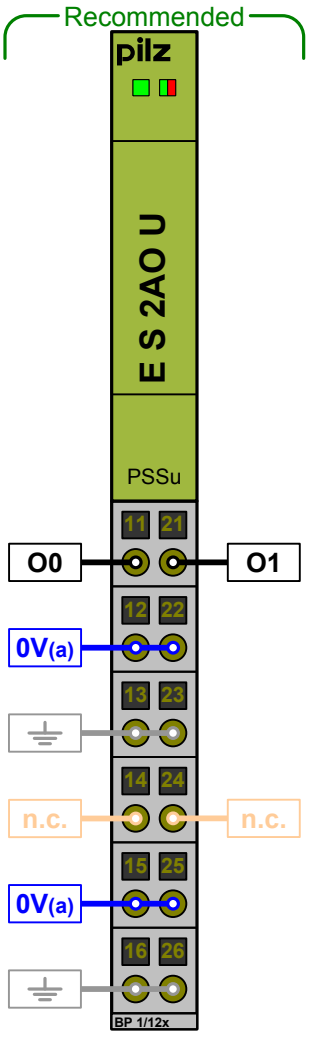


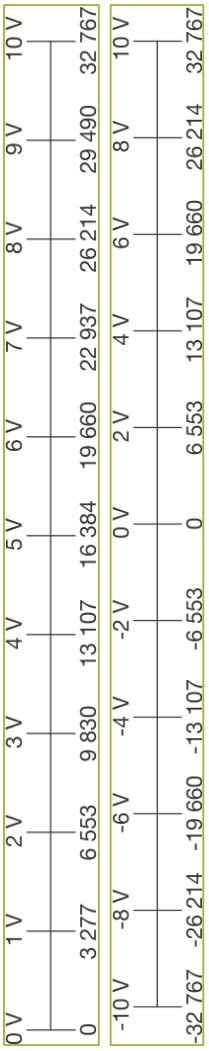










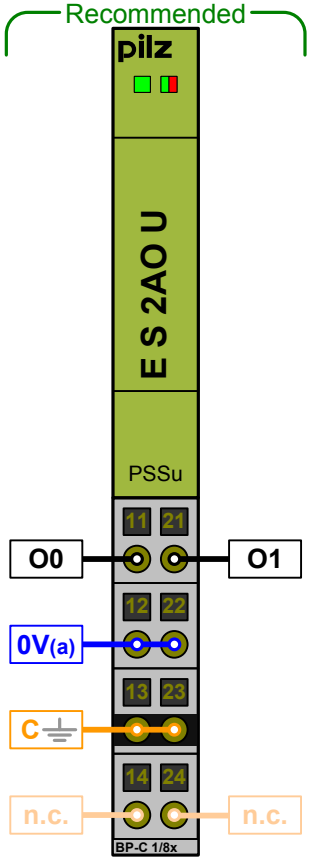


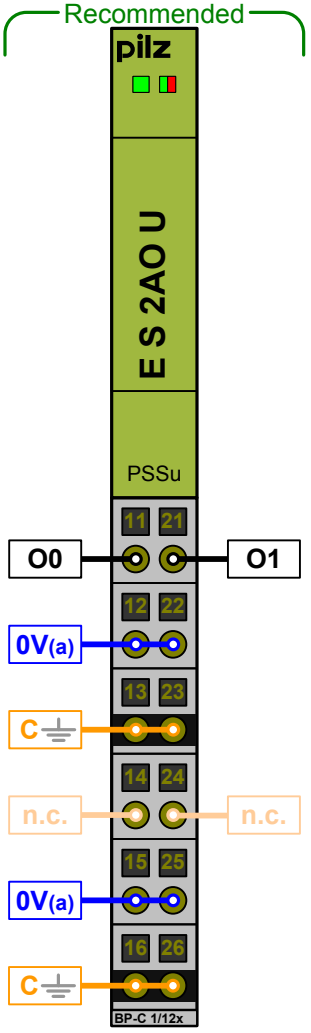
Standard electronic module

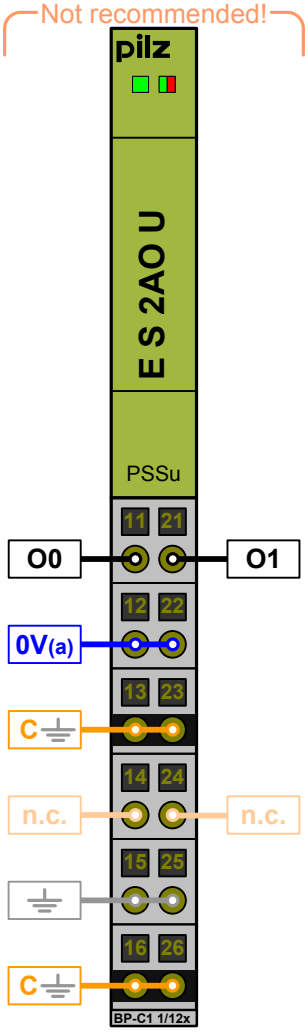
Module's device code: 0500h

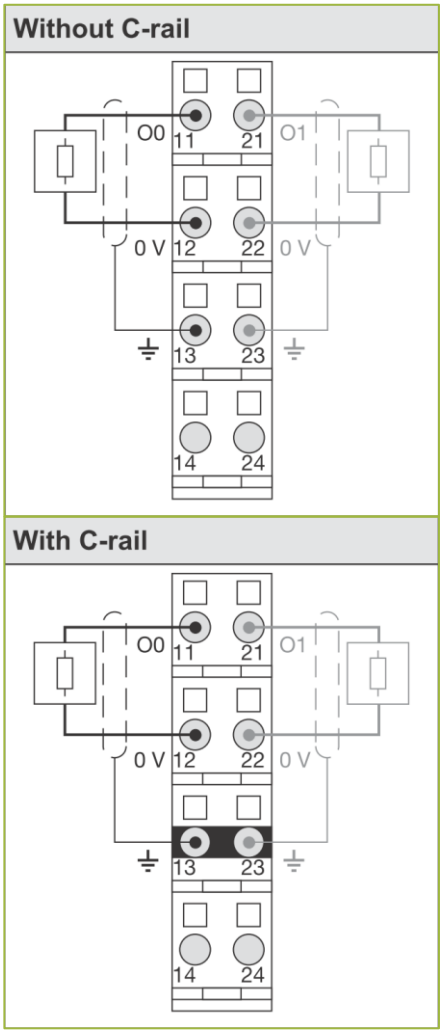
Analogue ST outputs: 2
Type of outputs: Voltage
Range (configurable):
0..+10 V, -10..+10 V,
single-pole, output referenced to earth
Resolution: 12 Bit
Permitted loads: capacitive, resistive
Min. permitted resistive load: 5 kOhm
Max. short circuit current: 25 mA
Periphery supply: 10 mA (without load)
Module supply: 43 mA
Addresses in the process image:
ST-PIO: 2 x 16 (32) Bit output values

312460 PSSu E S 2AO U
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314460 PSSu E S 2AO U-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T ...









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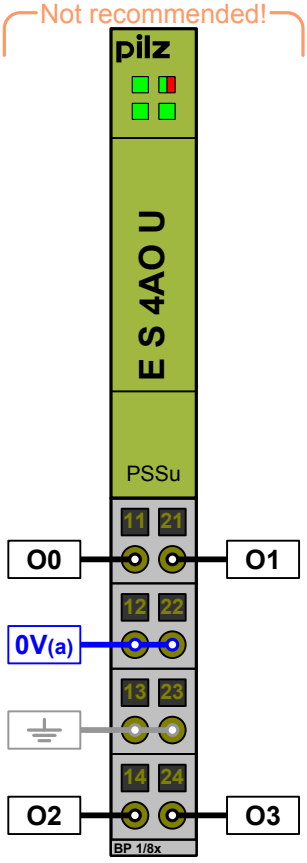
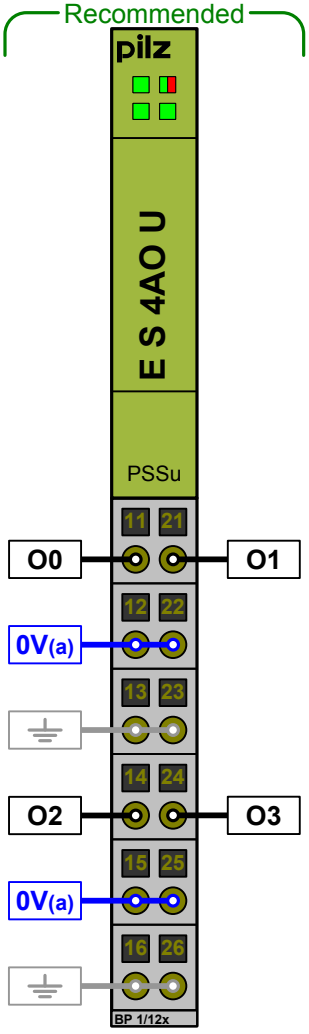
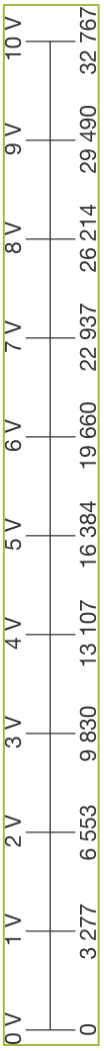
Not recommended!



Recommended





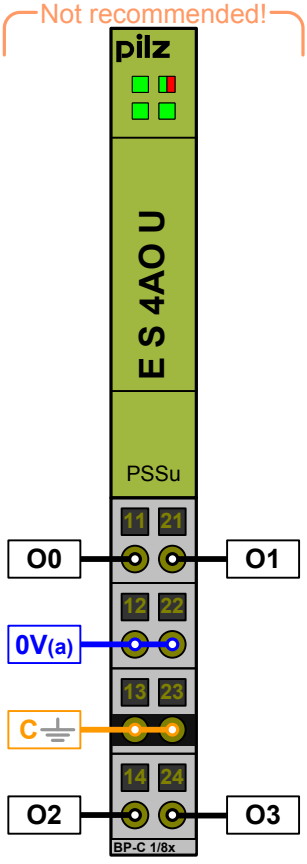
Standard electronic module

Module's device code: 0501h

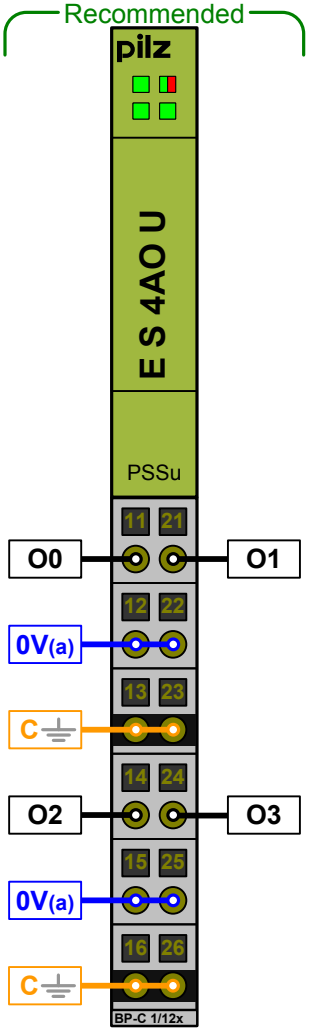
Analogue ST outputs: 4
Type of outputs: Voltage
Range (configurable):
  0..+10 V,
  single-pole, output referenced to earth
Resolution: 12 Bit
Permitted loads: capacitive, resistive
Min. permitted resistive load: 5 kOhm
Max. short circuit current: 25 mA
Periphery supply: 10 mA (without load)
Module supply: 53 mA
Addresses in the process image:
  ST-PIO: 4 x 16 (64) Bit output values

312465 PSSu E S 4AO U
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314465 PSSu E S 4AO U-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T ...

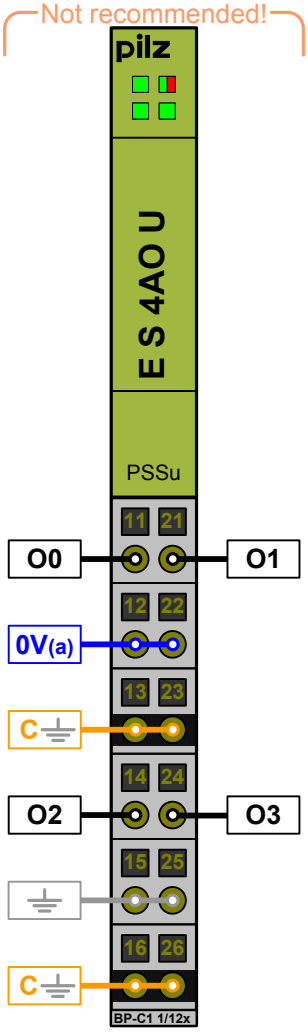
Not recommended!



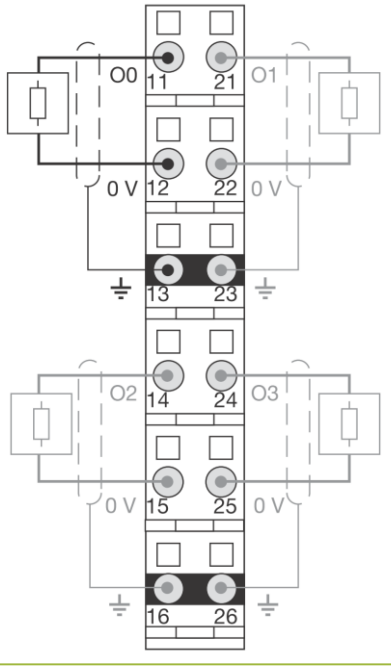
Recommended



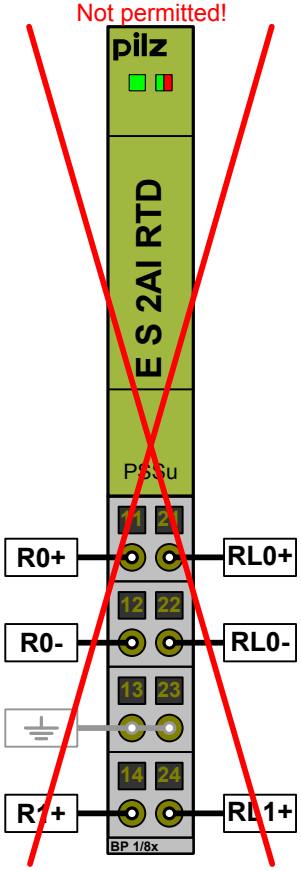
Not recommended!



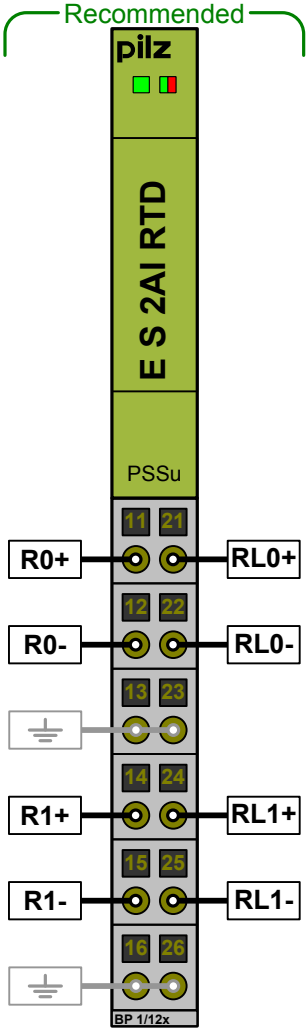
Voltage range (0 ... +10 V
single-pole, referenced to earth



Not permitted!



Recommended



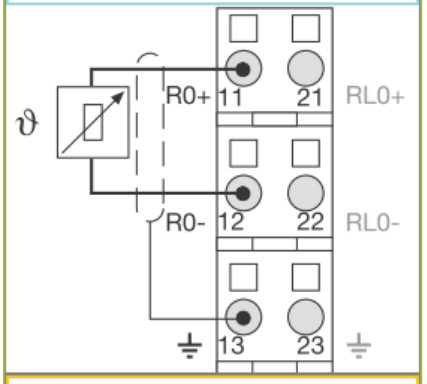
Standard electronic module

Module's device code: 0303h

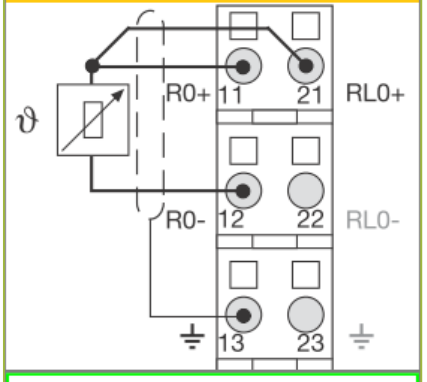
Analogue ST inputs: 2
Type of inputs: resistance thermometer
Corresponding sensors (configurable):
  Pt100, Pt200, Pt500, Pt1000
  Ni100, Ni120, Ni1000
Resistance measurement (configurable):
  0..4000 Ohm
Max. continuous voltage: 5 V
Max. measuring current: 500 µA
Input resistance: 100 MOhm
Max. resolution (LSB):
  0.0625 °C
  0.0625 Ohm
Periphery supply: 15 mA (without load)
Module supply: 125 mA
Addresses in the process image:
 ST-PII: 2 x 16 (32) Bit measured values,
         2 x 8 (16) Bit input status

312490 PSSu E S 2AI RTD
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
Coated version available (314xxx; '-T')

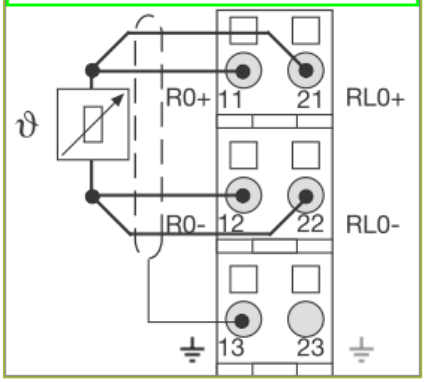
2-wire measurement



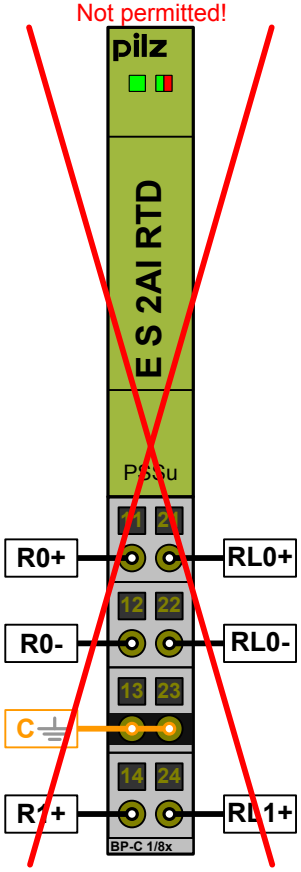
3-wire measurement



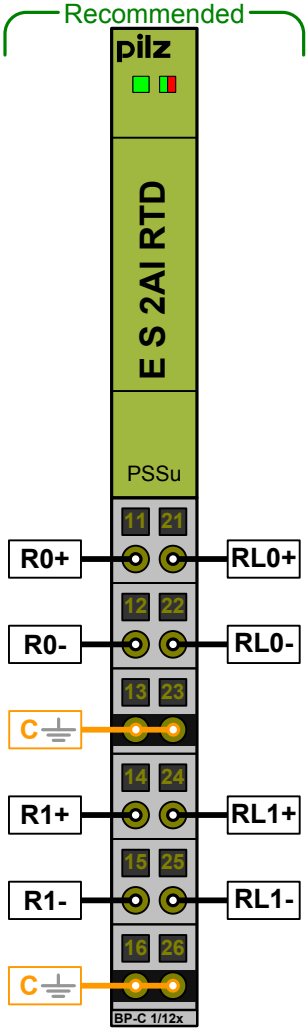
Connection for 4-wire sensor



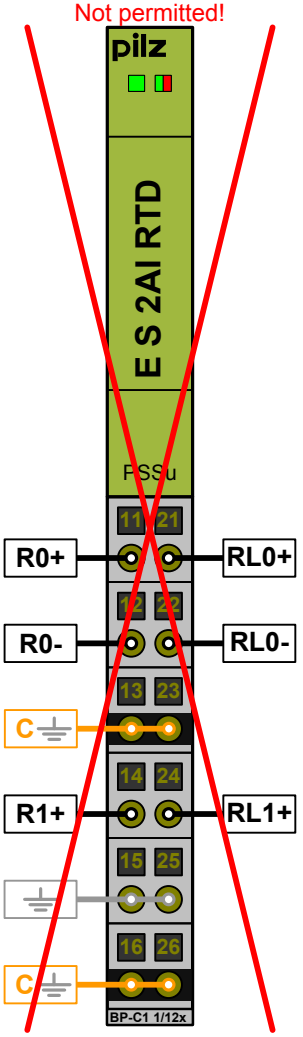
Not permitted!

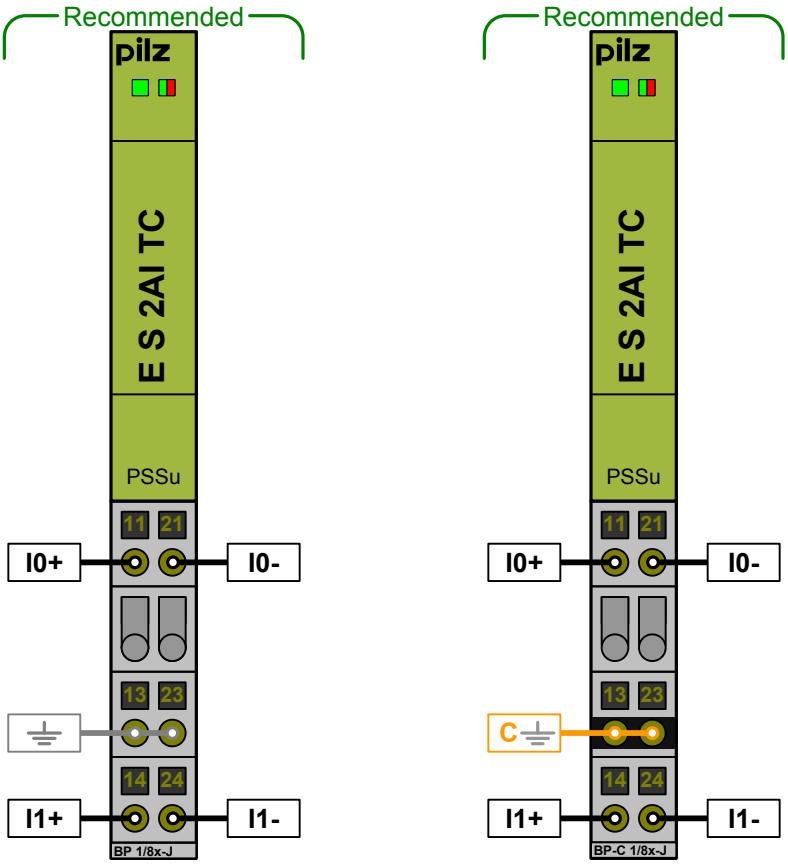


Recommended



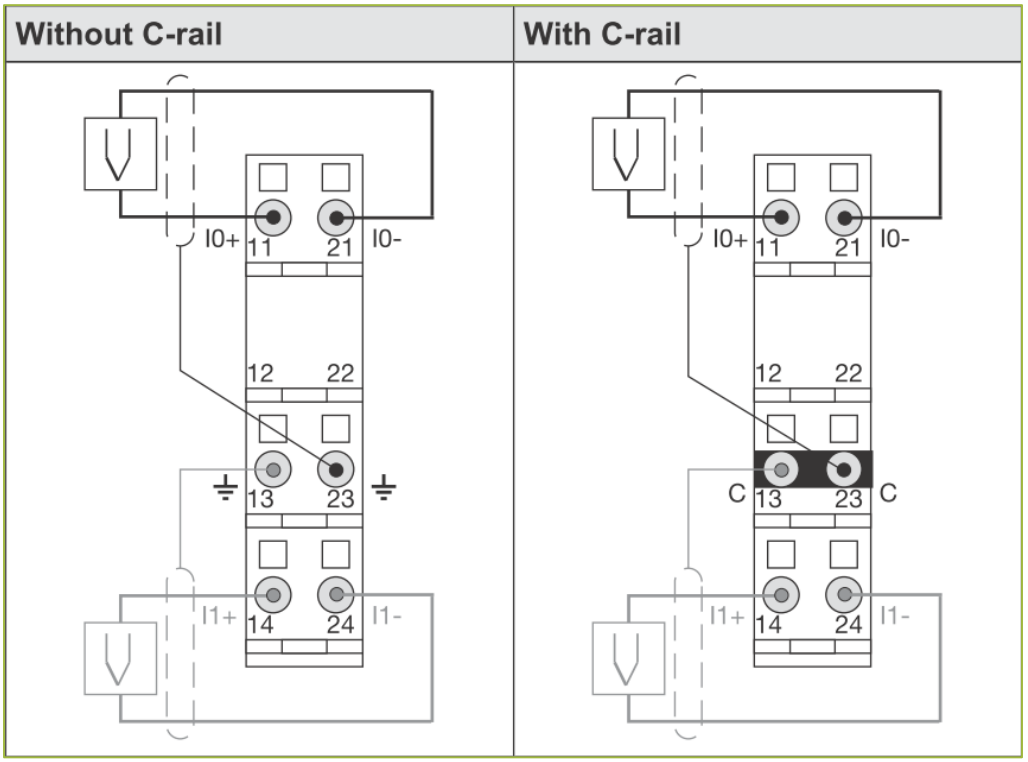
Not permitted!





Special base modules with internal cold junction compensation

```
Standard electronic module
-------------------------------------------
Module's device code: 0304h
-------------------------------------------
Analogue ST inputs: 2
Type of inputs: thermocouples
Corresponding sensors (configurable):
  R, S, B, J, T, E, K, N
Voltage measurement (configurable):
  -30..30 mV, -60..60 mV, -120..120 mV
Max. continuous voltage: 5 V
Input resistance: 100 MOhm
Max. resolution:
  0.0625 °C (LSB)
  1 µV (LSB)
Periphery supply: 15 mA (without load)
Module supply: 125 mA
Addresses in the process image:
  ST-PII: 2 x 16 (32) Bit measured values,
          2 x  8 (16) Bit input status
-------------------------------------------
312500 PSSu E S 2AI TC
312602 PSSu BP 1/8S-J
312603 PSSu BP 1/8C-J
312612 PSSu BP-C 1/8S-J
312613 PSSu BP-C 1/8C-J
Coated version available (314xxx; '-T')
314500 PSSu E S 2AI TC-T
314602 PSSu BP 1/8S-TJ
314603 PSSu BP 1/8C-TJ
314612 PSSu BP-C 1/8S-TJ
314613 PSSu BP-C 1/8C-TJ
-------------------------------------------
```



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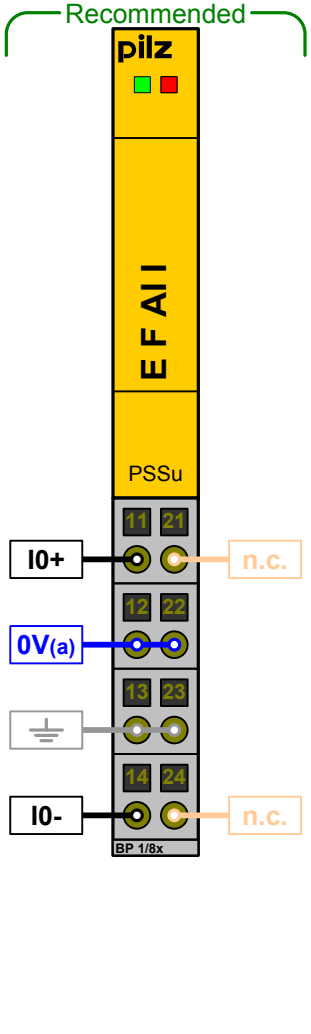
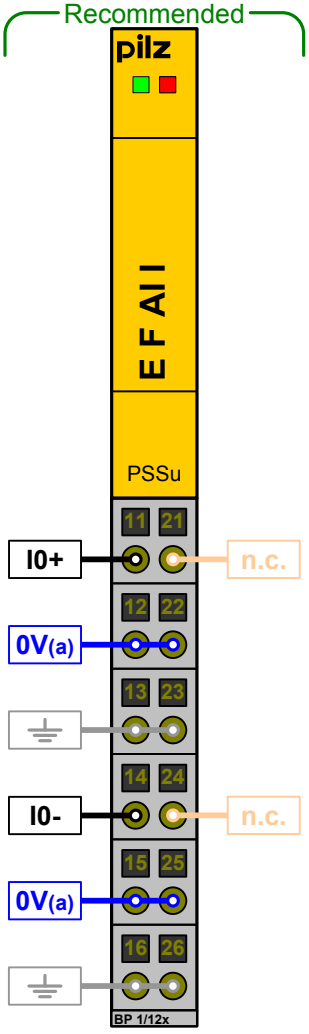




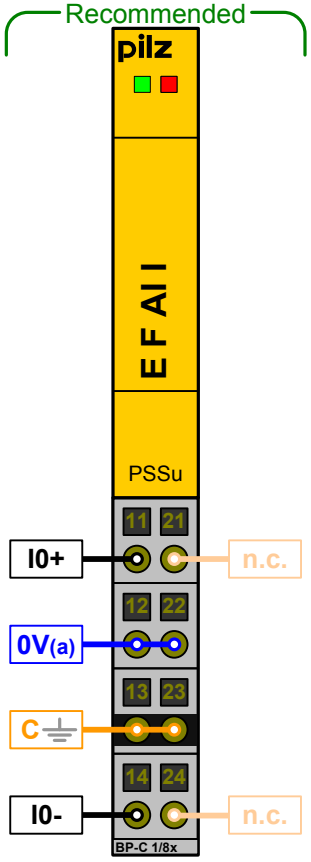
Failsafe electronic module

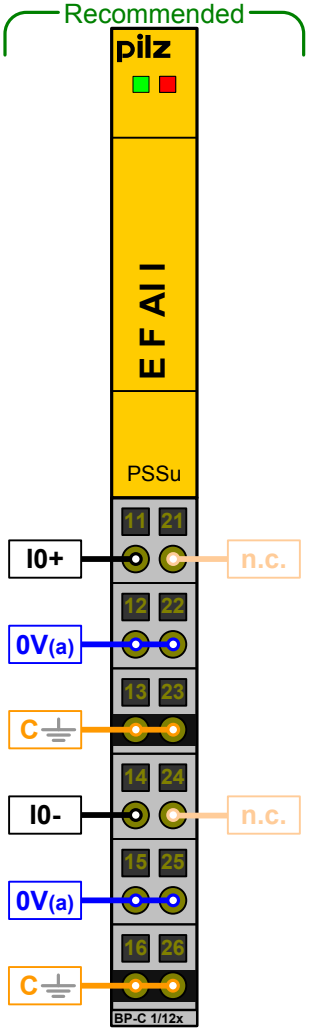
Module's device code: 0B10h
1-channel (up to): ---- / SIL CL 2
2-channel (up to): PL e / SIL CL 3

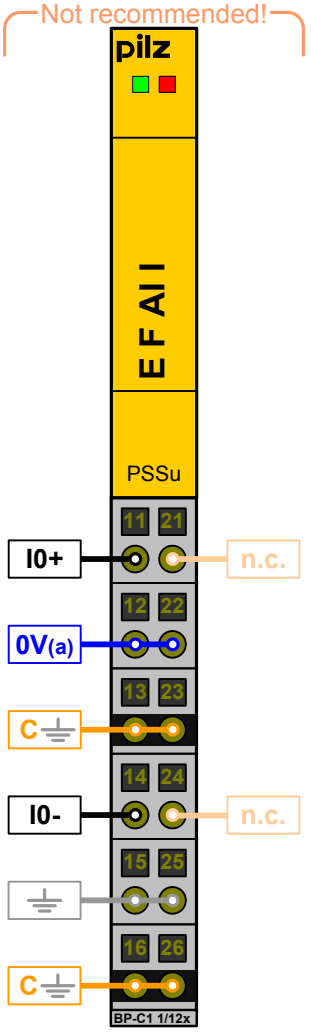
Analogue ST inputs: 1
Type of inputs: Current
Range: 0..25.59 mA
Resolution: 12 Bit
Max. continuous current: 40 mA
Input resistance: 115 Ohm
Periphery supply: 34 mA (without load)
Module supply: 45 mA
Addresses in the process image:
FS-PII: 1 x 16 (16) Bit measured values,
2 x 8 (16) Bit input status

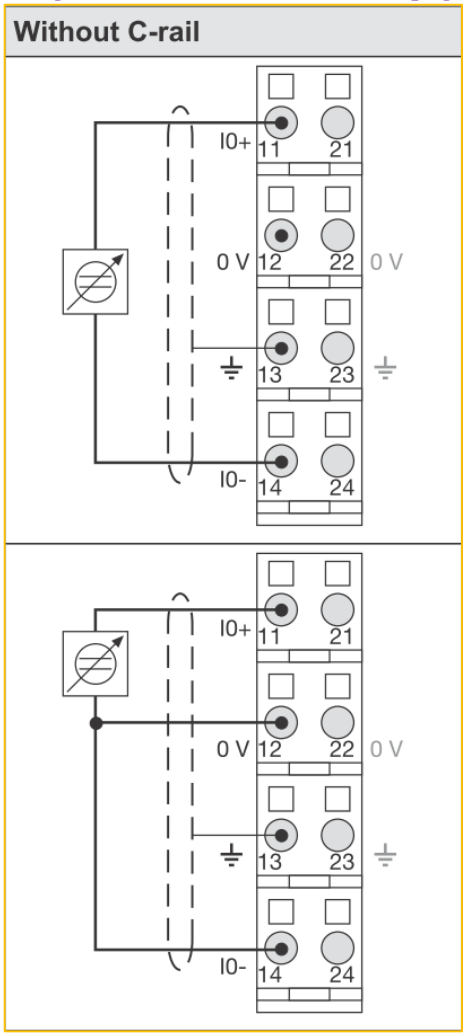
312260 PSSu E F AI I
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314260 PSSu E F AI I-T
Railway version available (315xxx; '-R')
315260 PSSu E F AI I-R

> Wiring „With C-rail" see next page









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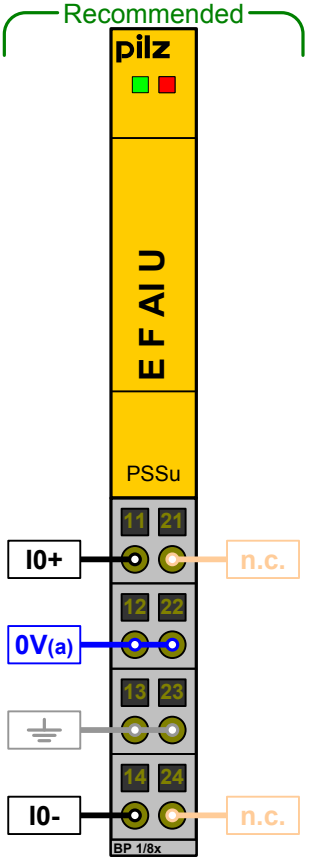
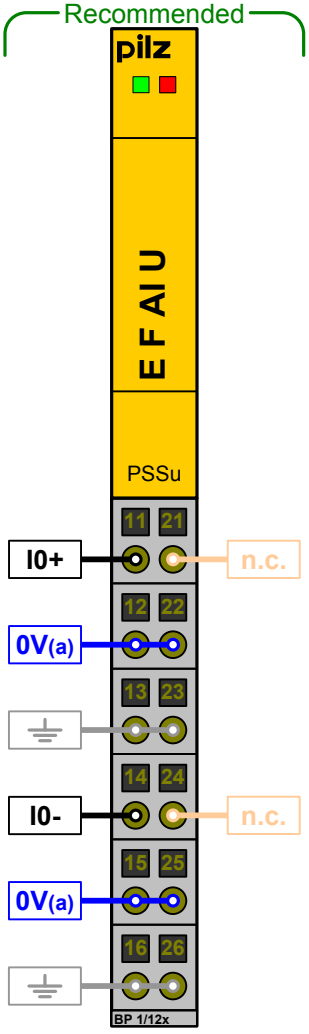
Recommended



Recommended



Failsafe electronic module

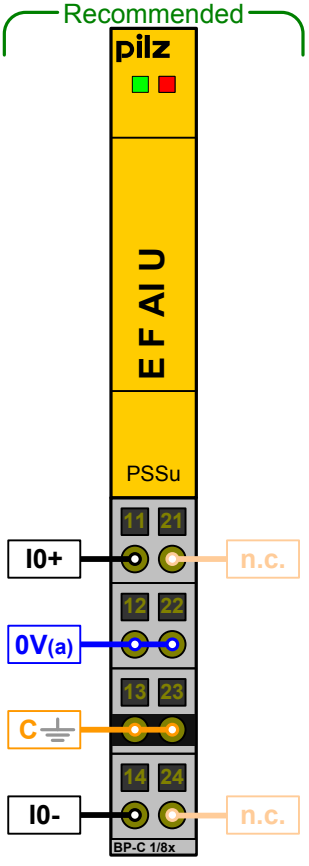
Module's device code: 0B00h
1-channel (up to): ---- / -----
2-channel (up to): PL e / SIL CL 3

Analogue ST inputs: 1
Type of inputs: Voltage
Range: -10.24..10.23 V
Resolution: 13 Bit
Max. continuous voltage: 60 V
Max. common mode voltage: 40 V
Input resistance: 57 kOhm
Periphery supply: 34 mA (without load)
Module supply: 45 mA
Addresses in the process image:
FS-PII: 1 x 16 (32) Bit measured values,
2 x 8 (16) Bit input status

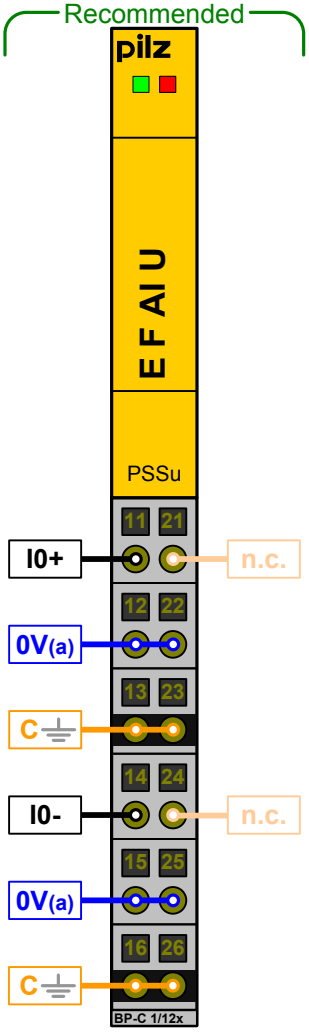
312265 PSSu E F AI U
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314265 PSSu E F AI U-T
Railway version available (315xxx; '-R')
315265 PSSu E F AI U-R

> Wiring „Without C-rail" see privious page

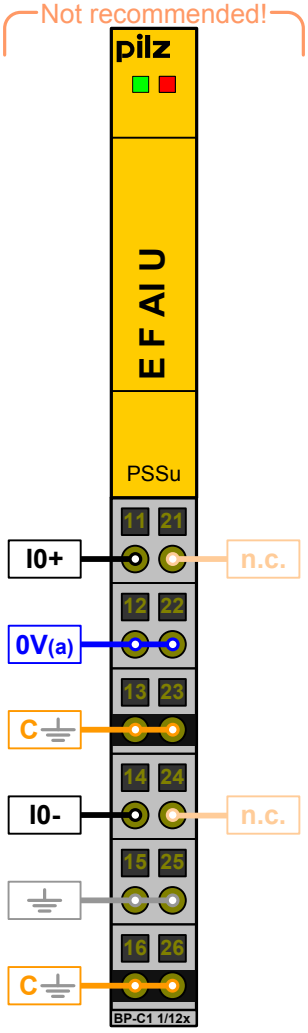
Recommended



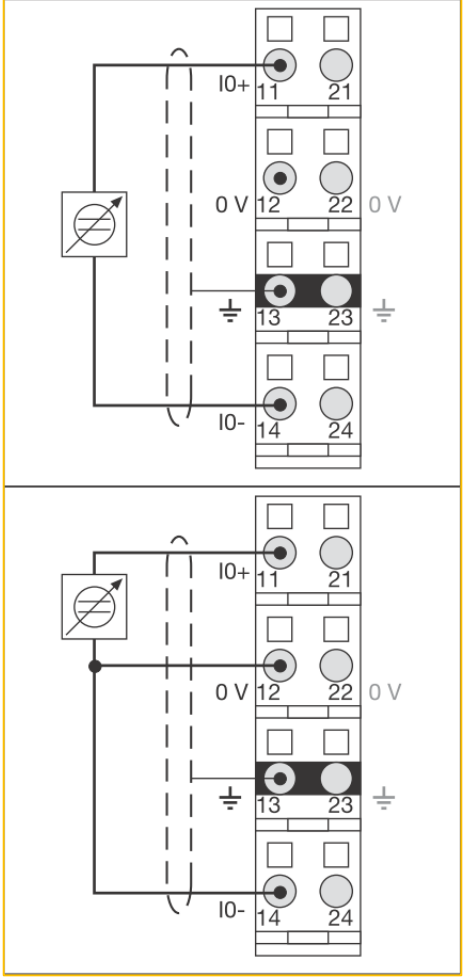
Recommended



Not recommended!



With C-rail



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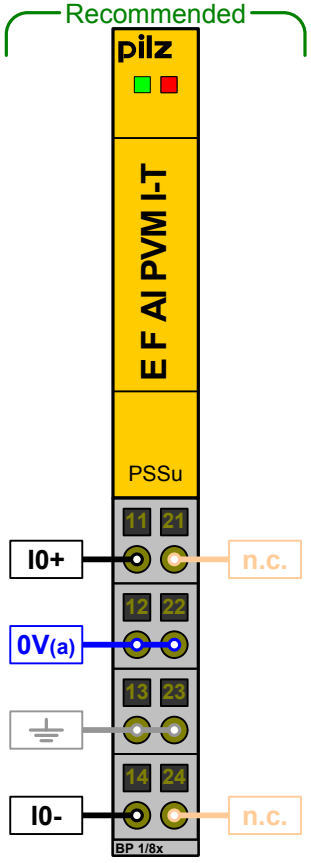
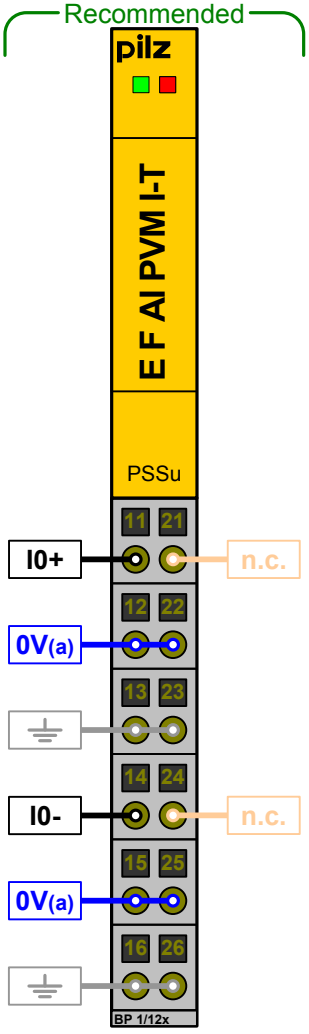
Recommended



Recommended



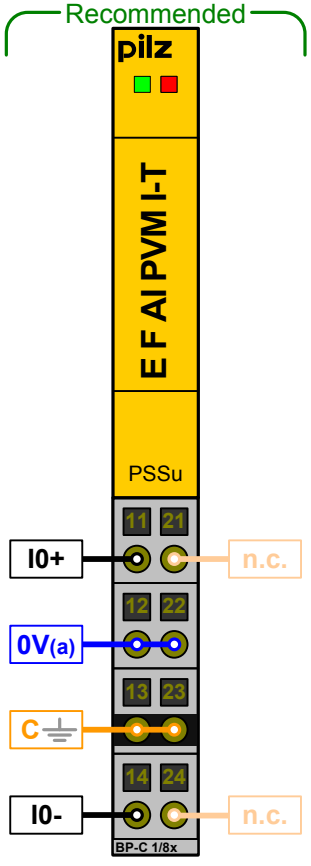
Failsafe electronic module

Module's device code: 0F11h
1-channel (up to): ---- / -----
2-channel (up to): PL e / SIL CL 3
(only PVM-function with two modules and external diagnostics, cyclical analogous measurement is not failsafe)

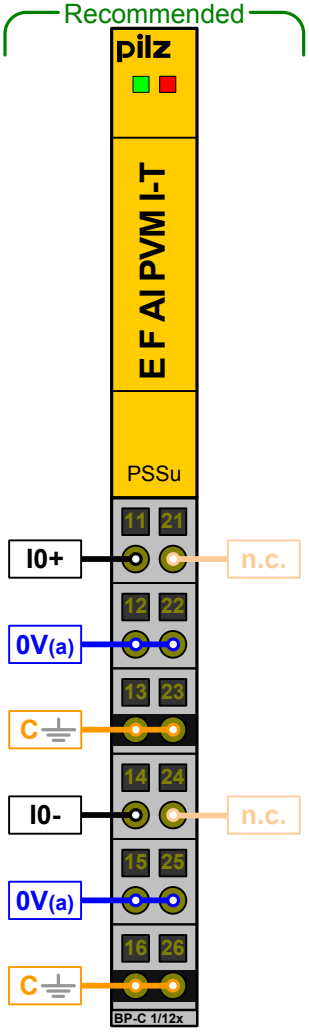
Analogue ST inputs: 1
Type of inputs: Current
Range: 0..25.59375 mA
Resolution: 12 Bit (LSB: 6.25 µA)
Max. continuous current: 40 mA
Input resistance: 115 Ohm
Periphery supply: 16 mA (without load)
Module supply: 50 mA
Addresses in the process image:
ST-PII: 1 x 16 (16) Bit AI measured value
FS-PII: 3 x 8 (24) Bit PVM measured data
11 x 16 (176) Bit PVM measured data
FS-PIO: 3 x 8 (24) Bit PVM output data
2 x 16 (32) Bit PVM output data

Coated version available (314xxx; '-T')
[can be used as/with normal modules 312xxx]
314298 PSSu E F AI I-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

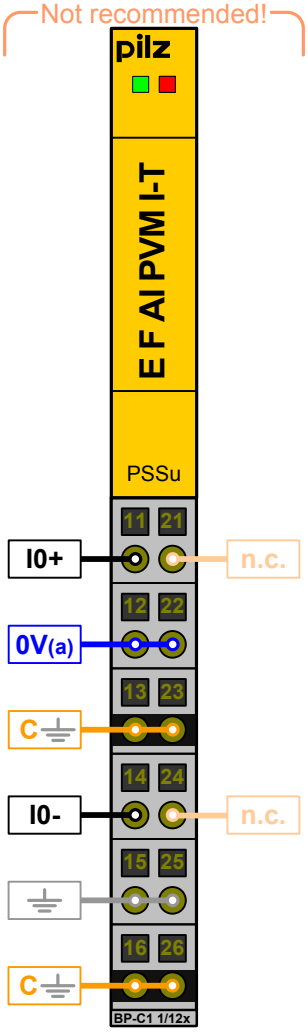
Recommended



Recommended

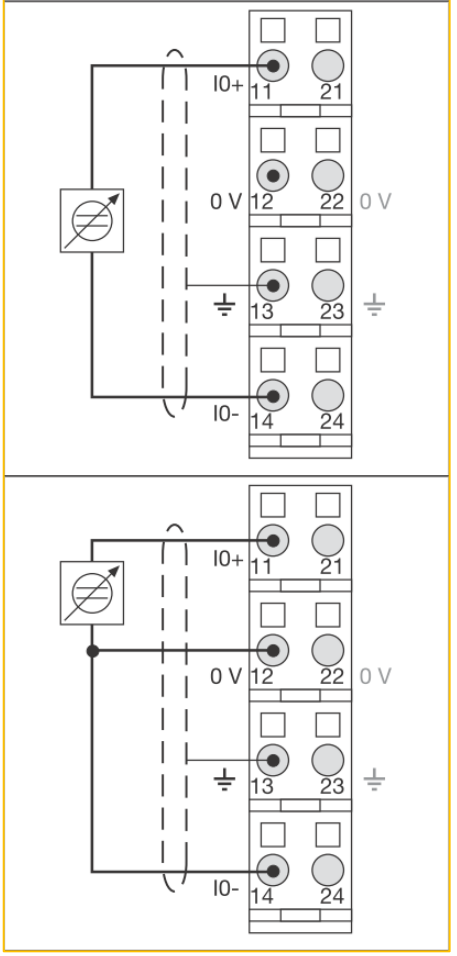


Not recommended!



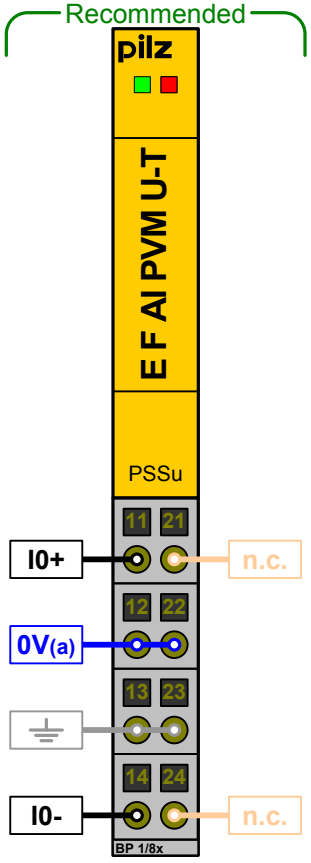
> Wiring „With C-rail" see next page

Without C-rail

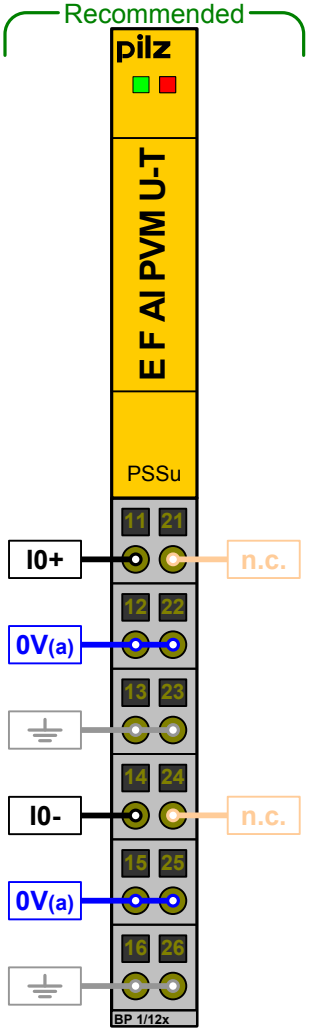


Operating Manual: 22011

Recommended



Recommended



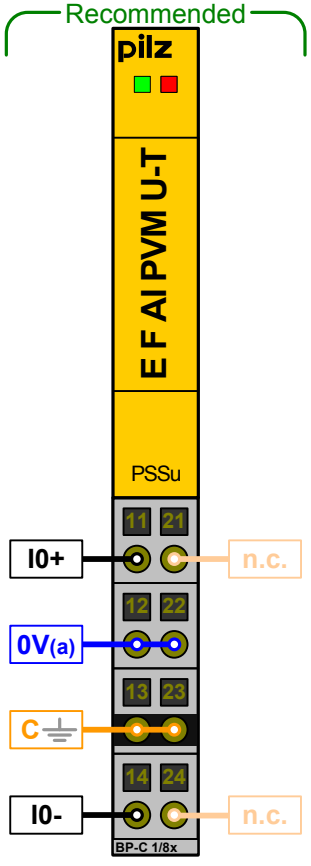
Failsafe electronic module

Module's device code: 0F01h
1-channel (up to): ---- / -----
2-channel (up to): ---- / -----
(only PVM-function with two modules and external diagnostics, cyclical analogous measurement is not failsafe)

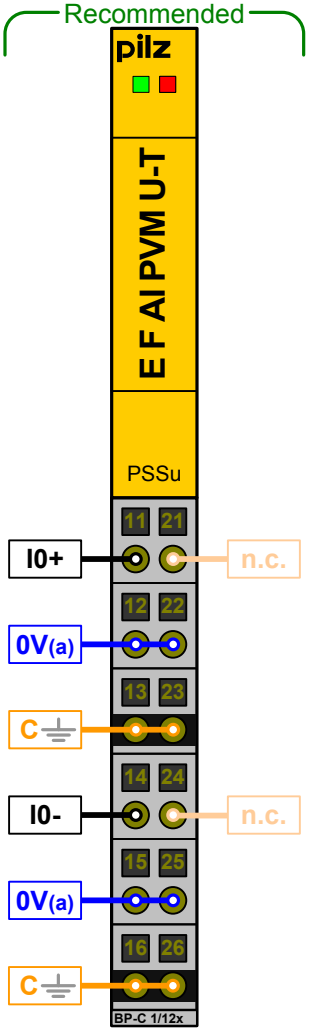
Analogue ST inputs: 1
Type of inputs: Voltage
Range: -10.24..+10.2375 V
Resolution: 13 Bit (LSB: 2.5 mV)
Max. continuous voltage: 60 V
Max. common mode voltage: 40 V
Input resistance: 82 kOhm
Periphery supply: 34 mA (without load)
Module supply: 50 mA
Addresses in the process image:
ST-PII: 1 x 16 (16) Bit AI measured value
FS-PII: 3 x 8 (24) Bit PVM measured data
11 x 16 (176) Bit PVM measured data
FS-PIO: 3 x 8 (24) Bit PVM output data
2 x 16 (32) Bit PVM output data

Coated version available (314xxx; '-T')
[can be used as/with normal modules 312xxx]
314299 PSSu E F AI U-T
314600 PSSu BP 1/8S-T
314601 PSSu BP 1/8C-T
314618 PSSu BP 1/12S-T
314619 PSSu BP 1/12C-T
314610 PSSu BP-C 1/8S-T
314611 PSSu BP-C 1/8C-T
314620 PSSu BP-C 1/12S-T
314621 PSSu BP-C 1/12C-T
314622 PSSu BP-C1 1/12S-T
314623 PSSu BP-C1 1/12C-T

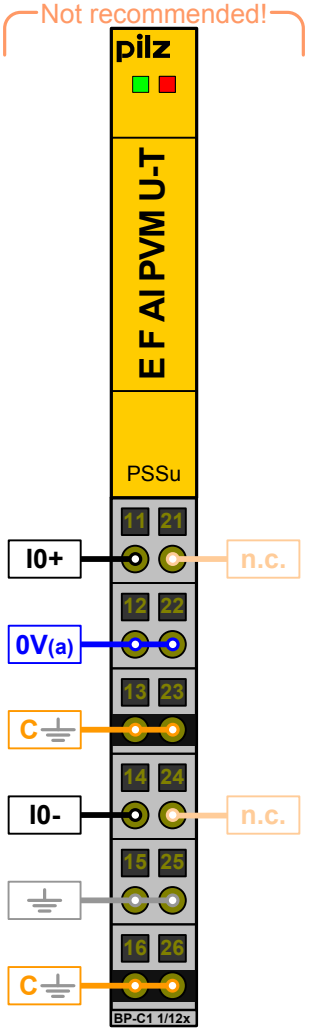
Recommended



Recommended

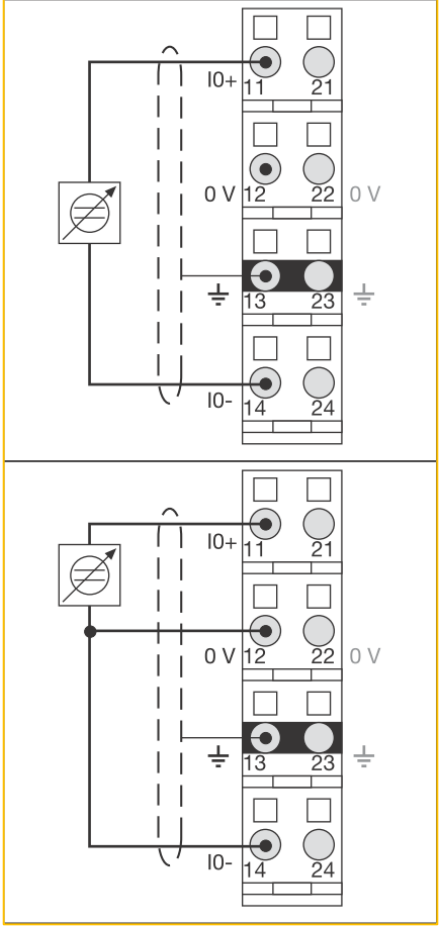


Not recommended!

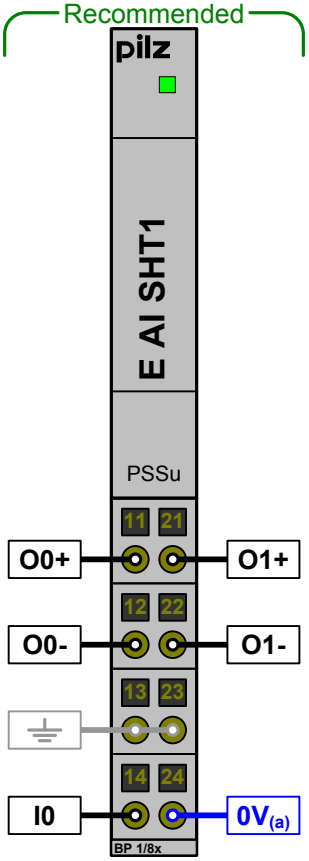


> Wiring „Without C-rail" see privious page

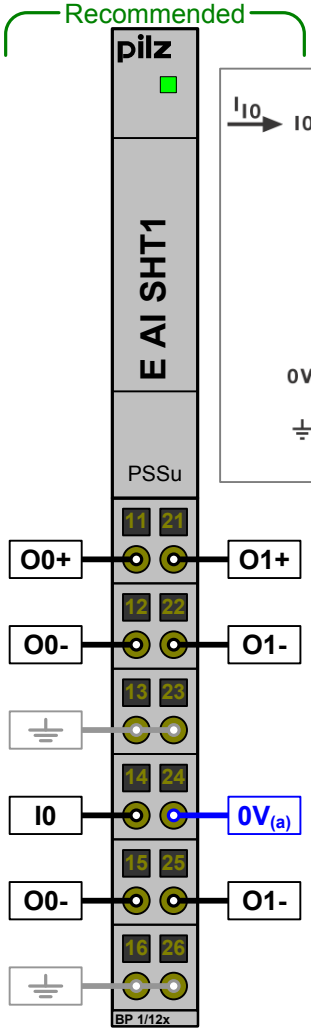
With C-rail

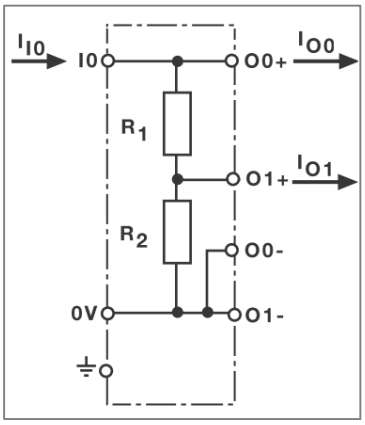


Recommended



Recommended





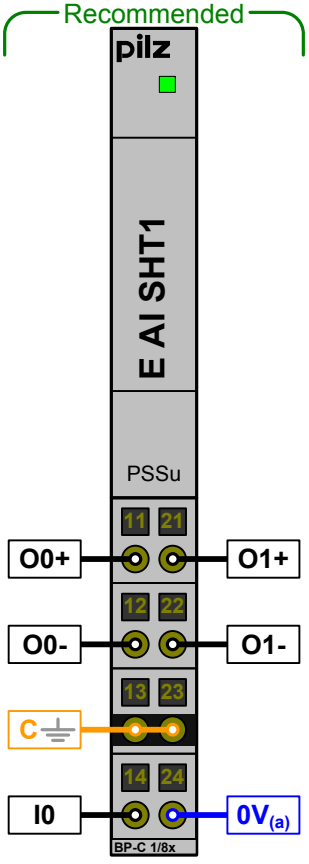
Standard electronic module
(passiv)

Module's device code: ----

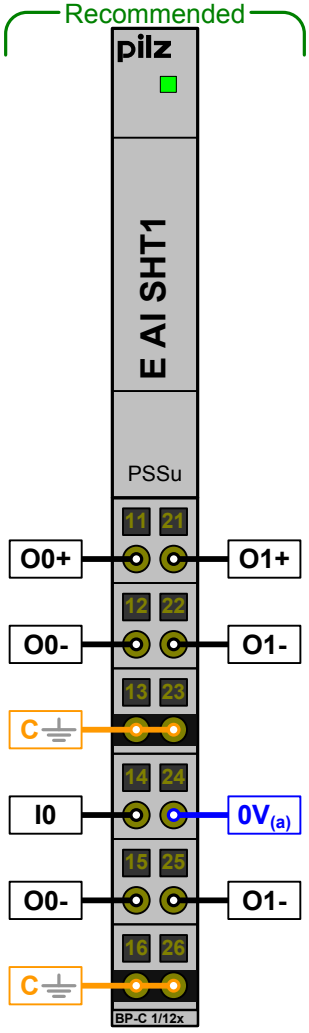
Module with shunts to scale current
Analogue inputs: 1
Type of inputs: Current
Range: 0..0.6 A
Analogue outputs: 2
Type of outputs: Current
Range: 0..20 mA
Scaling factor with analogue output O0:
1:100 (Ii0 = 600 mA >> Io0 = 6 mA)
Scaling factor with analogue output O1:
1:200 (Ii0 = 600 mA >> Io1 = 3 mA)
Internal resistance connection O0+/O0-:
1163 mOhm (1.163 Ohm =R1+R2)
Internal resistance connection O1+/O1-:
583 mOhm (0.583 Ohm =R2)
Evaluation by module with analogue current inputs (e.g. PSSu E F AI I with an Input resistance of 115 Ohm)
Addresses in the process image: none
Slot number: none
Slot marking: SHT1

312261 PSSu E AI SHT1
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314261 PSSu E AI SHT1-T

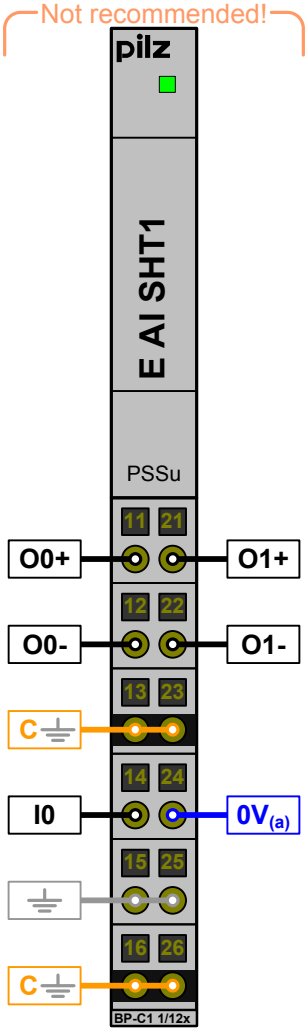
Recommended

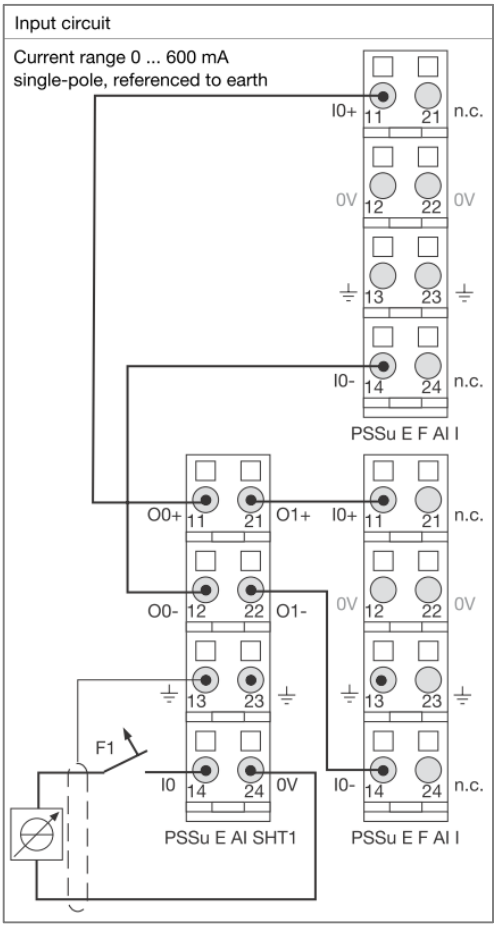


Recommended

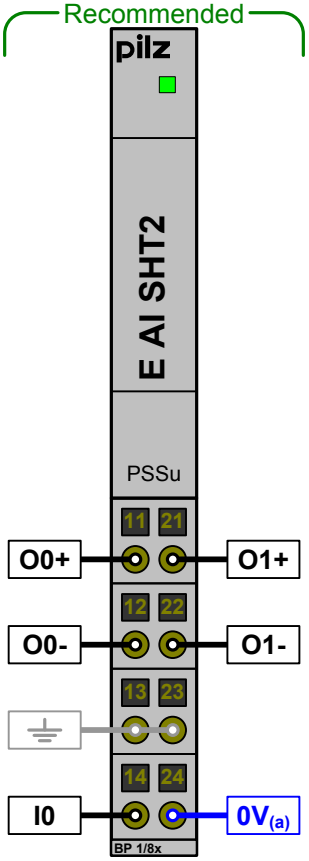


Not recommended!

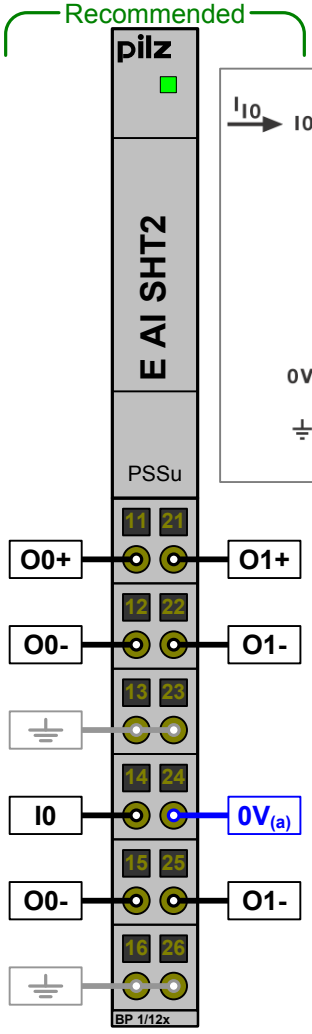


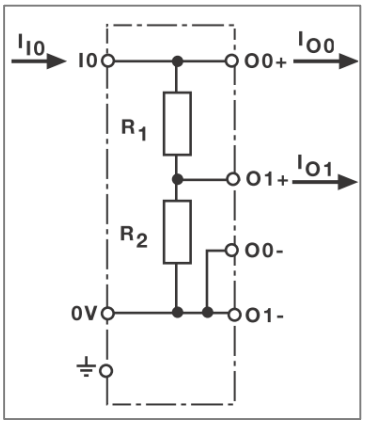


Recommended



Recommended





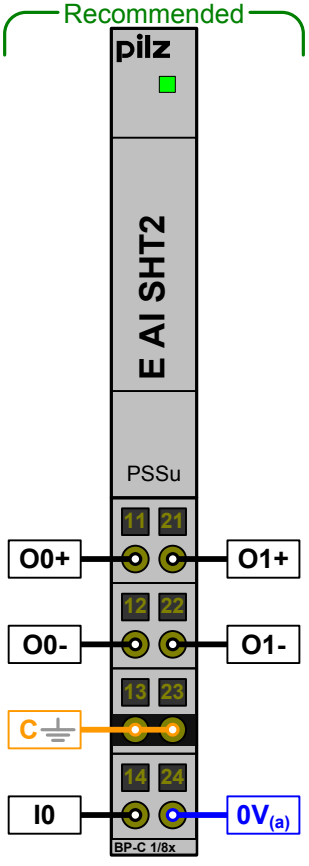
Standard electronic module
(passiv)

Module's device code: ----

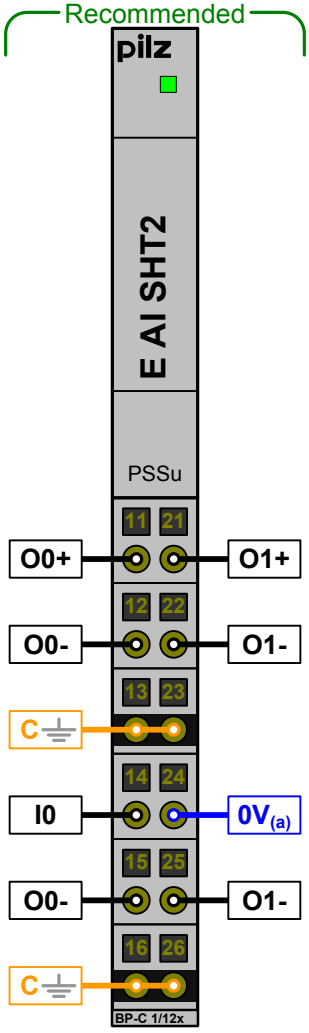
Module with shunts to scale current
Analogue inputs: 1
Type of inputs: Current
Range: 0..0.2 A
Analogue outputs: 2
Type of outputs: Current
Range: 0..20 mA
Scaling factor with analogue output O0:
1:10 (Ii0 = 200 mA >> Io0 = 20 mA)
Scaling factor with analogue output O1:
1:20 (Ii0 = 200 mA >> Io1 = 10 mA)
Internal resistance connection O0+/O0-:
10150 mOhm (10.150 Ohm =R1+R2)
Internal resistance connection O1+/O1-:
6750 mOhm (6.750 Ohm =R2)
Evaluation by module with analogue current inputs (e.g. PSSu E F AI I with an Input resistance of 115 Ohm)
Addresses in the process image: none
Slot number: none
Slot marking: SHT2

312262 PSSu E AI SHT1
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C

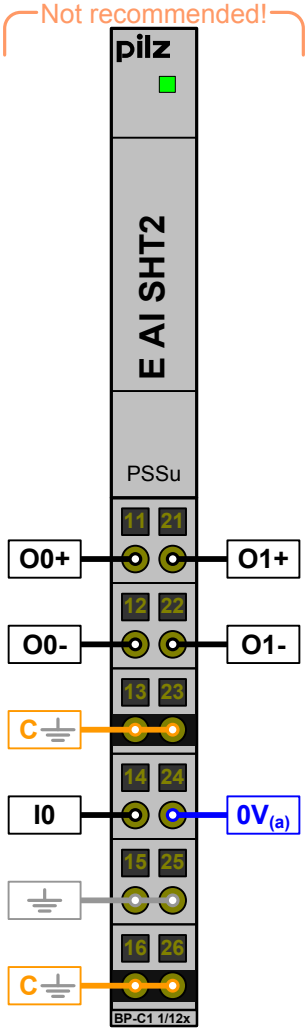
Recommended



Recommended

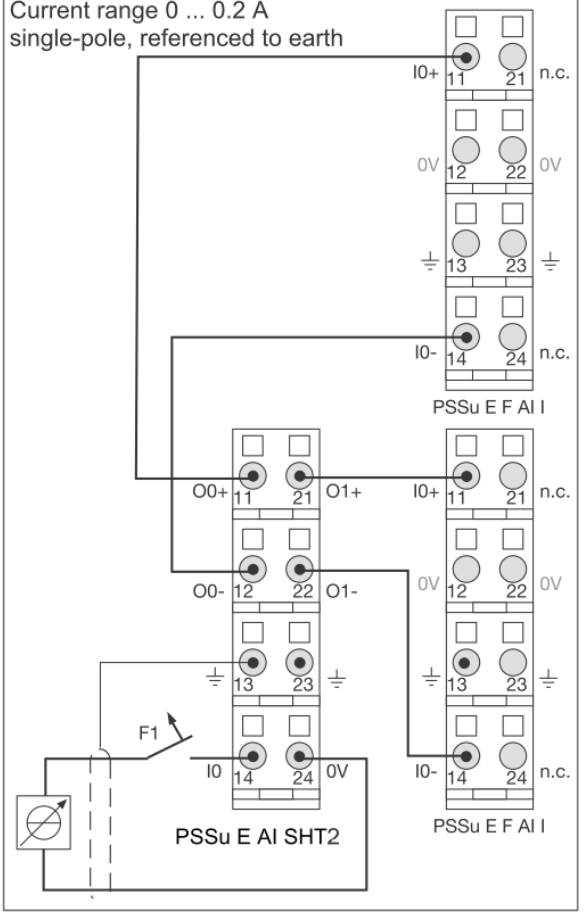


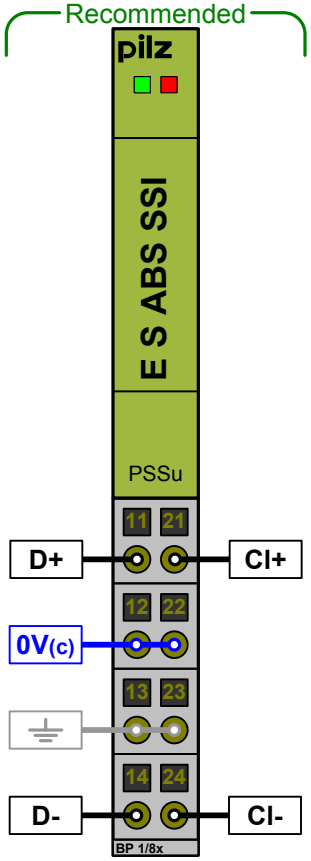
Not recommended!

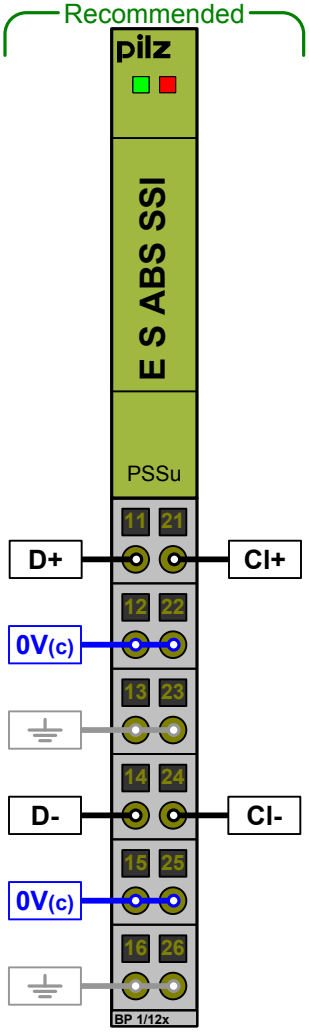


Input circuit

Current range 0 ... 0.2 A
single-pole, referenced to earth





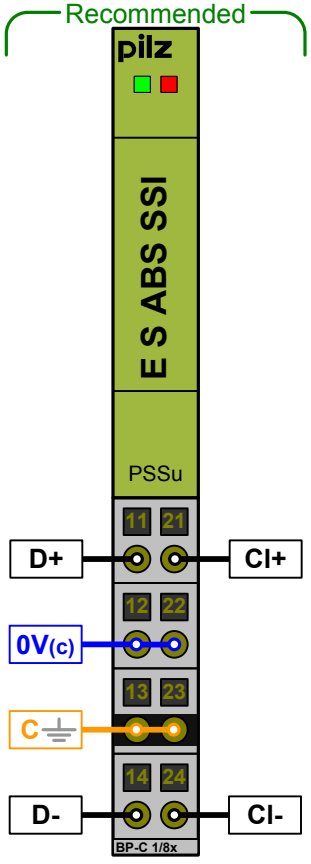


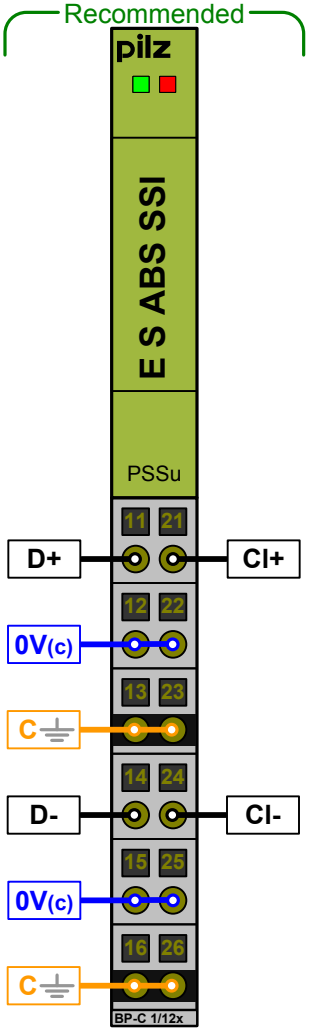
Standard electronic module

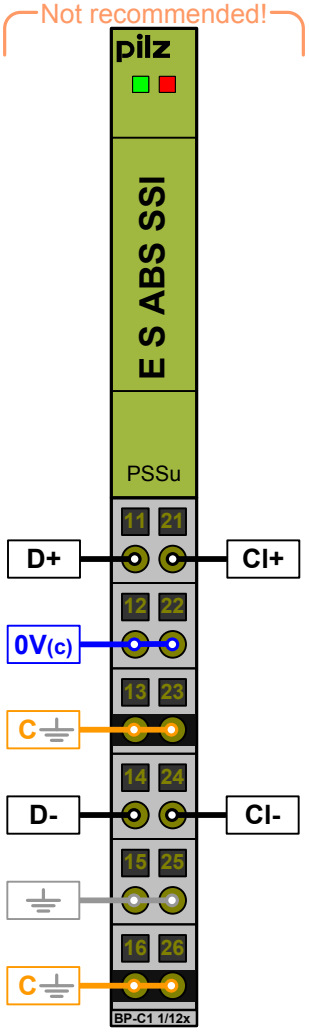
Module's device code: 0320h

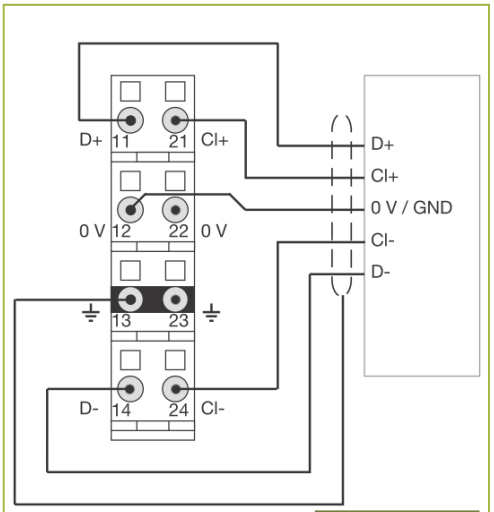
ST counter input: 1
(5 V differential signal, RS 422)
Type of input: SSI-Encoder
Bit width of input data (configurable):
2..32 Bit
Transmission rate of input (configurable):
62.5 kHz, 100.0 kHz, 125.0 kHz, 250.0 kHz,
500.0 kHz, 1,000.0 kHz, 1,500.0 kHz
Coding of the input signal (configurable):
Gray code or
Binary code
Periphery supply: 10 mA (without load)
Module supply: 101 mA
Addresses in the process image:
ST-PII: 5 Bytes divided into
1 x 32 Bit counter data plus
1 x 8 Bit counter status

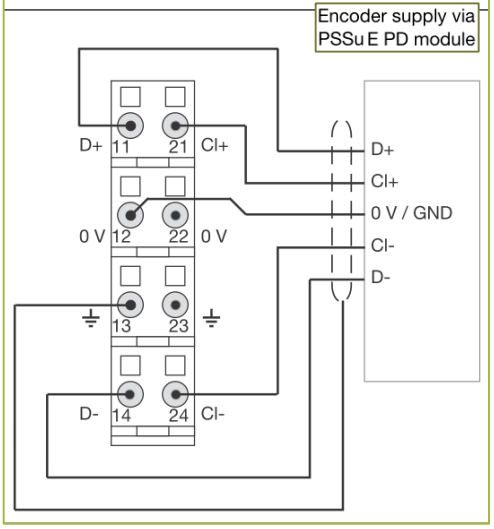
312480 PSSu E S ABS SSI
312600 PSSu BP 1/8S
312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314480 PSSu E S ABS SSI-T
314600 PSSu BP 1/8S-T ...

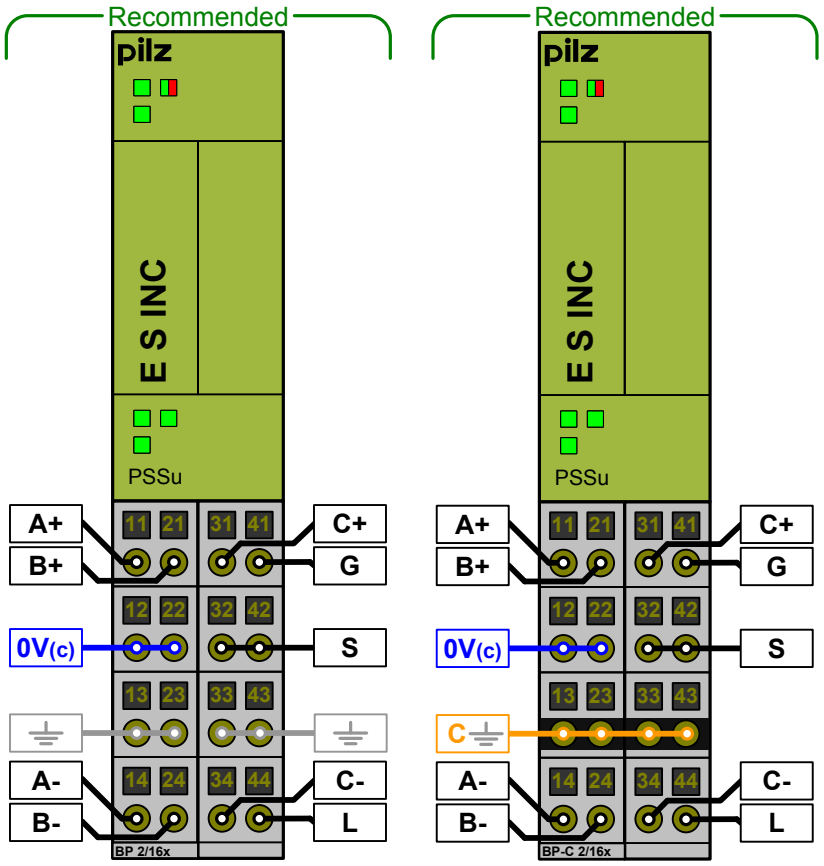












Standard electronic module

Module's device code: 0321h

Operating mode (configurable):
- Incremental encoder or
- Counter

Incremental encoder

ST inputs for an incremental encoder:
- A, B, C input
  (5 V differential signal, RS 422)

Evaluation of counter pulses (configurable):
- 4-x evaluation
- 2-x evaluation
- 1-x evaluation

Input for special functions (configurable):
- 3 (24 V signal referenced to earth)
  - Gate input or
  - Input for external latch pulse or
  - Status input

Counter

ST counter input:
- 1 (5 V differential signal, RS422)

Input for switching the counter direction:
- 1 (5 V differential signal, RS422)

Input for start/stop of the counter (Gate):
- 1 (24 V signal referenced to earth)

Resolution of incremental encoder/counter:
- 32 Bit

Max. detectable transmission rate at input:
- 5 MHz

Periphery supply: 15 mA (without load)

Module supply: 157 mA

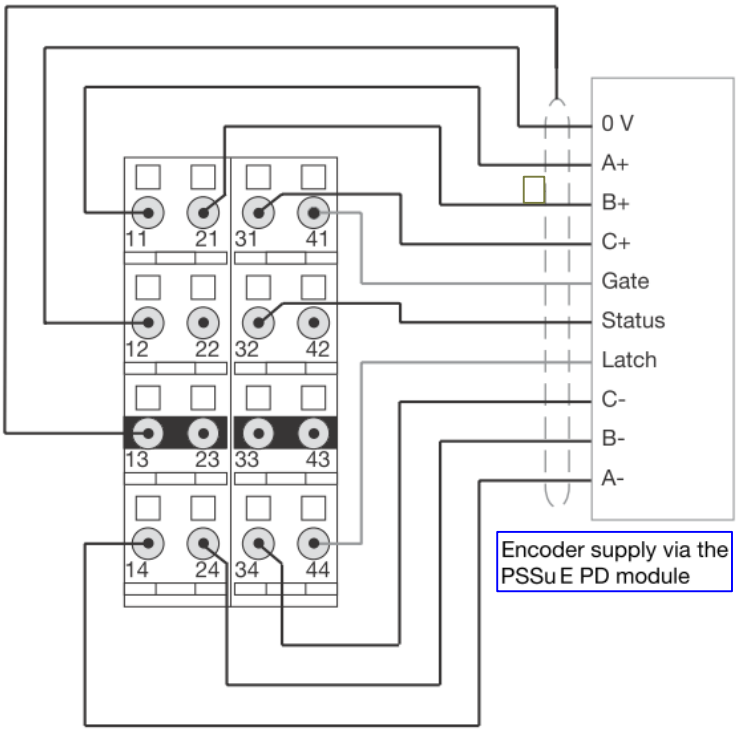
Addresses in the process image:
- ST-PII: 9 Bytes divided into
  - 1 x 32 Bit counter data plus
  - 1 x 8 Bit counter status plus
  - 1 x 32 Bit latch value/period length
- ST-PIO: 5 Bytes divided into
  - 1 x 32 Bit counter value plus
  - 1 x 8 Bit control Byte

312485 PSSu E S INC
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C

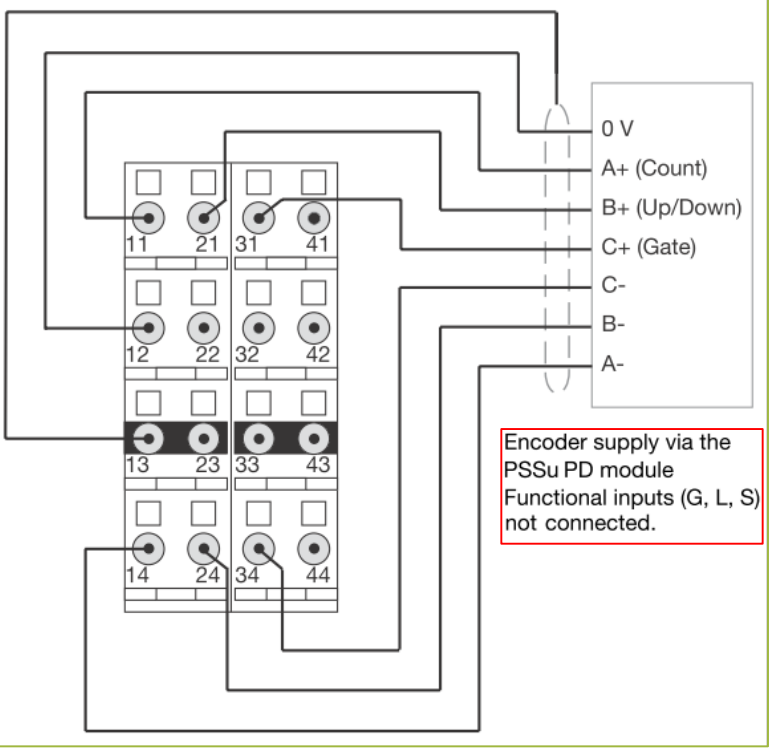
Coated version available (314xxx; '-T')

314485 PSSu E S INC-T
314628 PSSu BP 2/16S-T
314629 PSSu BP 2/16C-T
314630 PSSu BP-C 2/16S-T
314631 PSSu BP-C 2/16C-T

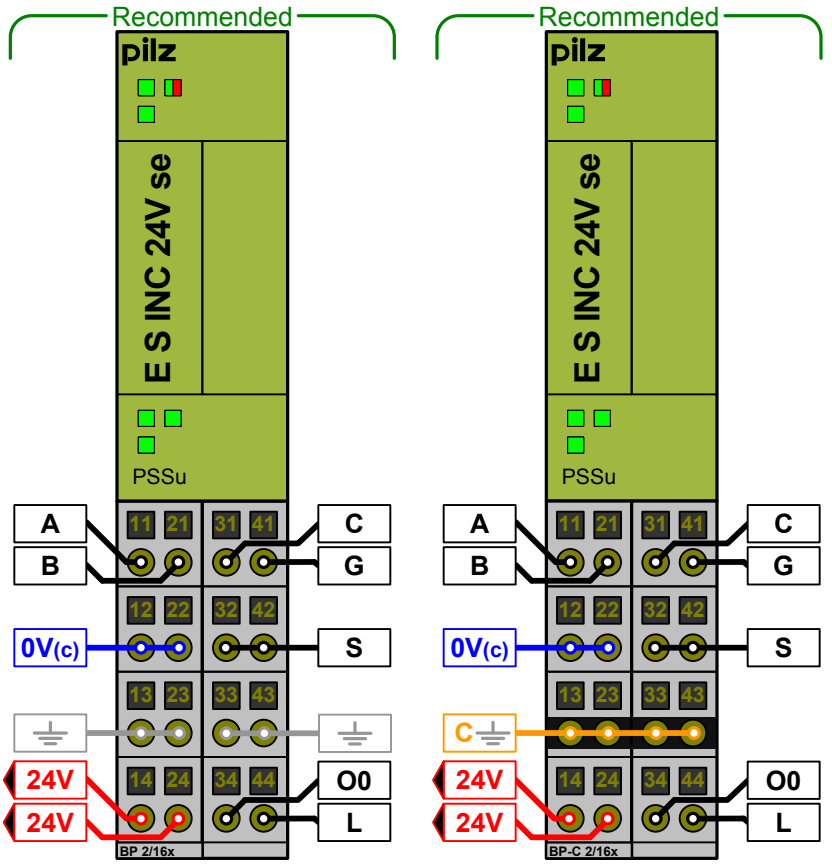
Incremental encoder operating mode



Counter operating mode



Operating Manual: 1001380



Standard electronic module

Module's device code: 0322h

Operating mode (configurable):
- Incremental encoder or
- Counter

Incremental encoder

ST inputs for an incremental encoder:
- A, B, C input
  (24 V signal referenced to earth)

Evaluation of counter pulses (configurable):
- 4-x evaluation
- 2-x evaluation
- 1-x evaluation

Input for special functions (configurable):
- 3 (24 V signal referenced to earth)
  - Gate input or
  - Input for external latch pulse or
  - Status input

Counter

ST counter input:
- 1 (24 V signal referenced to earth)

Input for switching the counter direction:
- 1 (24 V signal referenced to earth)

Input for start/stop of the counter (Gate):
- 1 (24 V signal referenced to earth)

Resolution of incremental encoder/counter:
- 32 Bit

Max. detectable transmission rate at input:
- 200 kHz

Digital ST outputs: 1 (single pole)

Load current Periphery Supply:
- max. 0.5 A per output

Total current of outputs: max. 0.5 A/24 V DC

Periphery supply: 10 mA (without load)

Sensor supply: 100 mA/24 V

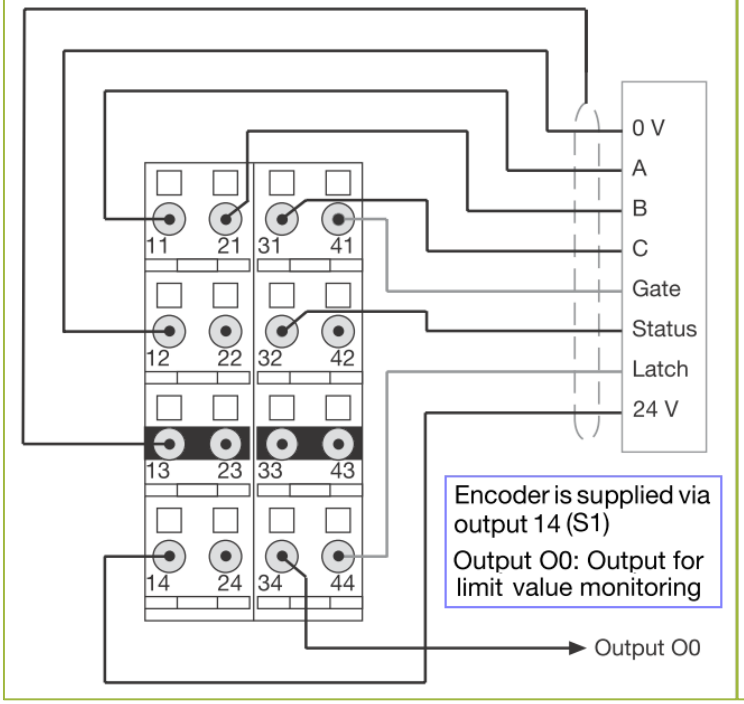
Module supply: 170 mA

312486 PSSu E S INC
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C

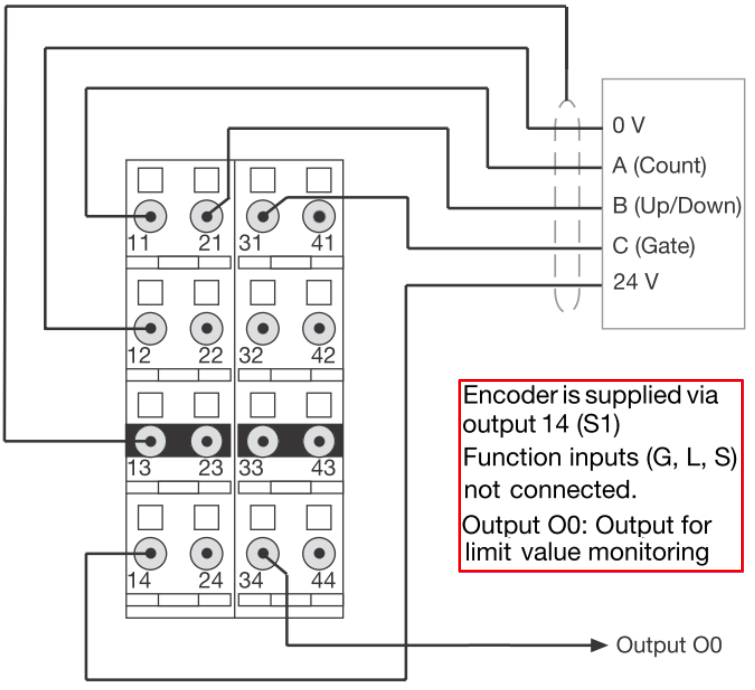
Coated version available (314xxx; '-T')

Addresses in the process image:
- ST-PII: 9 Bytes divided into
  - 1 x 32 Bit counter data plus
  - 1 x 8 Bit counter status plus
  - 1 x 32 Bit latch value/period length
- ST-PIO: 9 Bytes divided into
  - 1 x 32 Bit counter value plus
  - 1 x 32 Bit limit value plus
  - 1 x 8 Bit control Byte

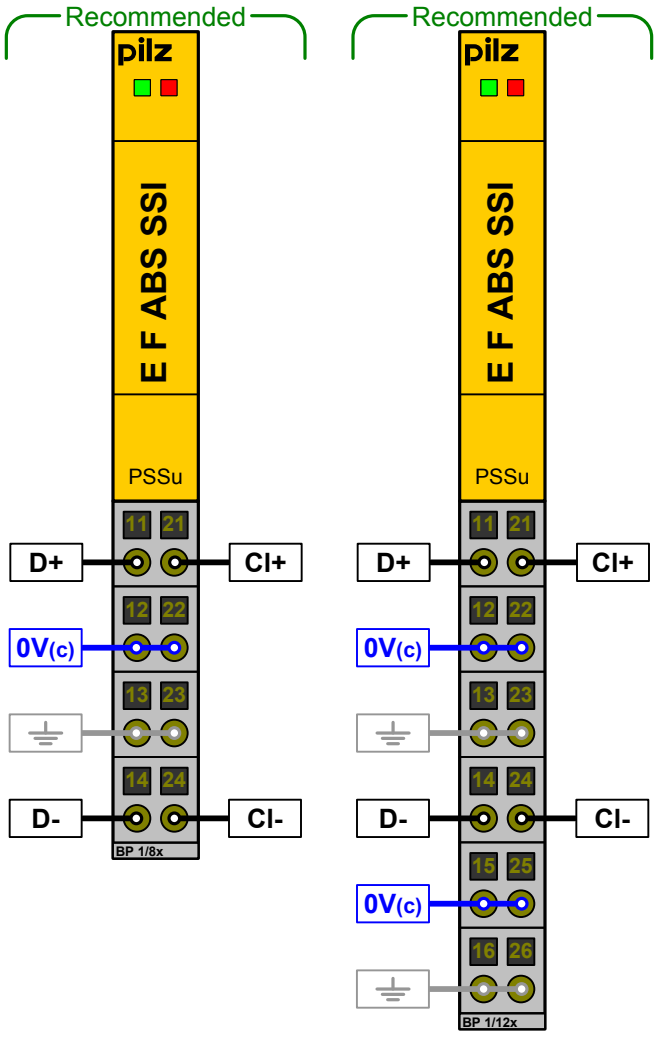
Incremental encoder mode



Counter mode



Operating Manual: 1001455

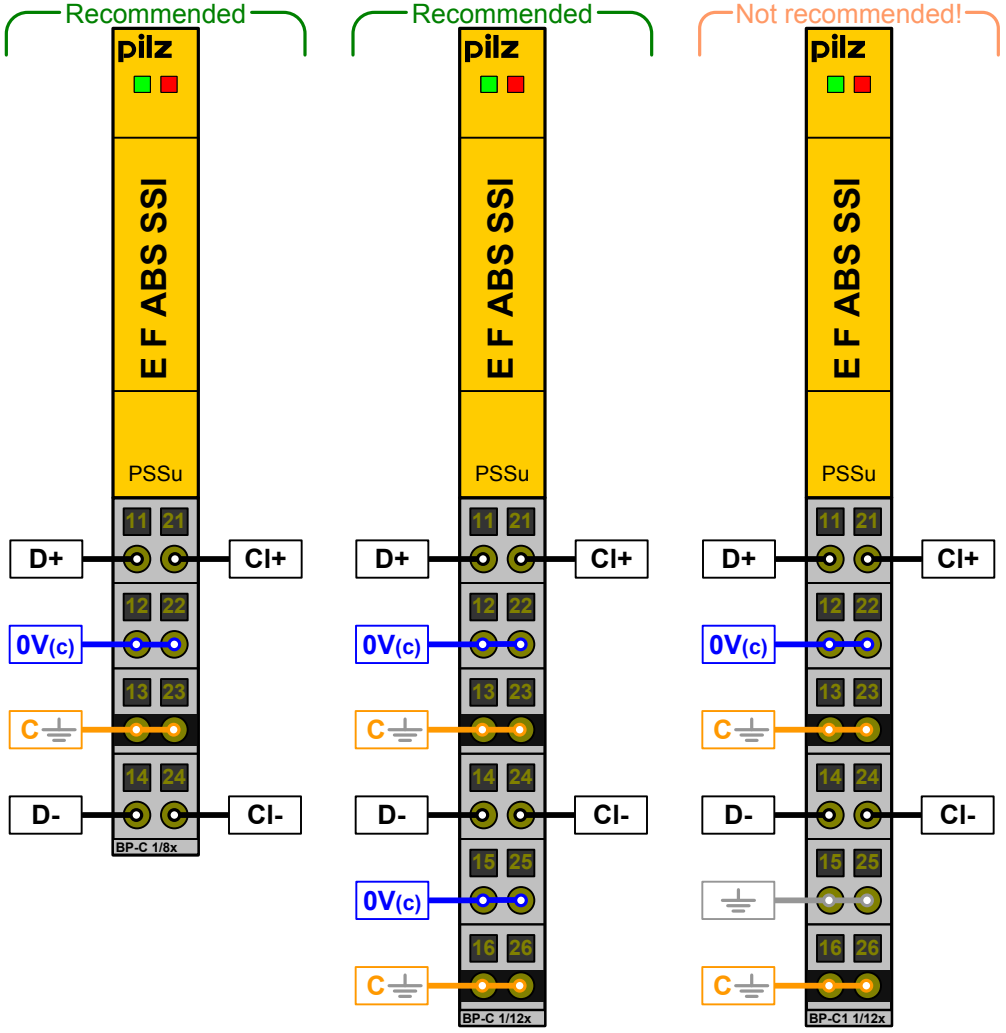


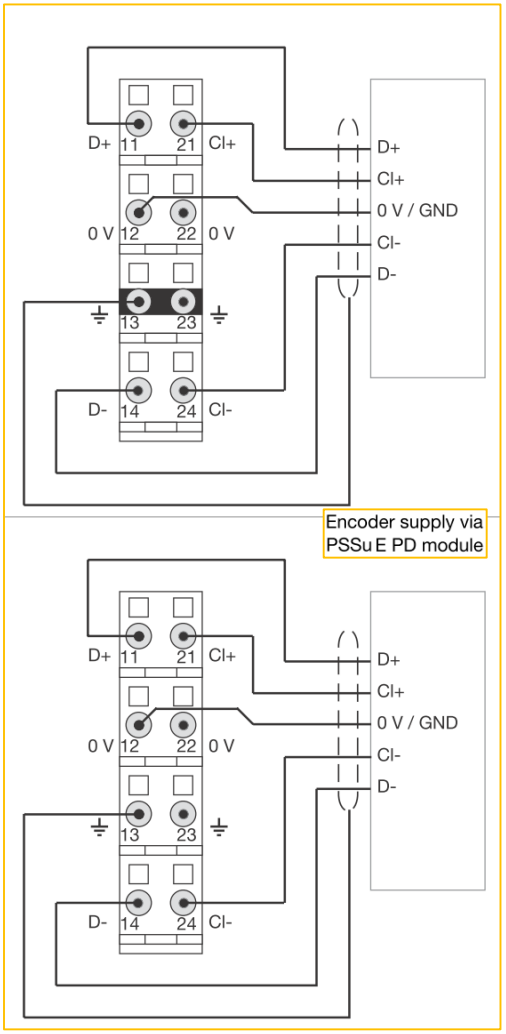
Failsafe electronic module

Module's device code: 0323h
2-channel (up to): PL e / SIL CL 3
Only with 2 sensors and 2 counter modules
See Operating Manual
Chap. Safety > Intended use

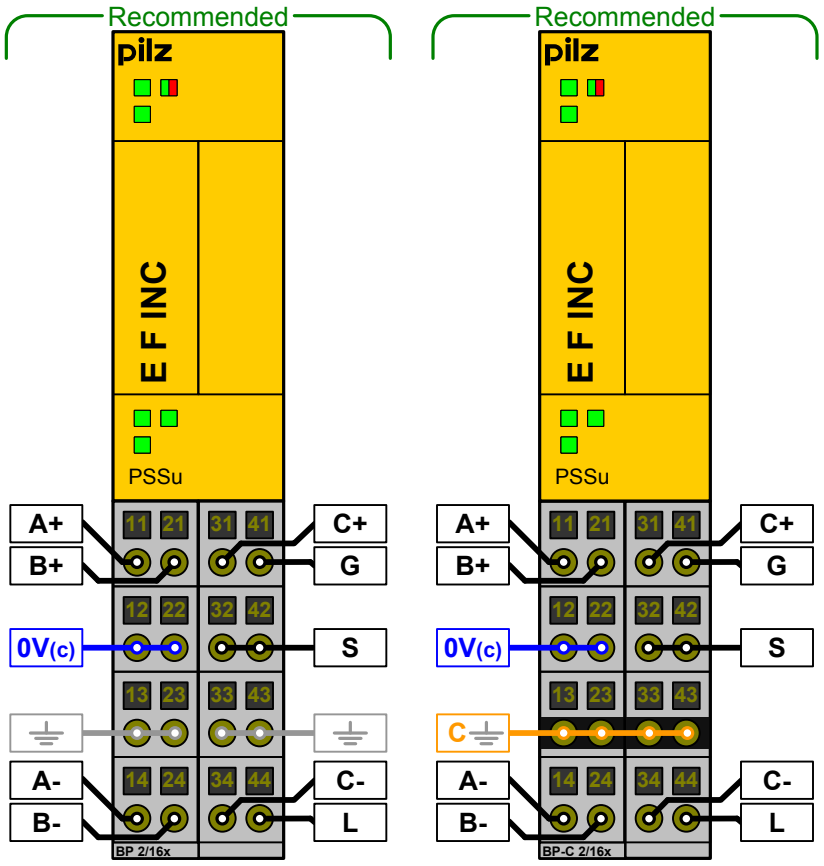
ST counter input: 1
(5 V differential signal, RS 422)
Type of input: SSI-Encoder
Bit width of input data (configurable):
2..32 Bit
Transmission rate of input (configurable):
62.5 kHz, 100.0 kHz, 125.0 kHz, 250.0 kHz,
500.0 kHz, 1,000.0 kHz, 1,500.0 kHz
Coding of the input signal (configurable):
Gray code or
Binary code
Periphery supply: 10 mA (without load)
Module supply: 101 mA
Addresses in the process image:
FS-PII: 5 Bytes divided into
1 x 32 Bit counter data plus
1 x 8 Bit counter status

312475 PSSu E F ABS SSI
312600 PSSu BP 1/8S, 312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S
312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S
312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S
312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S
312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')





Operating Manual: 1001454



Failsafe electronic module

Module's device code: 0323h
2-channel (up to): PL e / SIL CL 3
Only with 2 sensors and 2 counter modules
See Operating Manual
Chap. Safety > Intended use

Operating mode (configurable):
Incremental encoder or
Counter

Incremental encoder

ST inputs for an incremental encoder:
A, B, C input
(5 V differential signal, RS 422)
Evaluation of counter pulses (configurable):
4-x evaluation
2-x evaluation
1-x evaluation
Input for special functions (configurable):
3 (24 V signal referenced to earth)
Gate input or
Input for external latch pulse or
Status input

Counter

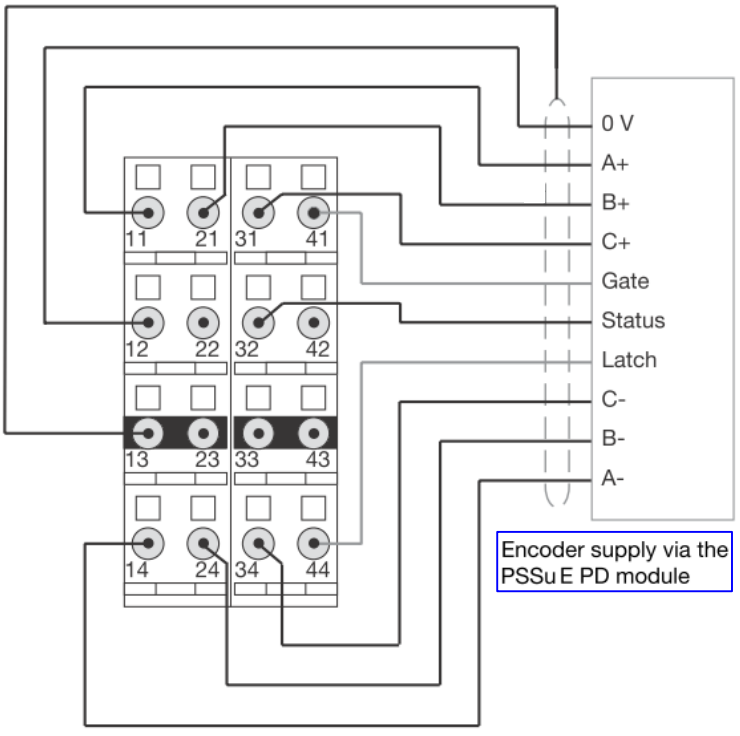
ST counter input:
1 (5 V differential signal, RS422)
Input for switching the counter direction:
1 (5 V differential signal, RS422)
Input for start/stop of the counter (Gate):
1 (24 V signal referenced to earth)

Resolution of incremental encoder/counter:
32 Bit
Max. detectable transmission rate at input:
5 MHz
Periphery supply: 15 mA (without load)
Module supply: 157 mA

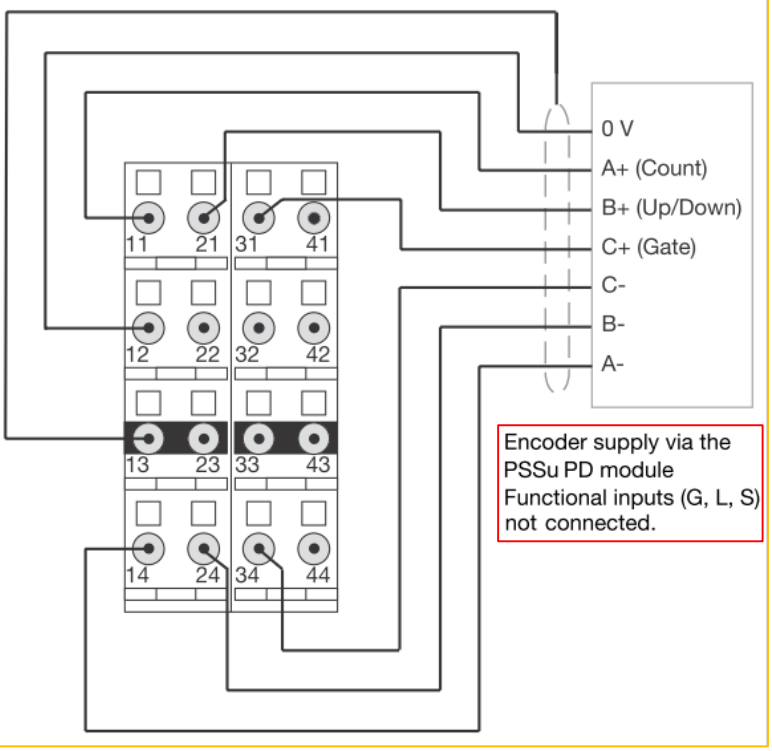
312280 PSSu E S INC
312628 PSSu BP 2/16S
312629 PSSu BP 2/16C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C
Coated version available (314xxx; '-T')

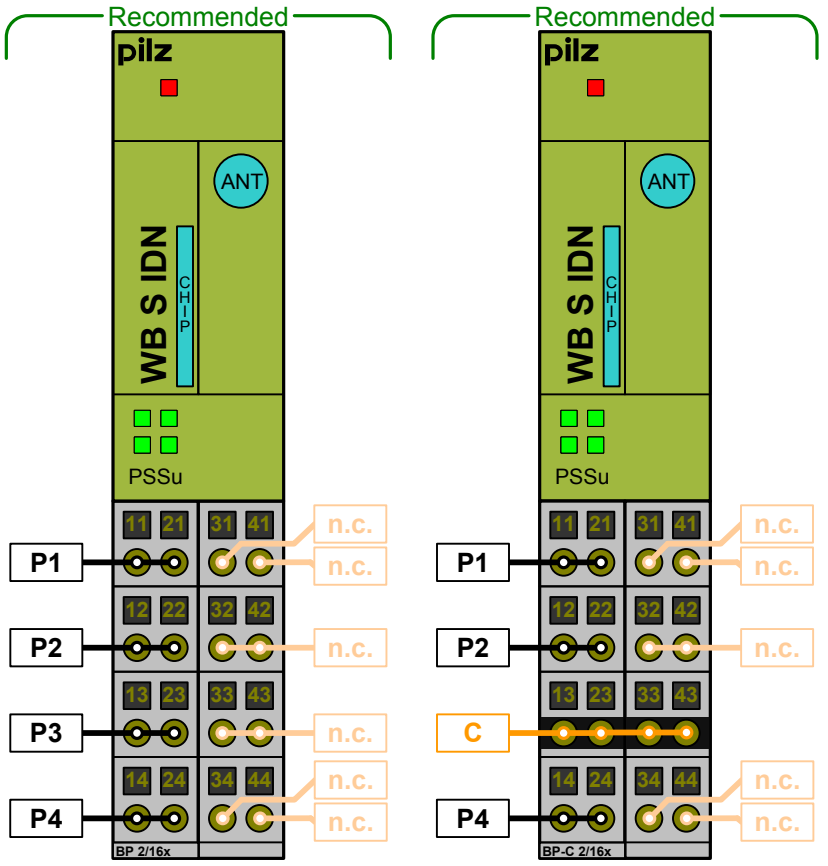
Addresses in the process image:
ST-PII: 9 Bytes divided into
1 x 32 Bit counter data plus
1 x 8 Bit counter status plus
1 x 32 Bit latch value/period length
ST-PIO: 5 Bytes divided into
1 x 32 Bit counter value plus
1 x 8 Bit control Byte

Incremental encoder operating mode



Counter operating mode





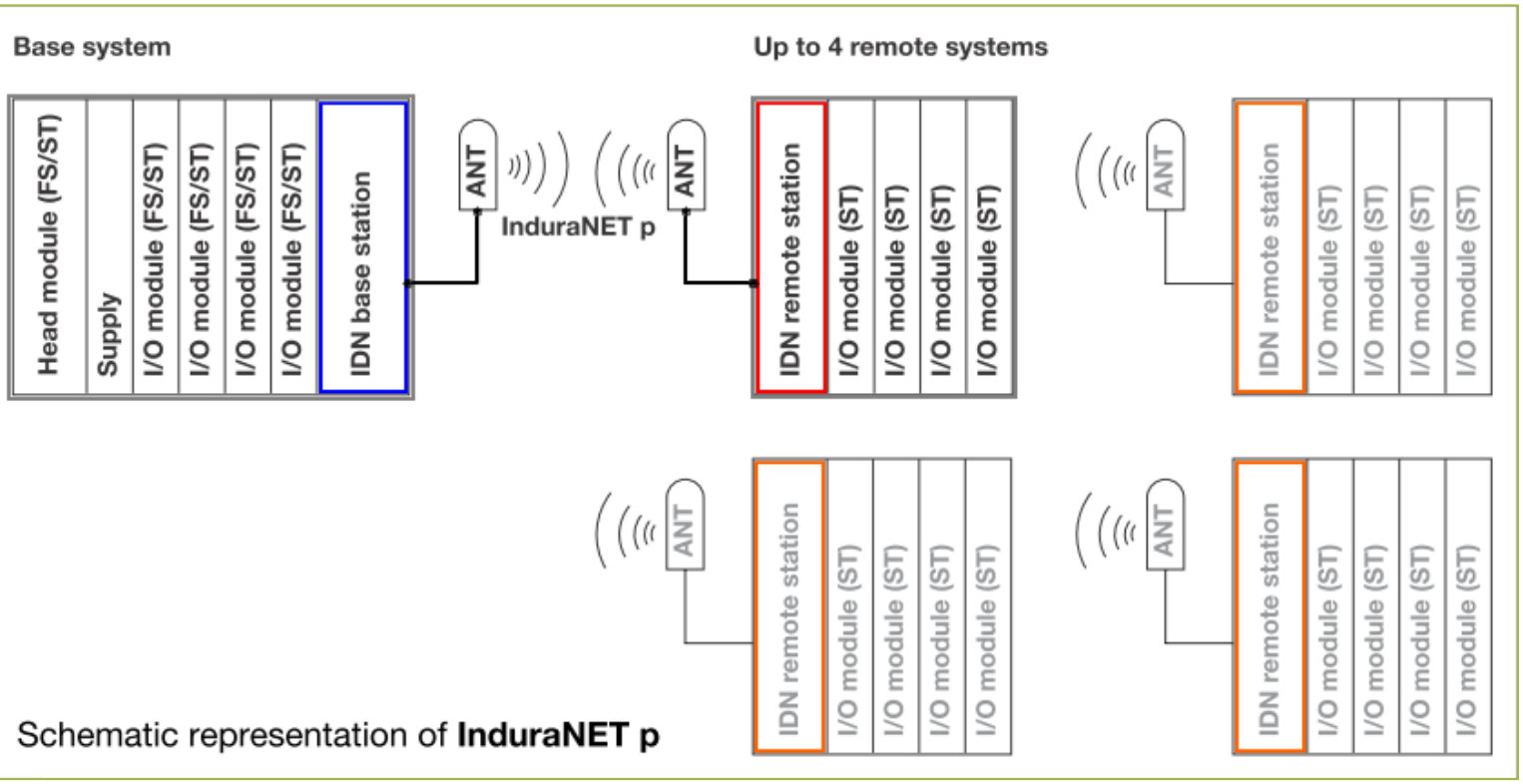
Standard electronic module

Module's device code: 0005h

Base station for InduraNET p
Data transmission
  Failsafe: No
  Standard: Yes
Max. number per PSSu system: 1
Position in system: End (base system)
Antenna terminal: Yes
Memory card: Yes
Supply voltage: Yes, passive
  (function is the same as for PSSu E PD1)
Module supply: 132 mA
Working frequency range: 2,405..2,479 MHz
Channel spacing: 1 MHz
Number of channels: 75
Modulation: GFSK
Frequency deviation: -160..160 kHz
Typ. transmitter output EIRP: 18 dBm/64 mW
Max. transmitter output EIRP:
  20 dBm/100 mW
Addresses in the process image: none

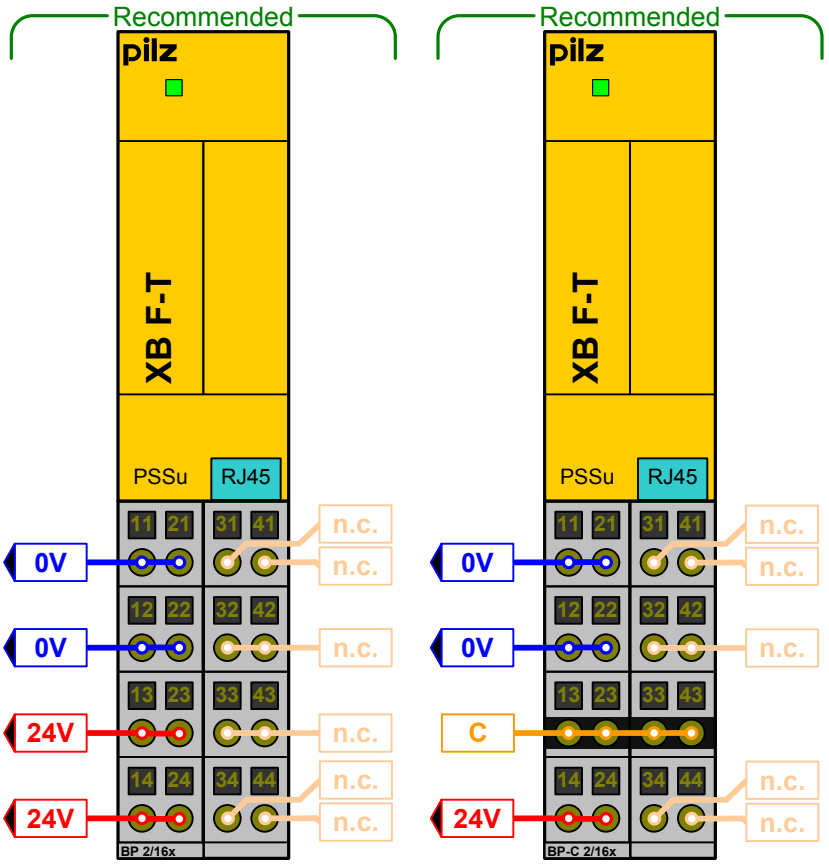
312095 PSSu WB S IDN (Base station with InduraNET p interface for ST data, including chip card)
312995 PSS ANT 1 IDN (System antenna, including antenna cable)
312996 PSS ANT 2 IDN (Diverse system antenna, including antenna cable)
312999 PSS CAB IDN 2 (System extension cable, 2 m)
312656 PSSu BS 2/8S
312657 PSSu BS 2/8C
312630 PSSu BP-C 2/16S
312631 PSSu BP-C 2/16C

Important Notes
Supply function is the same like PSSu E PD1.
In the end of each sub-system set terminal plate with circuit board inside PSSu A EC(-T) (312902/314902).



Schematic representation of **InduraNET p**

Operating Manual: 21840



Failsafe electronic module
(passiv)

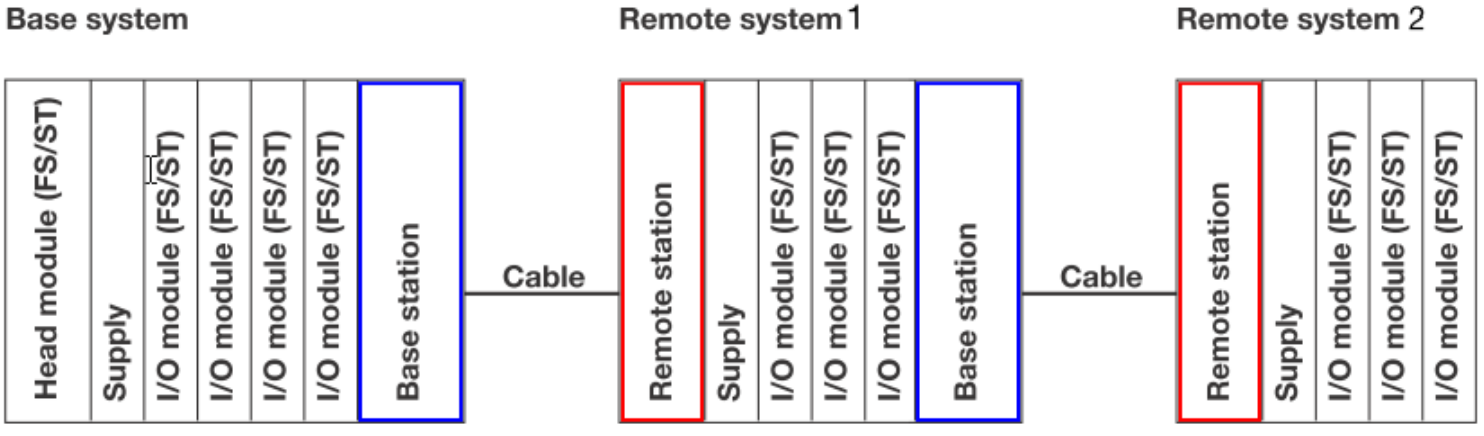
Module's device code: ----
Maximum number of modules per system: 2|2

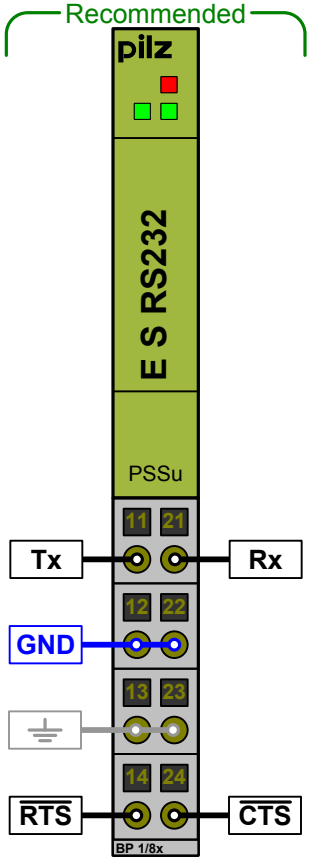
Module for cable-based partitioning of a PSSu system
Base station for cable connection
Data transfer:
  Failsafe: Yes
  Standard: Yes
Max. number:
  PSSu system without InduraNET p: 2
  Base system InduraNET p: 2
  Remote system InduraNET p: 2
Position in the subsystem: End
Memory card: No
Supply voltage: Yes, active
    (function is the same as for PSSu E PD)
Periphery supply: 10 mA (without load)
Module supply: No extraction (0 mA)
Addresses in the process image: none

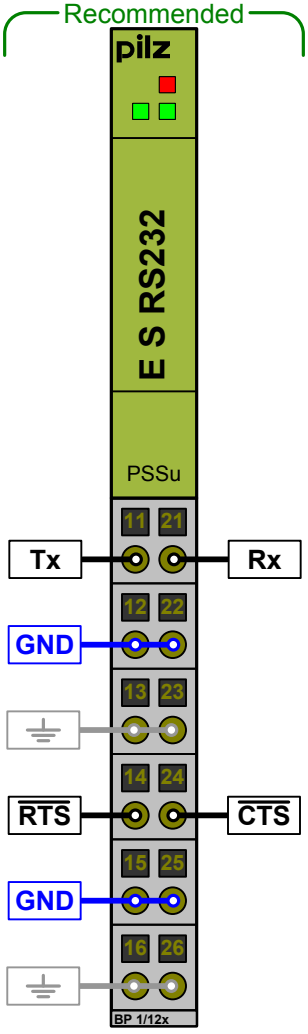
Coated version available (314xxx; '-T')
[can be used as/with normal modules 312xxx]
314092 PSSu XB F-T (Base station)
314094 Connection cable
       PSSu A RJ45-CAB 1.5M
314628 PSSu BP 2/16S-T
314629 PSSu BP 2/16C-T
314630 PSSu BP-C 2/16S-T
314631 PSSu BP-C 2/16C-T

Important Notes
#Supply function is the same like PSSu E PD.
#After PSSu XB F-T set terminate plate:
   PSSu A EC XB (312969, no circuit board)
 It is include in package of PSSu XR F-T(!)
#In the end of hole PSS 4000 system set
 terminal plate with circuit board inside:
   PSSu A EC(-T) (312902/314902)
 It is include in package of head module(!)

Cable connection PSSu XB F-T – PSSu XR F-T







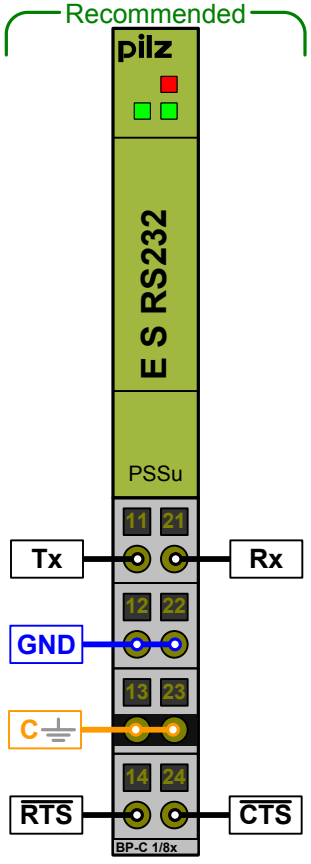
Standard electronic module

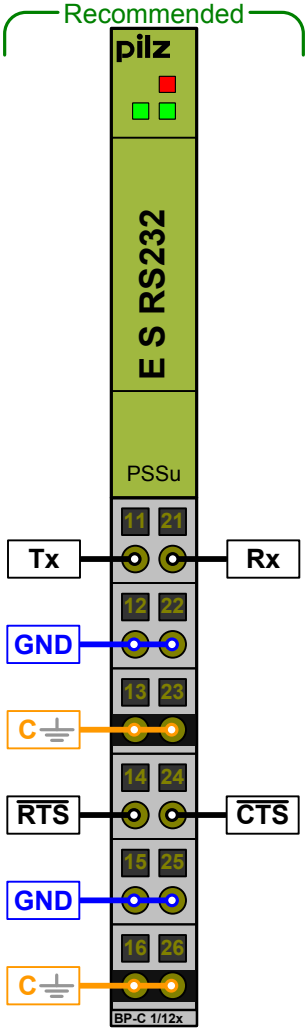
Module's device code: 0720h
Maximum number of modules per system: 6|16

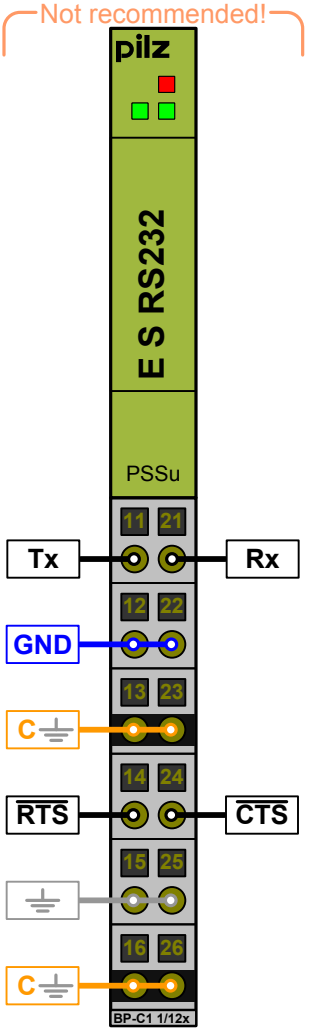
Data transfer: Failsafe: No
Standard: Yes
Communication channels: 2 (Tx/Rx, full duplex)
Transmission rates (Baud [Bit/s]): 300, 600, 1200, 2400, 4800, 9600 (default), 19200

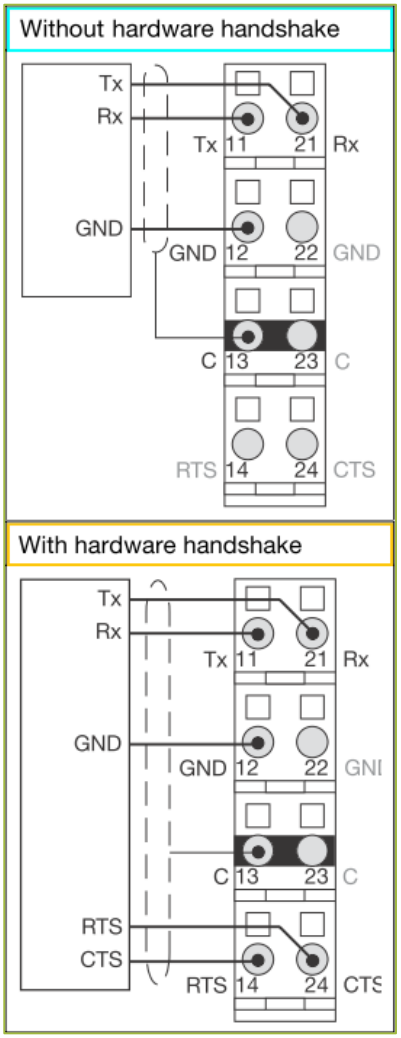
Max. cable length: 15 m
Max. number per PSSu system: 6
Position in the system: any
Periphery supply: 10 mA
Module supply: 101 mA
Size of Receive buffer: 1024 Byte
Size of Send buffer: 128 Byte
Addresses in the process image:
ST-PII: 10 Byte of these
Usable data: 8 Byte
Status Bytes: 2 Byte
ST-PIO: 10 Byte of these
Usable data: 8 Byte
Control Bytes: 2 Byte

312515 PSSu E S RS232
312600 PSSu BP 1/8S — 312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S — 312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S — 312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S — 312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S — 312623 PSSu BP-C1 1/12C
Coated version available (314xxx; '-T')
314515 PSSu E S RS232-T
314600 PSSu BP 1/8S-T — 314601 PSSu BP 1/8C-T …

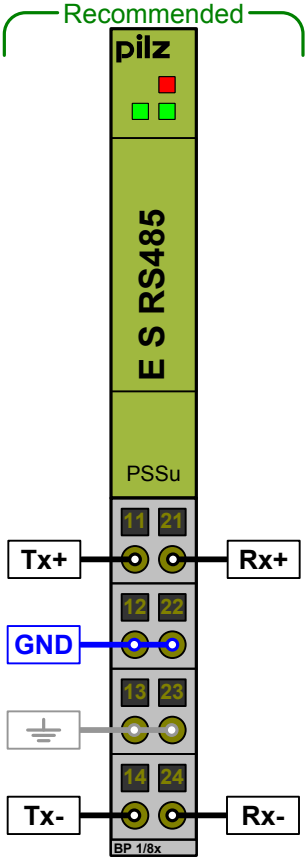




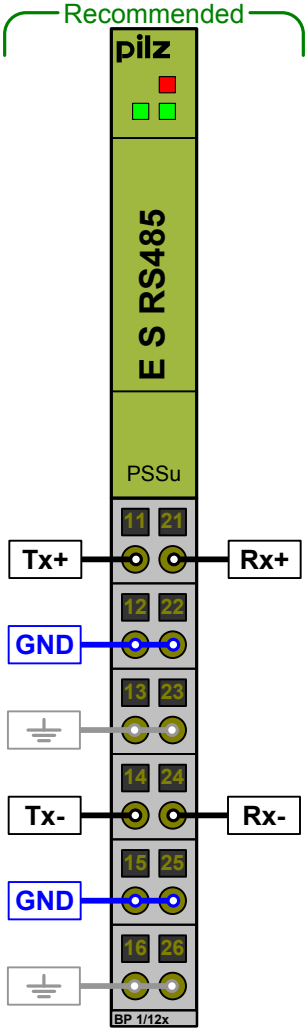




Recommended



Recommended



Standard electronic module

Module's device code: 0721h
Maximum number of modules per system: 6|16

Data transfer: Failsafe: No
Standard: Yes
Communication channels: 2 (Tx/Rx, full duplex)
Transmission rates (Baud [Bit/s]): 300, 600, 1200, 2400, 4800, 9600 (default), 19200

Max. cable length: 1000 m
Max. number per PSSu system: 6
Position in the system: any
Periphery supply: 10 mA
Module supply: 101 mA
Receive buffer: 1024 Byte
Send buffer: 128 Byte
Addresses in the process image:
ST-PII: 10 Byte of these
Usable data: 8 Byte
Status Bytes: 2 Byte
ST-PII: 10 Byte of these
Useable data: 8 Byte
Control Bytes: 2 Byte

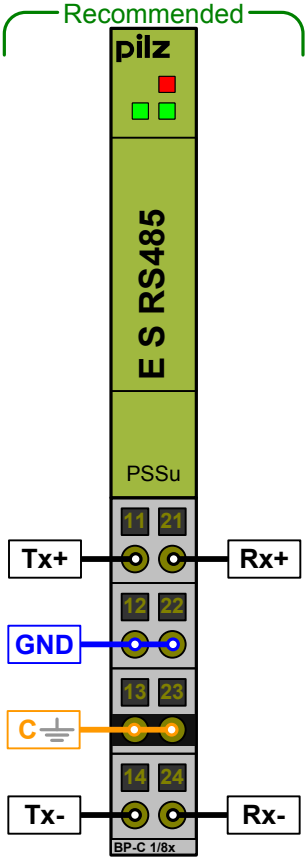
312516 PSSu E S RS485

312600 PSSu BP 1/8S	312601 PSSu BP 1/8C
312610 PSSu BP-C 1/8S	312611 PSSu BP-C 1/8C
312618 PSSu BP 1/12S	312619 PSSu BP 1/12C
312620 PSSu BP-C 1/12S	312621 PSSu BP-C 1/12C
312622 PSSu BP-C1 1/12S	312623 PSSu BP-C1 1/12C

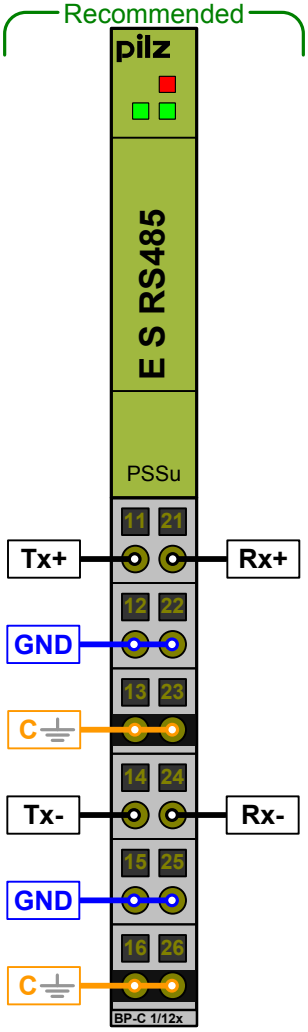
Coated version available (314xxx; '-T')

314516 PSSu E S RS485-T	
314600 PSSu BP 1/8S-T	314601 PSSu BP 1/8C-T …

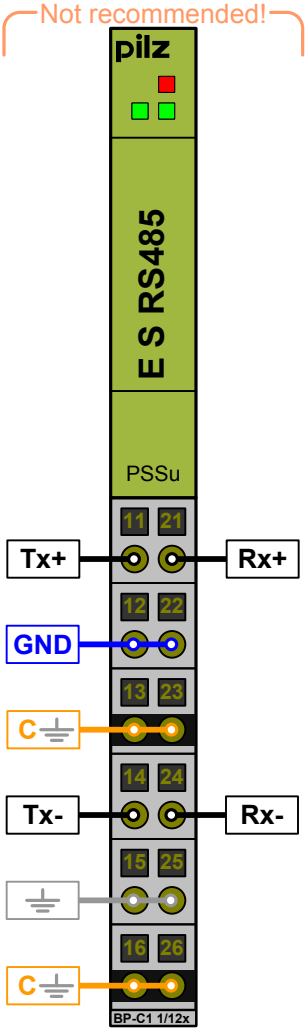
Recommended



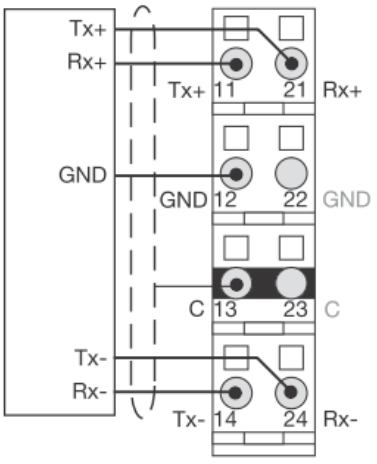
Recommended



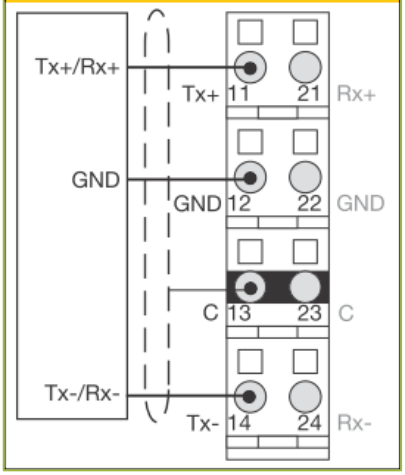
Not recommended!



Full duplex mode



Half duplex mode



PILZ

THE SPIRIT OF SAFETY

IP20

K-Series

Compact Modules

Connections on compact modules

Connections on the compact modules

The connections on the compact modules are divided into terminal rows. Single or three-row connectors with spring-loaded terminals can be plugged into the device's single-row 10-pin connector strip.

The function of the connections depends on the compact module.

- Terminal row 1

  Connection of the inputs and outputs, periphery supply (24 V and 0 V).

- Terminal row 2

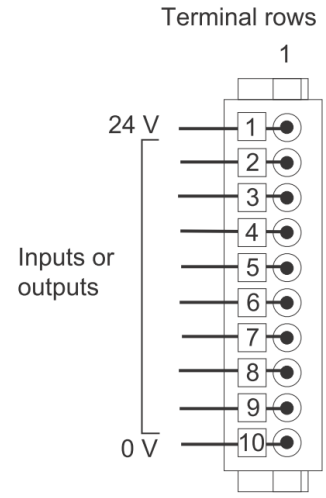
  All connections are linked; bridged to the 24 V periphery supply connection from the first connection level

- Terminal row 3

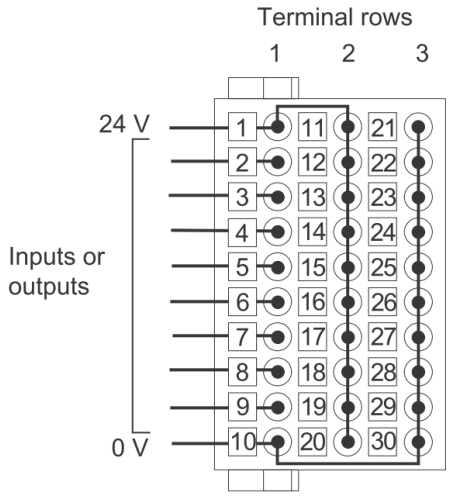
  All connections are linked; bridged to the 0 V periphery supply connection from the first connection level

Input/output modules can be installed in any order. However, for the connection diagram to be consistent it makes sense to arrange input/output modules of the same type into groups.

Single-row connector



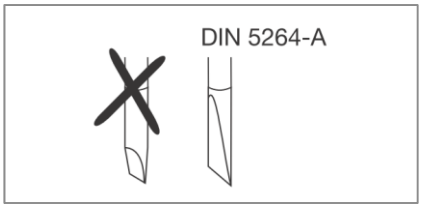
Three-row connector



Note:
The **C-rail connector** of compact modules has been removed.
The internal transmission of C-rail signal through these modules is no longer possible.

Wiring compact modules

We recommend you use a screw driver with a 0.4 x 2.5 mm (DIN 5264) blade!



Strip the cable:

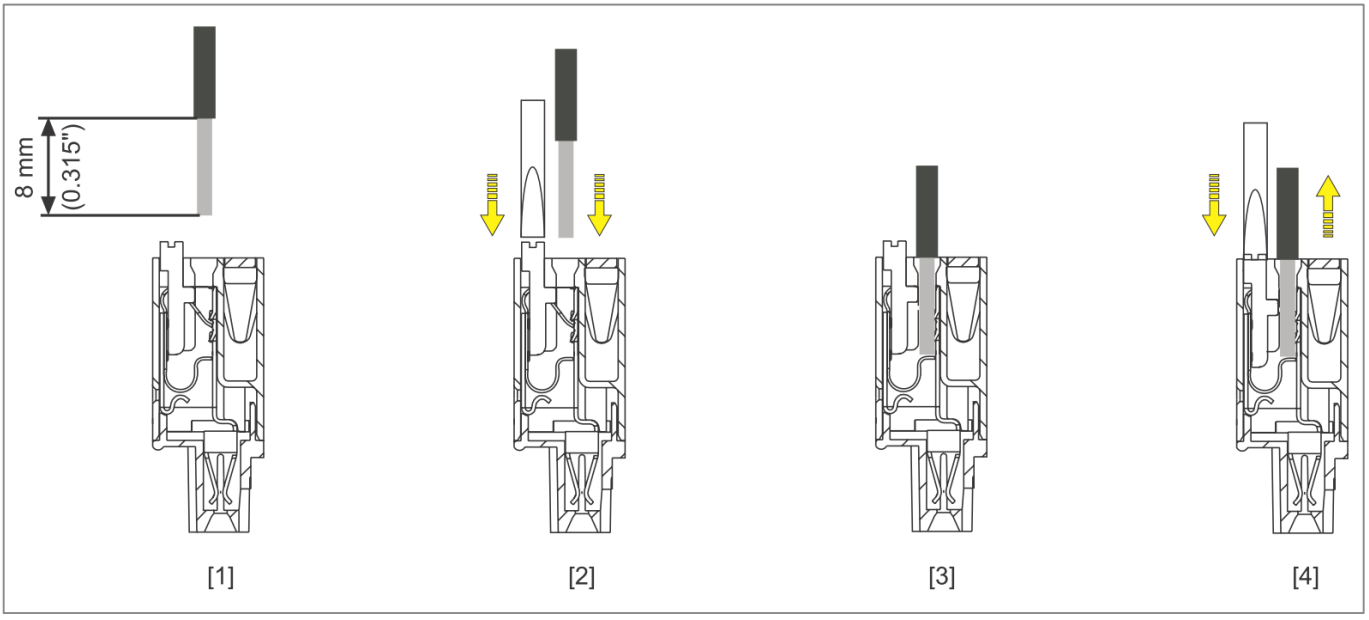
- Strip the cable [1] and apply a ferrule if necessary (DIN 46228/Part 1 or DIN 46228/Part 4).

Connect cable:

- Using the screwdriver, press the actuator button on the spring-loaded terminal down as far as it will go [2], keep it held down and insert the stripped cable into the plug connection as far as it will go [2].
- Check that the cable is firmly seated [3].

Disconnect cable:

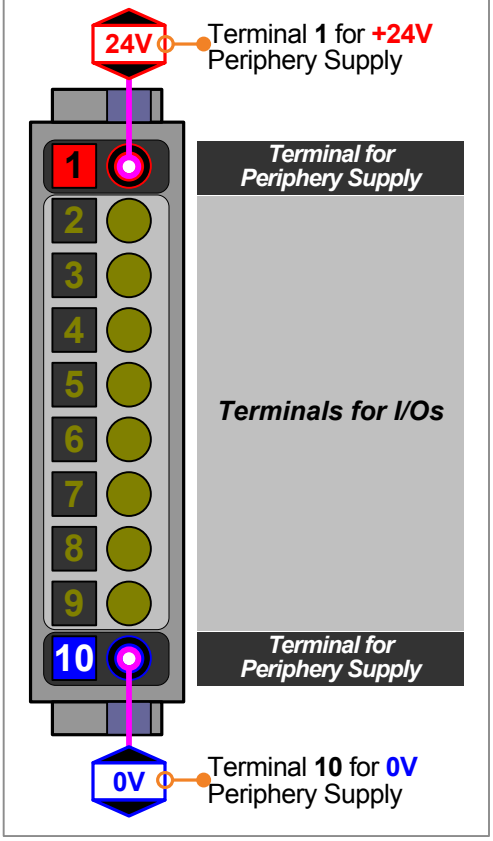
- Using the screwdriver, press the actuator button down as far as it will go [4], keep it held down and pull the cable out of the plug connection [4].



Cable requirements

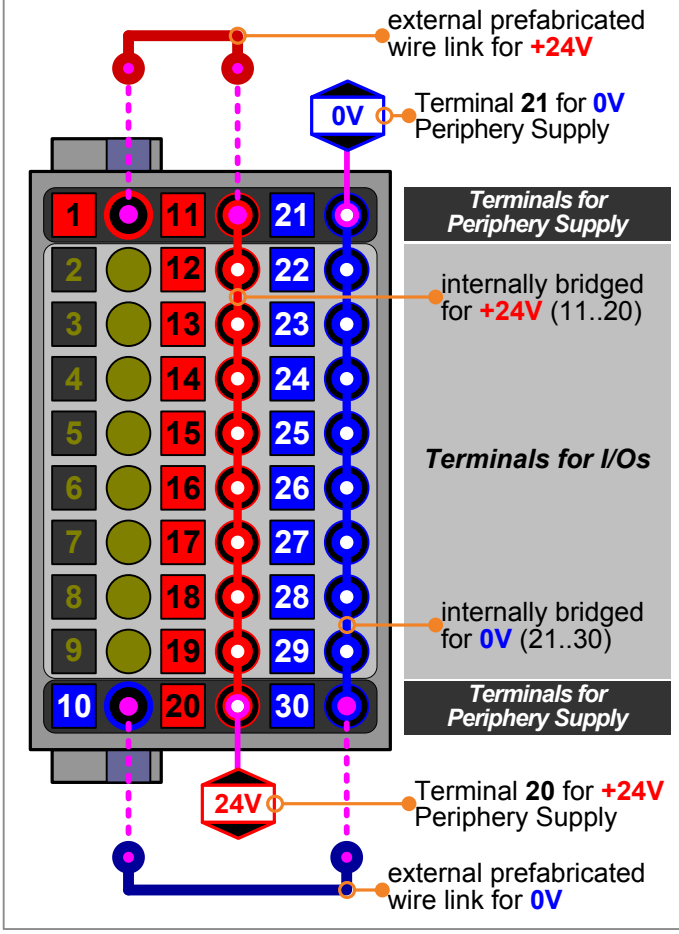
- The cross section of the external conductor on the spring-loaded terminals is 0.20 – 1.50 mm^2, 22 -16 AWG.
- If you are using multi-core or fine-core cables we recommend ferrules in accordance with DIN 46228/Part 1 or DIN 46228/Part 4, 0.2 ... 1.5 mm^2. To crimp the ferrules we recommend crimping pliers (crimp form A) conforming to EN 60947-1, such as the PZ 6/5 from Weidmüller, for example.
- Terminal points per connection: 1
- Stripping length: 8 mm

Plug with 10 poles (BL-I/O)
PSSu A Con 1/10 C



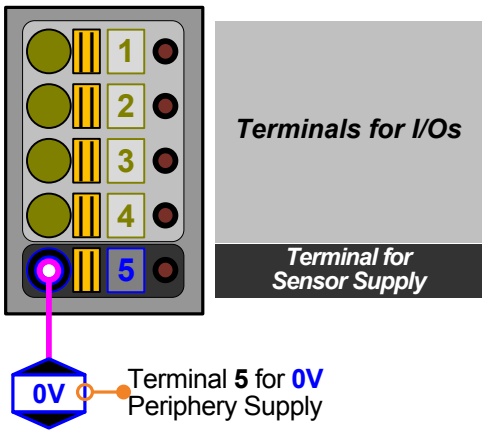
313115 PSSu A Con 1/10 C
Connector with spring-loaded terminals
1-row/10-pin
scope of supply: 2 pieces

Plug with 30 poles (BL-I/O)
PSSu A Con 3/30 C



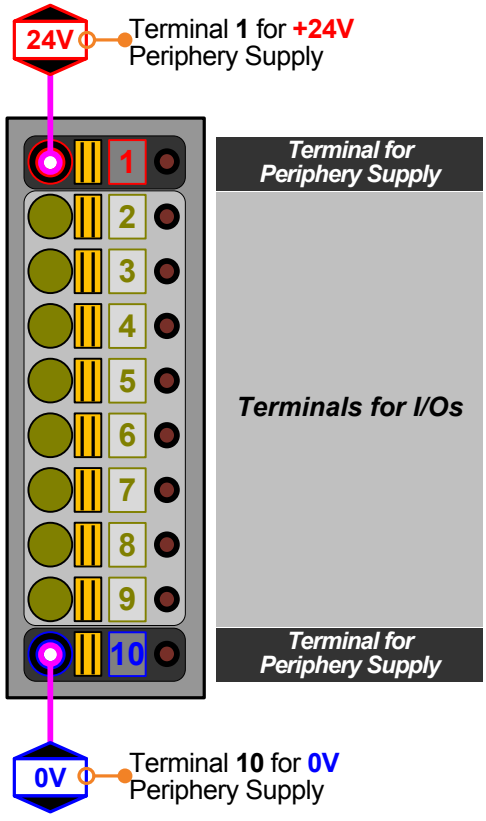
313116 PSSu A Con 3/30 C
Connector with spring-loaded terminals
3-row/30-pin
scope of supply: 2 pieces

Plug with 5 poles (SPRINGCON)
PSSu A Con Set1 C

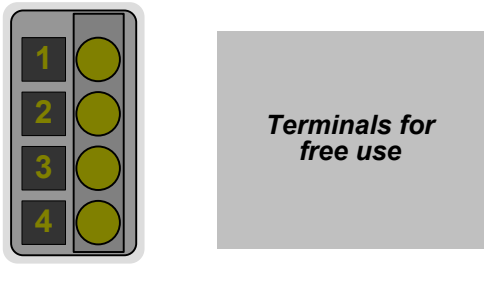


313114 PSSu A Con Set1 C
Set consisting of connectors with springloaded terminals
1-row/5-pin and 1-row/10-pin
scope of supply: 2 pieces

Plug with 10 poles (SPRINGCON)
PSSu A Con Set1 C



Plug with 4 poles (SPRINGCON)
PSSu A Con 4 S/C

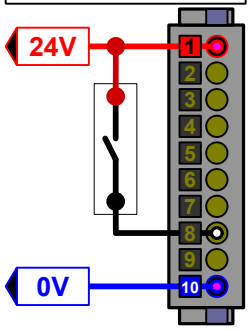


313117 PSSu A Con 4 S
Connector with screw terminals
1-row/4pin
scope of supply: 1 piece

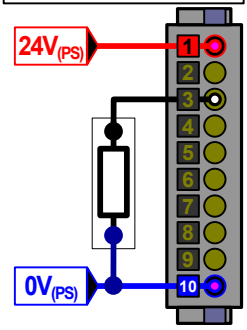
313118 PSSu A Con 4 C
Connector with springloaded terminals
1-row/4pin
scope of supply: 1 piece

Plug with 10 poles

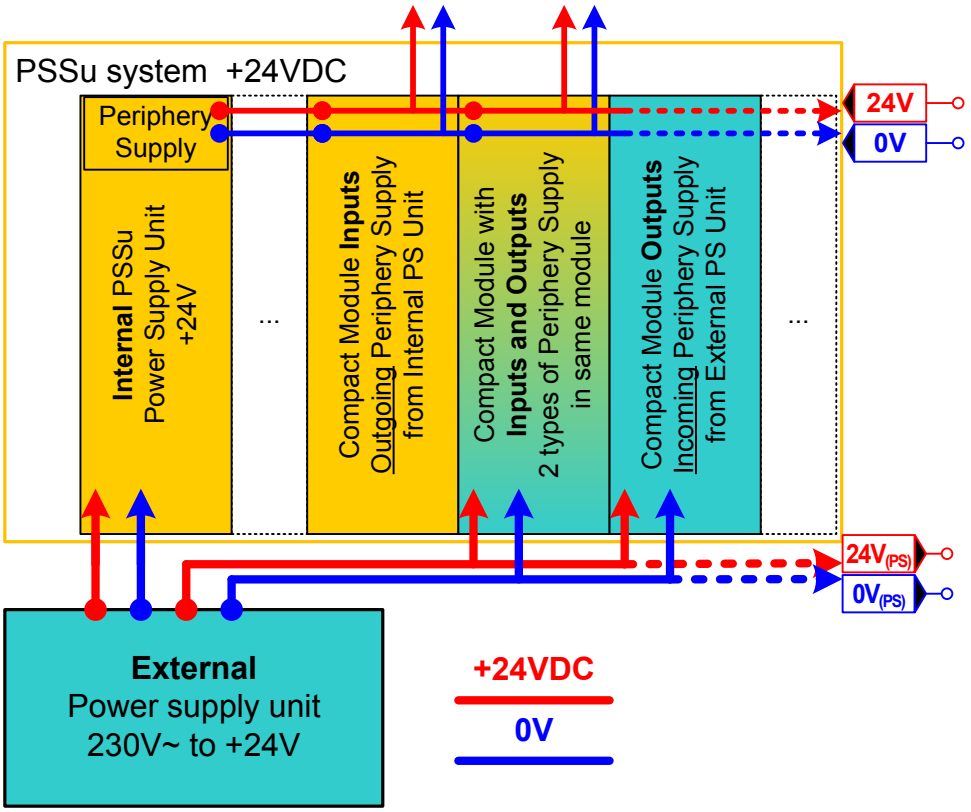
Sensor connection



Actuator connection

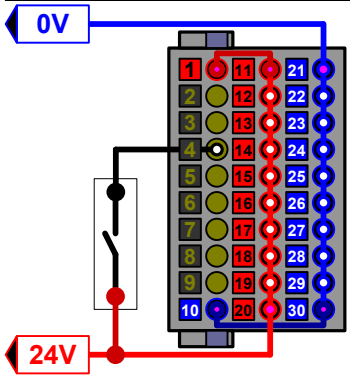


Overview of Power Supply Distribution of K-Modules
Only Periphery Supply

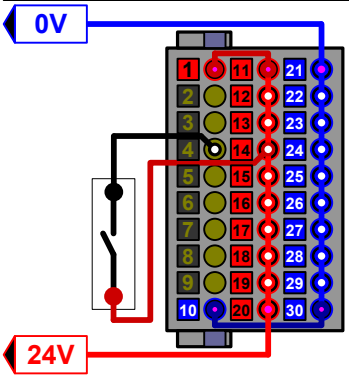


Plug with 30 poles

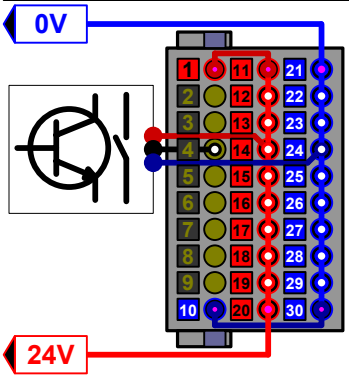
Sensor connection (1-wire)



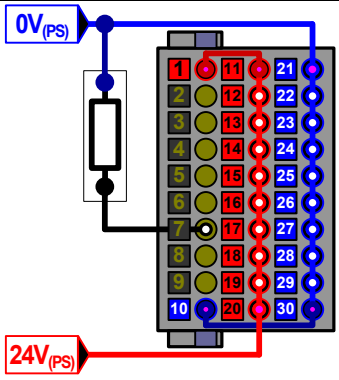
Sensor connection (2-wire)



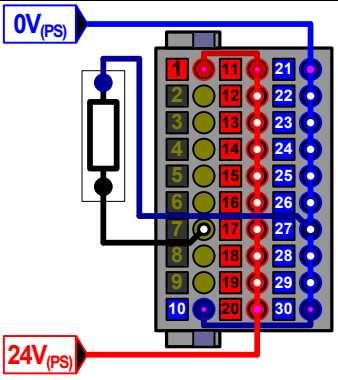
Sensor connection (3-wire)



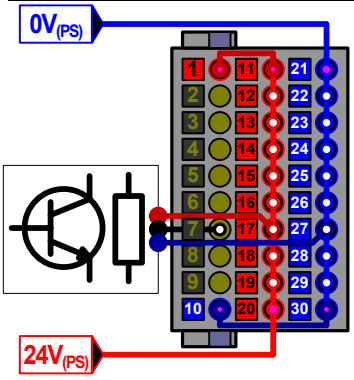
Actuator connection (1-wire)

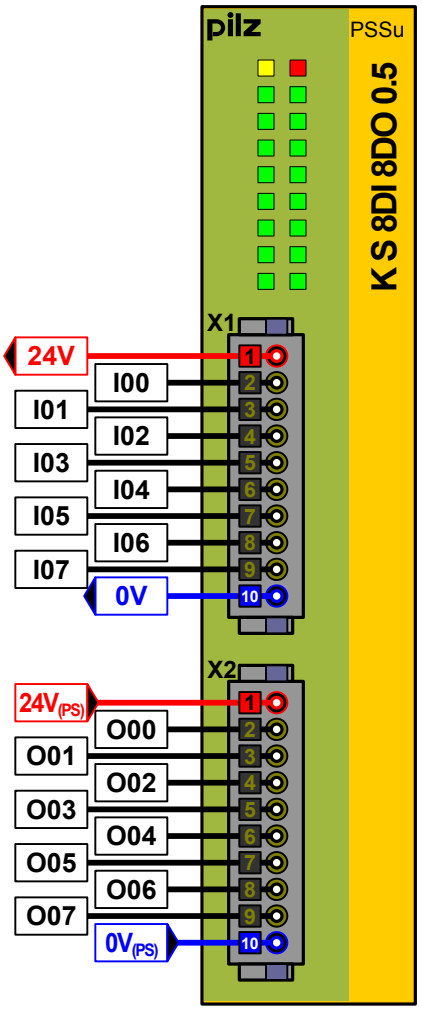


Actuator connection (2-wire)



Actuator connection (3-wire)



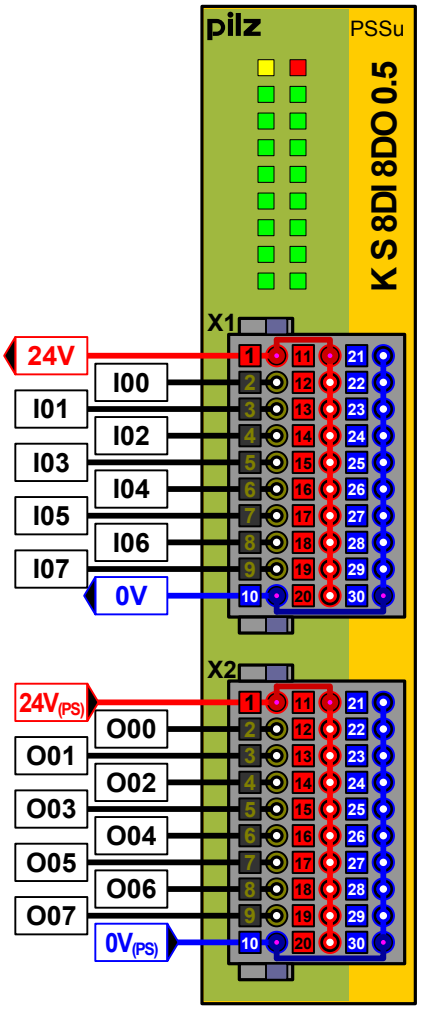


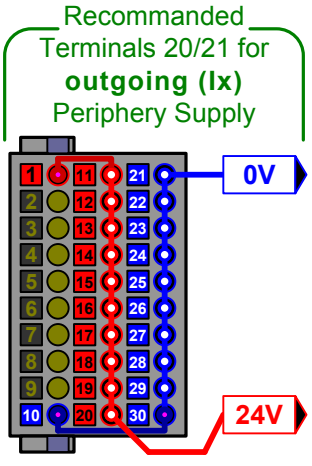
Standard compact module

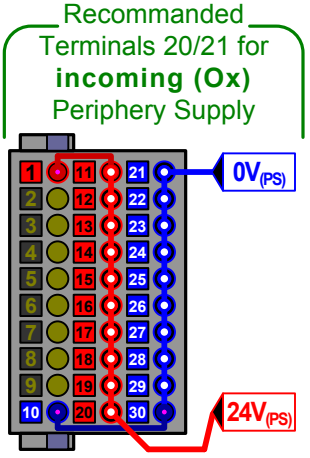
Module's device code: 0630h

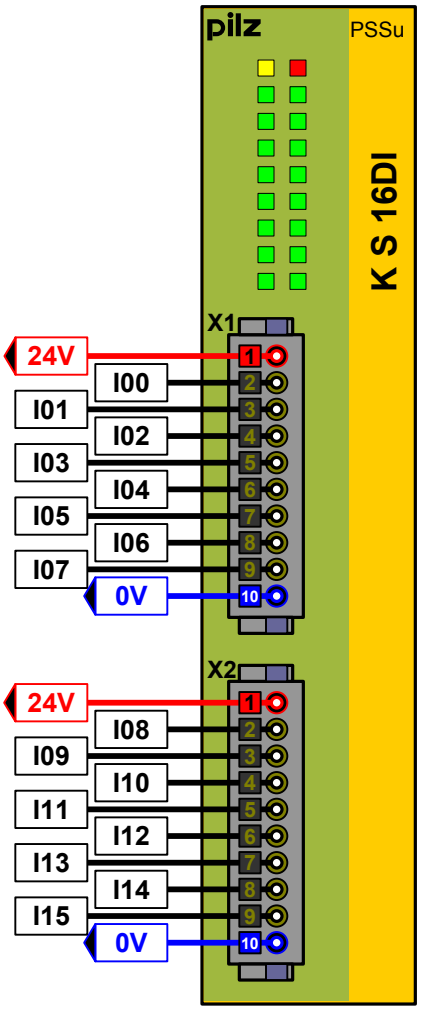
Digital ST inputs: 8
Digital ST outputs: 8 (single-pole)
Load current periphery supply:
  max. 0.5 A per output
Total current of outputs: max. 4 A/24 V DC
Periphery supply: 47 mA (without load)
Module supply: 45 mA
Addresses in the process image:
  ST-PIO: 8 Bit (1 Byte)
  ST-PII: 8 Bit (1 Byte)

312431 PSSu K S 8DI 8DO 0.5
313115 PSSu A Con 1/10 C (2 pieces)
313116 PSSu A Con 3/30 C (2 pieces)
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)







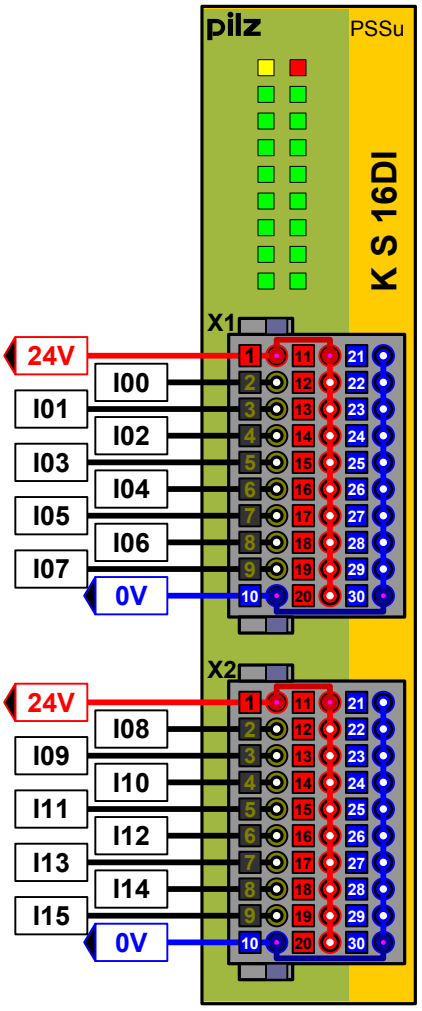


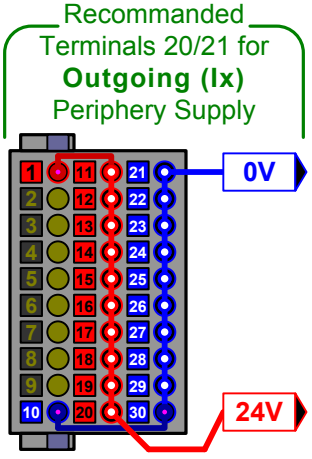
Standard compact module

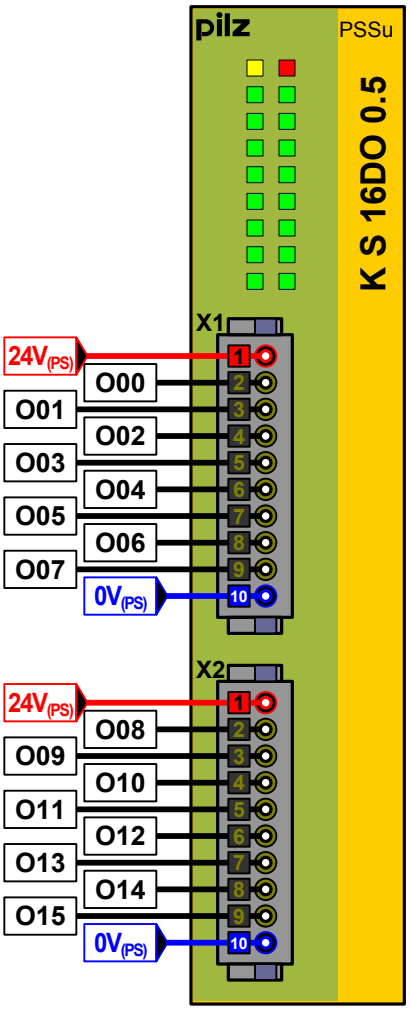
Module's device code: 0230h

Digital ST inputs: 16
Periphery supply: 0 mA
Module supply: 47 mA
Addresses in the process image:
ST-PII: 16 Bit (2 Byte)

312430 PSSu K S 16DI
313115 PSSu A Con 1/10 C (2 pieces)
313116 PSSu A Con 3/30 C (2 pieces)
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)





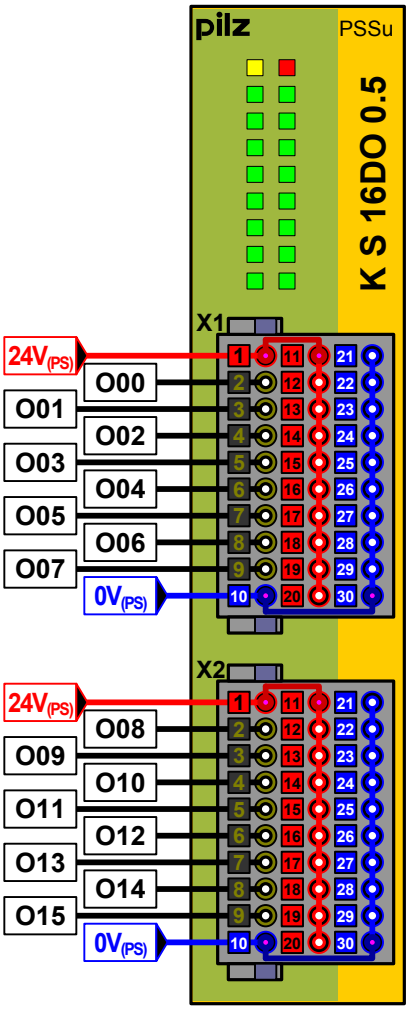


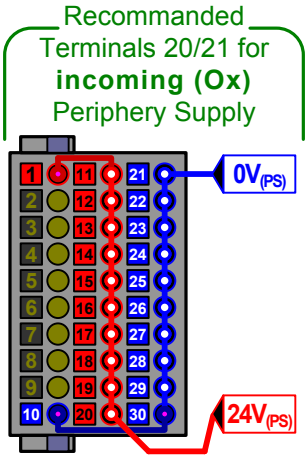
Standard compact module

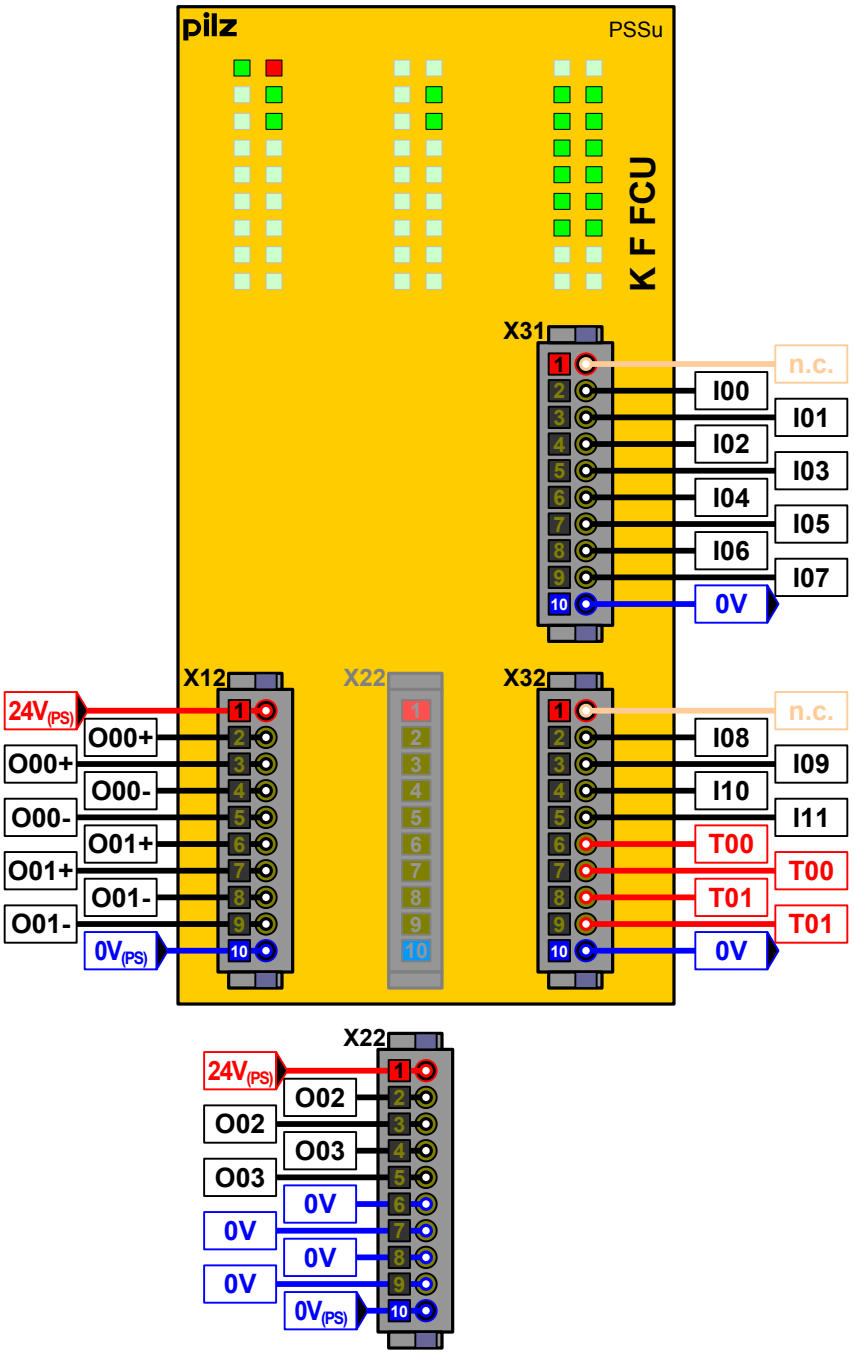
Module's device code: 0430h

Digital ST outputs: 16 (single-pole)
Load current periphery supply:
  max. 0.5 A per output
Total current of outputs: max. 8 A/24 V DC
Periphery supply: 77 mA (without load)
Module supply: 40 mA
Addresses in the process image:
  ST-PIO: 16 Bit (2 Byte)

312432 PSSu K S 16DO 0.5
313115 PSSu A Con 1/10 C (2 pieces)
313116 PSSu A Con 3/30 C (2 pieces)
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)







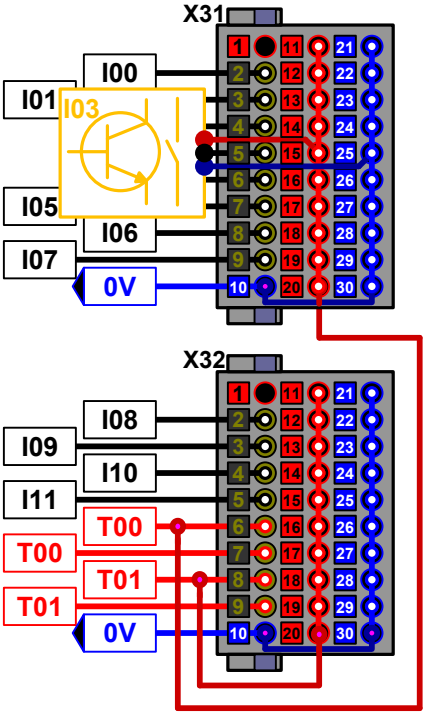
Failsafe compact module

Module's device code: 0E01h
Maximum number of modules per system: 12
Digital inputs:
 1-channel (up to): PL d / SIL CL 2
 2-channel (up to): PL e / SIL CL 3
 1-ch., pulsed light barrier : PL e/SIL CL 3
SC outputs (one pole):
 1-channel (up to): PL d / SIL CL 2
 2-channel (up to): PL e / SIL CL 3
SC outputs (dual pole):
 2-channel (up to): PL e / SIL CL 3

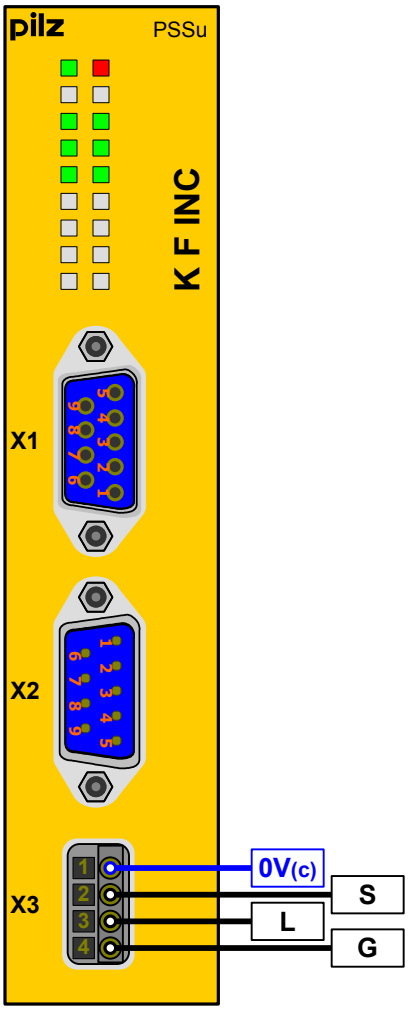
Digital FS inputs: 12 (8 for Fast Shutdown)
Test pulse outputs: 2 (configurable)
Digital FS outputs: 2 (dual-pole)
Digital FS outputs: 2 (single-pole)
   FS status bits: 8 (FS_I_FCU)
   FS control bits: 4 (FS_O_FCU)
Load current, periphery supply:
   0.2 A per output (test pulse)
   3.0 A per output (dual-pole)
   2.0 A per output (single-pole)
Load current, periphery supply of the outputs: max. 10 A/24 V DC
Periphery supply: 8 mA (without load)
Module supply: 250 mA
Addresses in the process image - Inputs:
   FS-PII: 12 Bit (I00..I11)
   InputData: 8 Bit (FS_I_FCU)
   [SwitchedOff: ARRAY[0..7] OF SAFEBOOL]
Addresses in the process image - Outputs:
   FS-PIO: 4 Bit (O00..O03)
   OutputData: 4 Bit (FS_O_FCU)
   [Mute: ARRAY[0..3] OF SAFEBOOL]

312435 PSSu K F FCU
313115 PSSu A Con 1/10 C (2 pieces > 2x!)
312965 PSSu A LC 0.2 (5 pieces)
312958 PSSu A LA0 (1080 pieces)

Example: Wiring only for FS inputs with
313116 PSSu A Con 3/30
as „Sensor connection (3-wire)“



n.c. .. not connected



Failsafe compact module

Module's device code: 0324h
2-channel (up to): PL e / SIL CL 3
Only with 2 sensors and 2 counter modules
See Operating Manual
Chap. Safety > Intended use

Operating mode (configurable):
Incremental encoder or
Counter

Incremental encoder

ST inputs for an incremental encoder:
A, B, C input
(5 V differential signal, RS 422)
Evaluation of counter pulses (configurable):
4-x evaluation
2-x evaluation
1-x evaluation
Input for special functions (configurable):
3 (24 V signal referenced to earth)
Gate input or
Input for external latch pulse or
Status input

Counter

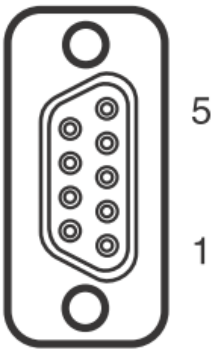
ST counter input:
1 (5 V differential signal, RS422)
Input for switching the counter direction:
1 (5 V differential signal, RS422)
Input for start/stop of the counter (Gate):
1 (24 V signal referenced to earth)

Resolution of incremental encoder/counter:
32 Bit
Max. detectable transmission rate at input:
5 MHz
Periphery supply: 15 mA (without load)
Module supply: 157 mA

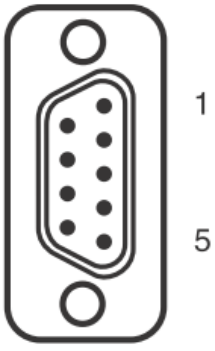
Addresses in the process image:
ST-PII: 9 Bytes divided into
1 x 32 Bit counter data plus
1 x 8 Bit counter status plus
1 x 32 Bit latch value/period length
ST-PIO: 5 Bytes divided into
1 x 32 Bit counter value plus
1 x 8 Bit control Byte

312437 PSSu K S INC
313117 PSSu A Con 4 S (1 piece)
313118 PSSu A Con 4 C (1 piece)
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)

Connection encoder signals	Layout
Female 9-pin D-Sub connector	**X1** 1: C+ 2: B+ 3: A+ 4: n. c. 5: 0 V 6: C- 7: B- 8: A- 9: U_p

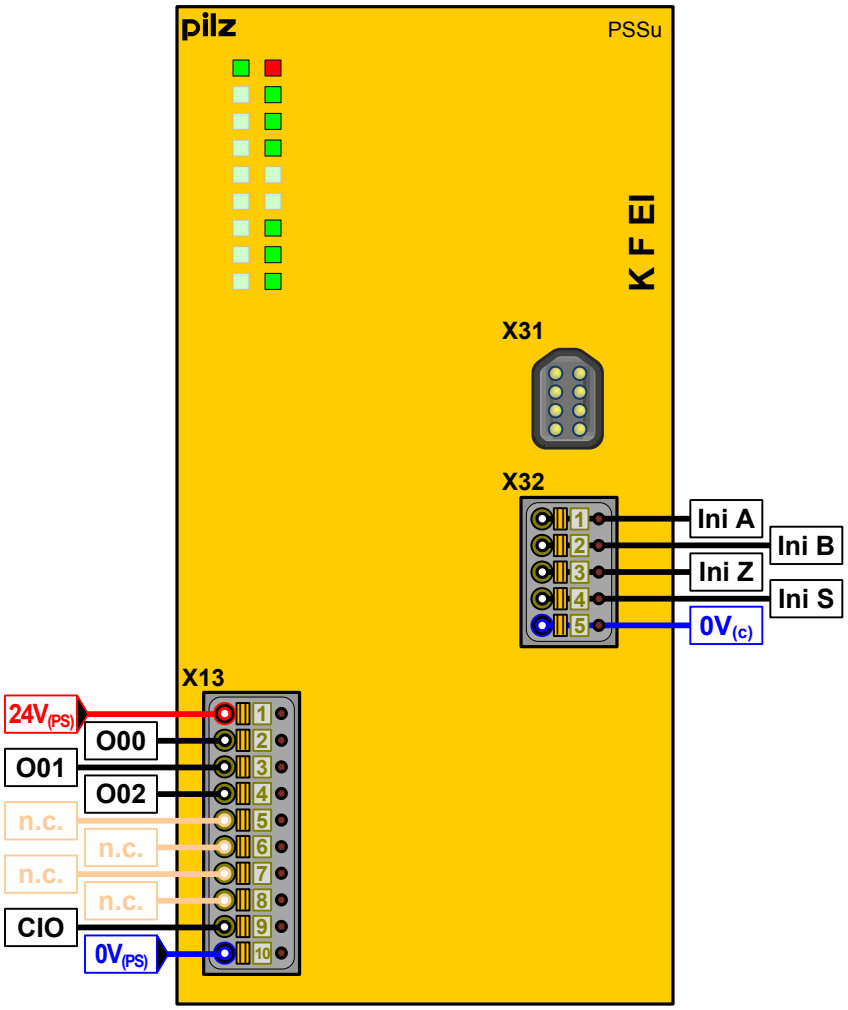


Connection control	Layout
Male 9-pin D-Sub connector	**X2** 1: C+ 2: B+ 3: A+ 4: n. c. 5: 0 V 6: C- 7: B- 8: A- 9: U_p



Connection functional outputs input devices	Layout
4-pin connector	**X3** 1: 0 V counter 2: Status S 3: Latch L 4: Gate G

n.c. .. not connected
U_P .. +5 V for sensor



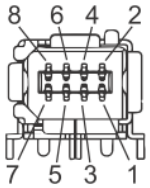
Failsafe compact module

Module's device code: 0F20h
Maximum number of modules per system: 0|8
(minus number of modules PSSu K F EI CV)
Logic (Digital inputs):
1-encoder (up to): PL d / SIL CL 2
2-encoder (up to): PL e / SIL CL 3
Safe encoder (up to): PL e / SIL CL 3
Logic (2-channel): PL e / SIL CL 3
SC outputs (one pole):
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
See Operating Manual for supplementary data

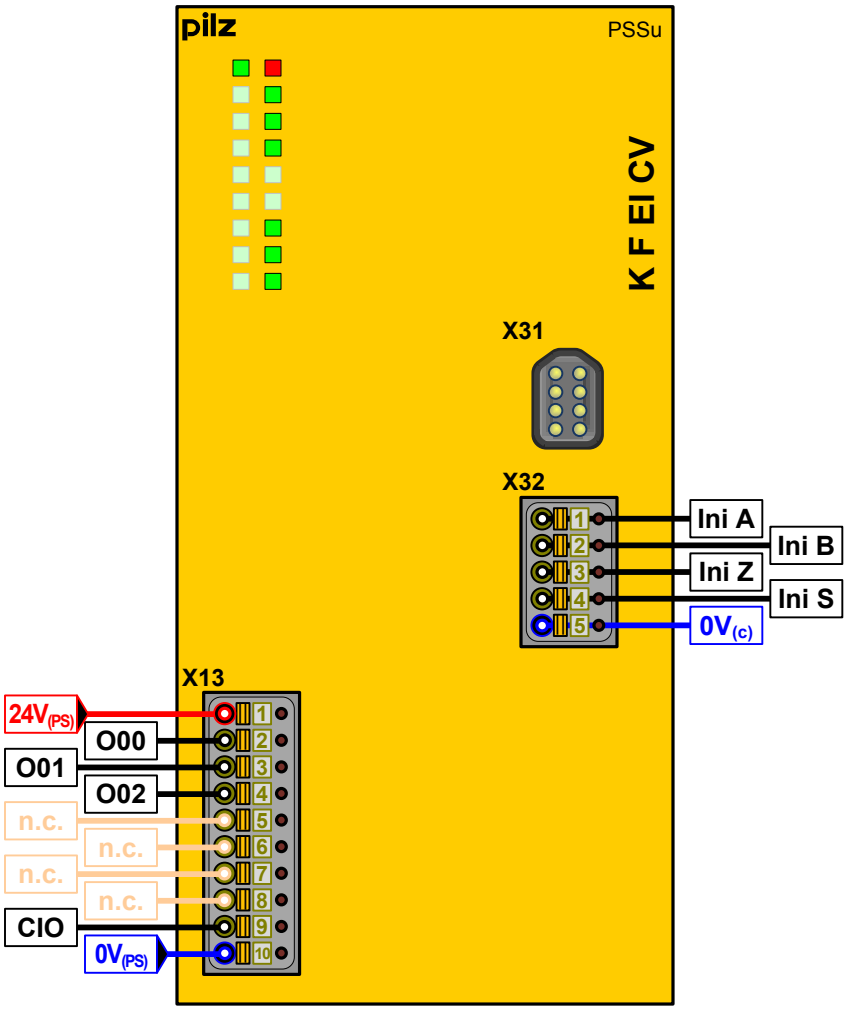
Digital FS inputs: 2 (proximity switches)
Counter FS input : 1 (encoder)
Digital FS outputs: 2 (single-pole)
FS output bits: 2
FS status bits: 2
FS control bits: 2
Digital ST output: 1 (single-pole)
Load current, periphery supply:
0.5 A per output (single-pole)
Load current, periphery supply of the outputs: max. 1.5 A/24 V DC
Periphery supply: 55 mA (without load)
Module supply: 230 mA
Addresses in the process image - Inputs:
See Operating Manual
Chap. Configuration > Access to I/O data
Addresses in the process image - Outputs:
See Operating Manual
Chap. Configuration > Access to I/O data

312433 PSSu K F EI
313114 PSSu A Con Set1 C (2 pieces)
312965 PSSu A LC 0.2 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
772200 MM A MINIIOCAB01 1.5 m
772201 MM A MINIIOCAB01 2.5 m
772202 MM A MINIIOCAB01 5.0 m

See Operating Manual for special wiring:
Connecting proximity switches
Connecting encoders
Connecting proximity switches & encoders
EMC-compliant wirings

Mini-IO socket 8-pin	PIN	HTL/TTL	Sin/Cos	Hiperface
	1	S (optional)	S (optional)	S (optional)
	2	GND	GND	GND
	3	Z	Z or index	
	4	A	Sin	Sin
	5	/A	-Sin	RefSin
	6	/Z	Z or index	
	7	B	Cos	Cos
	8	/B	-Cos	RefCos

Operating Manual: 1004290



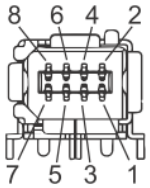
Failsafe compact module

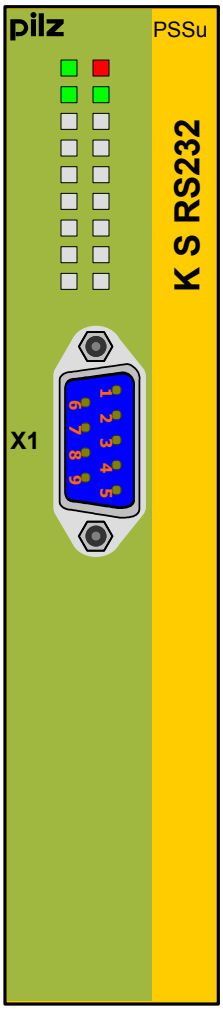
Module's device code: 0F24h
Maximum number of modules per system: 0|4
(minus number of modules PSSu K F EI > 4;
e.g.: 6x 312433 > only 2x 312434 possible)
Logic (Digital inputs):
1-encoder (up to): PL d / SIL CL 2
2-encoder (up to): PL e / SIL CL 3
Safe encoder (up to): PL e / SIL CL 3
Logic (2-channel): PL e / SIL CL 3
SC outputs (one pole):
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
See Operating Manual for supplementary data

Digital FS inputs: 2 (proximity switches)
Counter FS input : 1 (encoder)
Digital FS outputs: 2 (single-pole)
FS output bits: 2
FS status bits: 2
FS control bits: 2
Digital ST output: 1 (single-pole)
Load current, periphery supply:
0.5 A per output (single-pole)
Load current, periphery supply of the outputs: max. 1.5 A/24 V DC
Periphery supply: 55 mA (without load)
Module supply: 230 mA
Addresses in the process image - Inputs:
See Operating Manual
Chap. Configuration > Access to I/O data
Addresses in the process image - Outputs:
See Operating Manual
Chap. Configuration > Access to I/O data

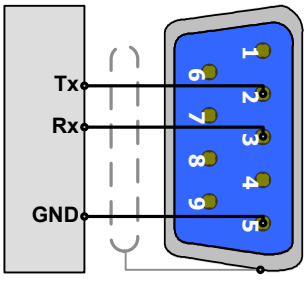
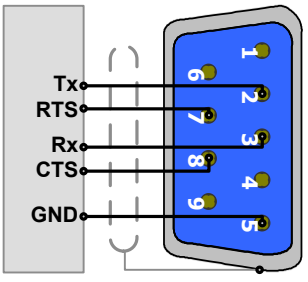
312434 PSSu K F EI
313114 PSSu A Con Set1 C (2 pieces)
312965 PSSu A LC 0.2 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
772200 MM A MINIIOCAB01 1.5 m
772201 MM A MINIIOCAB01 2.5 m
772202 MM A MINIIOCAB01 5.0 m

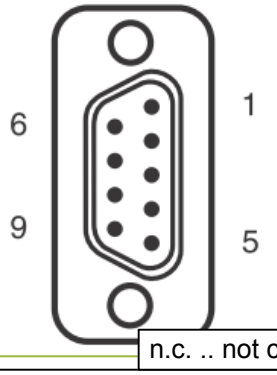
See Operating Manual for special wiring:
» Connecting proximity switches
» Connecting encoders
» Connecting proximity switches & encoders
» EMC-compliant wirings

Mini-IO socket 8-pin	PIN	HTL/TTL	Sin/Cos	Hiperface
	1	S (optional)	S (optional)	S (optional)
	2	GND	GND	GND
	3	Z	Z or index	
	4	A	Sin	Sin
	5	/A	-Sin	RefSin
	6	/Z	Z or index	
	7	B	Cos	Cos
	8	/B	-Cos	RefCos

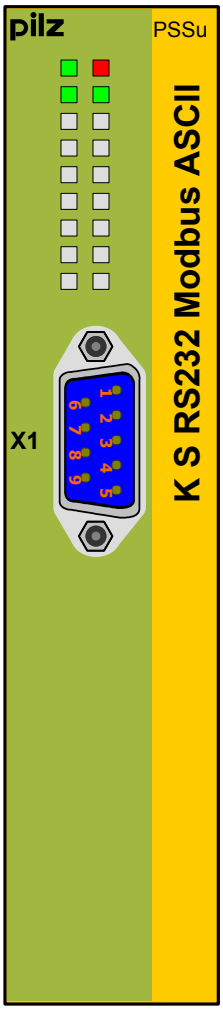



```
Standard compact module
-----------------------------------------
Module's device code: XXXXh
Maximum number of modules per system: 0|16
-----------------------------------------
Data transfer: Failsafe: No
               Standard: Yes
Communication channels:
  2 (Tx/Rx, full duplex)
Transmission rates (Baud [Bit/s]):
  300, 600, 1200, 2400, 4800,
  9600 (default), 19200
Max. cable length: 15 m
Max. number per PSSu system: 6
Position in the system: any
Periphery supply: 20 mA
Module supply: 125 mA
Size of Receive buffer: 1024 Byte
Size of Send buffer: 128 Byte
Addresses in the process image:
  ST-PII: 10 Byte of these
    Usable data: 8 Byte
    Status Bytes: 2 Byte
  ST-PIO: 10 Byte of these
    Usable data: 8 Byte
    Control Bytes: 2 Byte
-----------------------------------------
312439 PSSu K S RS232
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
-----------------------------------------
```

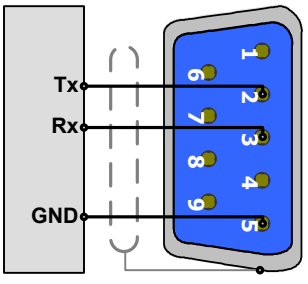
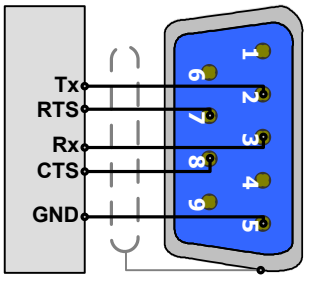
Without hardware handshake	With hardware handshake
	

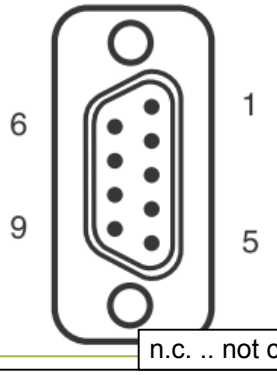
RS 232	Layout	X1
Male D-Sub connector	1: n.c. 2: Input Rx (receive data) 3: Output Tx (send data) 4: n.c. 5: GND 6: n.c. 7: Output RTS 8: Input CTS 9: n.c.	

n.c. .. not connected

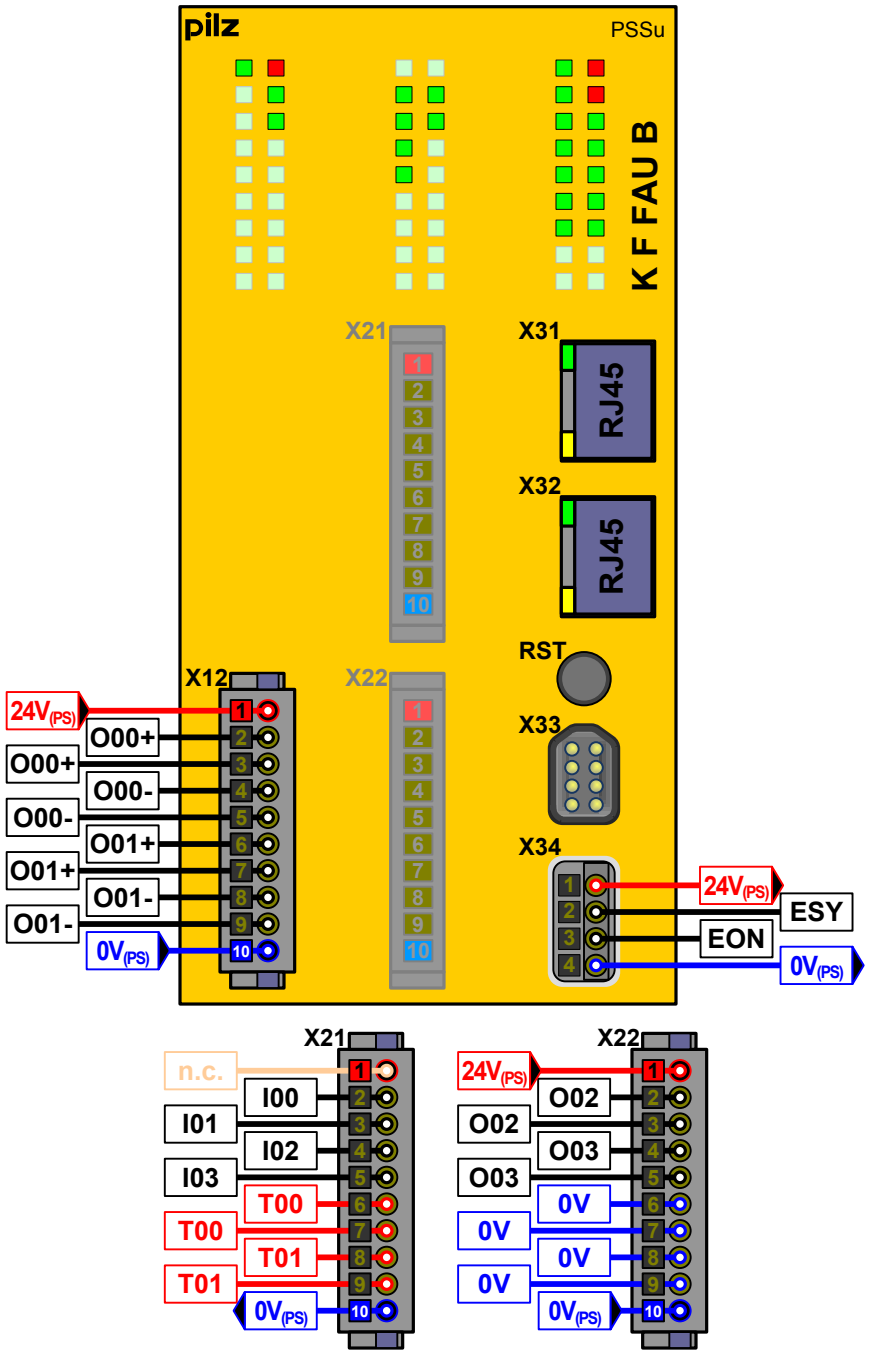



```
Standard compact module
-----------------------------------------
Module's device code: 0720h
Maximum number of modules per system: 0|16
-----------------------------------------
Data transfer: Failsafe: No
               Standard: Yes
Communication channels:
  2 (Tx/Rx, full duplex)
Transmission rates (Baud [Bit/s]):
  300, 600, 1200, 2400, 4800,
  9600 (default), 19200
Max. cable length: 15 m
Max. number per PSSu system: 6
Position in the system: any
Periphery supply: 20 mA
Module supply: 125 mA
Size of Receive buffer: 1024 Byte
Size of Send buffer: 128 Byte
Addresses in the process image:
  ST-PII: 10 Byte of these
    Usable data: 8 Byte
    Status Bytes: 2 Byte
  ST-PIO: 10 Byte of these
    Usable data: 8 Byte
    Control Bytes: 2 Byte
-----------------------------------------
312438 PSSu K S RS232 Modbus ASCII
312966 PSSu A LC 0.1 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
-----------------------------------------
```

Without hardware handshake	With hardware handshake
	

RS 232	Layout	X1
Male D-Sub connector	1: n.c. 2: Input Rx (receive data) 3: Output Tx (send data) 4: n.c. 5: GND 6: n.c. 7: Output RTS 8: Input CTS 9: n.c.	

n.c. .. not connected

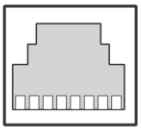


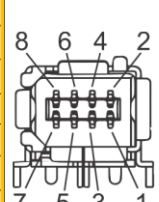
Failsafe compact module

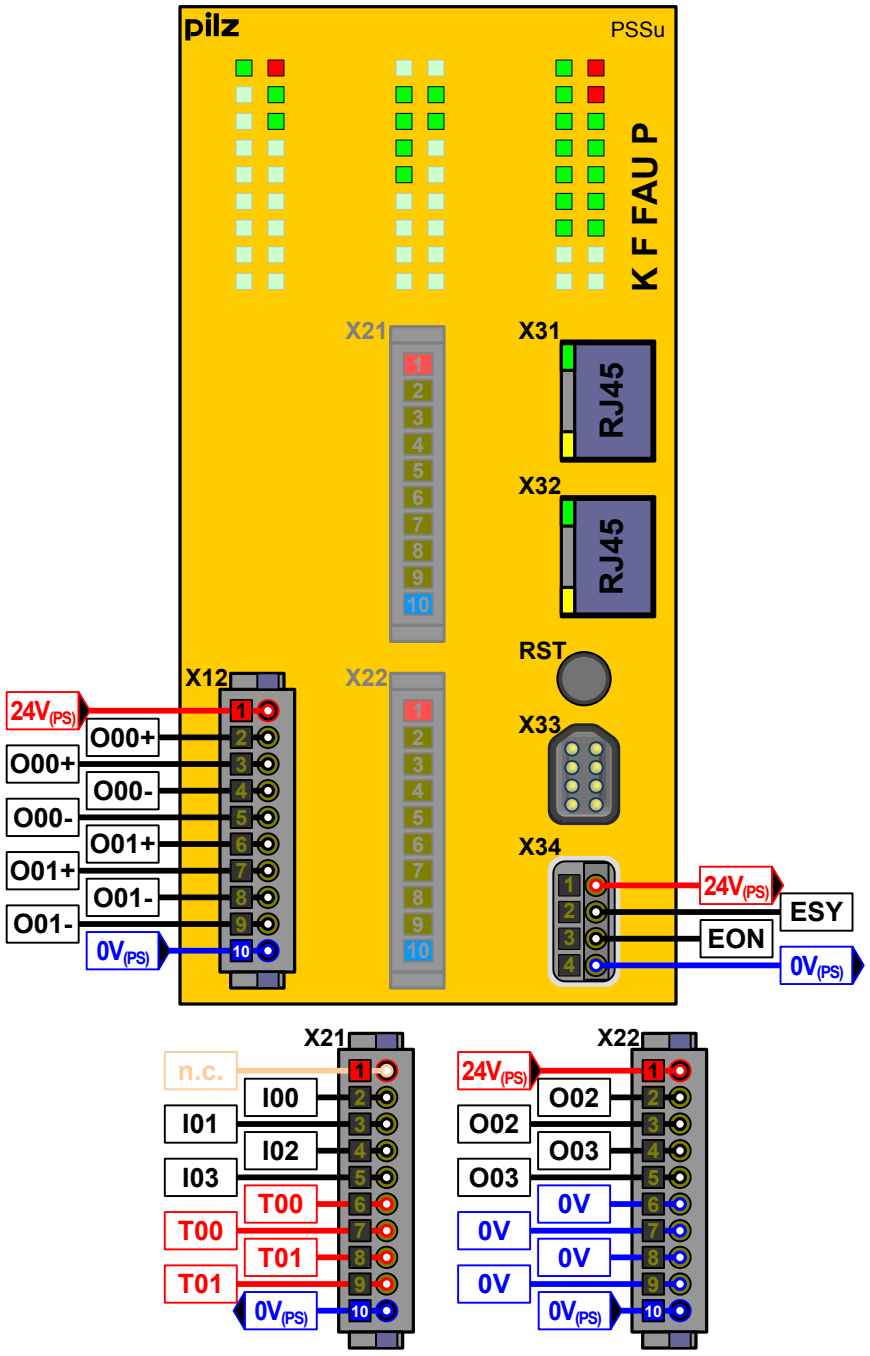
Module's device code: 0F22h
Maximum number of modules per system: 0|2
(minus number of modules PSSu K F FAU P)
Digital inputs:
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier : PL e/SIL CL 3
SC outputs (one pole):
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
SC outputs (dual pole):
2-channel (up to): PL e / SIL CL 3

Digital FS inputs: 4
Test pulse outputs: 2 (configurable)
Digital FS outputs: 2 (dual-pole)
Digital FS outputs: 2 (single-pole)
FS status bits: 30
FS control bits: 25
Load current, periphery supply:
0.25 A per output (test pulse)
3.0 A per output (dual-pole)
2.0 A per output (single-pole)
Load current, periphery supply of the outputs: max. 10 A/24 V DC
Periphery supply: 25 mA (by module)
Periphery supply: 175 mA (by load)
Module supply: 1,000 mA (by module)
Addresses in the process image - Inputs: 7
See Operating Manual
Chap. Configuration > Access to I/O data
Addresses in the process image - Outputs: 4
See Operating Manual
Chap. Configuration > Access to I/O data

312420 PSSu K F FAU B
313115 PSSu A Con 1/10 C (2 pieces; BL-I/O)
313117 PSSu A Con 4 S (1 piece; SPRINGCON)
313118 PSSu A Con 4 C (1 piece SPRINGCON)
312965 PSSu A LC 0.2 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
584569 PSEN cable M12-4sm MIOsm MOVE, 8m
584570 PSEN cable M12-4sm MIOsm MOVE, 10m
584571 PSEN cable M12-4sm MIOsm MOVE, 15m
584572 PSEN cable M12-4sm MIOsm MOVE, 20m
630303 PSEN op cable axial M12 4-p.sh., 3m
630304 PSEN op cable axial M12 4-p.sh., 5m
630305 PSEN op cable axial M12 4-p.sh., 10m
630270 PSEN op cable axial M12 4-p.sh., 20m
630309 PSEN op cable axial M12 4-p.sh., 30m
630366 PSEN op cable axial M12 4-p.sh., 50m

RJ45 socket 8-pin	PIN	Standard	Crossover
	1	TD+ (Transmit+)	RD+ (Receive+)
	2	TD- (Transmit-)	RD- (Receive-)
	3	RD+ (Receive+)	TD+ (Transmit+)
	4	n.c.	n.c.
	5	n.c.	n.c.
	6	RD- (Receive-)	TD- (Transmit-)
	7	n.c.	n.c.
	8	n.c.	n.c.

Socket	PIN	Signal
	1	SerDes+
	2	SerDes-
	3	n.c.
	4	n.c.
	5	n.c.
	6	n.c.
	7	+ 5 V
	8	- GND

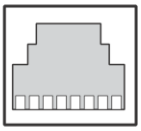


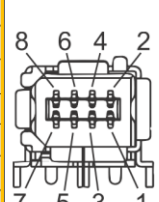
Failsafe compact module

Module's device code: 0F23h
Maximum number of modules per system: 0|2
(minus number of modules PSSu K F FAU B)
Digital inputs:
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier : PL e/SIL CL 3
SC outputs (one pole):
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
SC outputs (dual pole):
2-channel (up to): PL e / SIL CL 3

Digital FS inputs: 4
Test pulse outputs: 2 (configurable)
Digital FS outputs: 2 (dual-pole)
Digital FS outputs: 2 (single-pole)
FS status bits: 30
FS control bits: 25
Load current, periphery supply:
0.25 A per output (test pulse)
3.0 A per output (dual-pole)
2.0 A per output (single-pole)
Load current, periphery supply of the outputs: max. 10 A/24 V DC
Periphery supply: 25 mA (by module)
Periphery supply: 175 mA (by load)
Module supply: 1,000 mA (by module)
Addresses in the process image - Inputs: 7
See Operating Manual
Chap. Configuration > Access to I/O data
Addresses in the process image - Outputs: 4
See Operating Manual
Chap. Configuration > Access to I/O data

312421 PSSu K F FAU P
313115 PSSu A Con 1/10 C (2 pieces; BL-I/O)
313117 PSSu A Con 4 S (1 piece; SPRINGCON)
313118 PSSu A Con 4 C (1 piece SPRINGCON)
312965 PSSu A LC 0.2 (5 pieces)
312958 PSSu A LA0 (1080 pieces)
584569 PSEN cable M12-4sm MIOsm MOVE, 8m
584570 PSEN cable M12-4sm MIOsm MOVE, 10m
584571 PSEN cable M12-4sm MIOsm MOVE, 15m
584572 PSEN cable M12-4sm MIOsm MOVE, 20m
630303 PSEN op cable axial M12 4-p.sh., 3m
630304 PSEN op cable axial M12 4-p.sh., 5m
630305 PSEN op cable axial M12 4-p.sh., 10m
630270 PSEN op cable axial M12 4-p.sh., 20m
630309 PSEN op cable axial M12 4-p.sh., 30m
630366 PSEN op cable axial M12 4-p.sh., 50m

RJ45 socket 8-pin	PIN	Standard	Crossover
	1	TD+ (Transmit+)	RD+ (Receive+)
	2	TD- (Transmit-)	RD- (Receive-)
	3	RD+ (Receive+)	TD+ (Transmit+)
	4	n.c.	n.c.
	5	n.c.	n.c.
	6	RD- (Receive-)	TD- (Transmit-)
	7	n.c.	n.c.
	8	n.c.	n.c.

Socket	PIN	Signal
	1	SerDes+
	2	SerDes-
	3	n.c.
	4	n.c.
	5	n.c.
	6	n.c.
	7	+ 5 V
	8	- GND

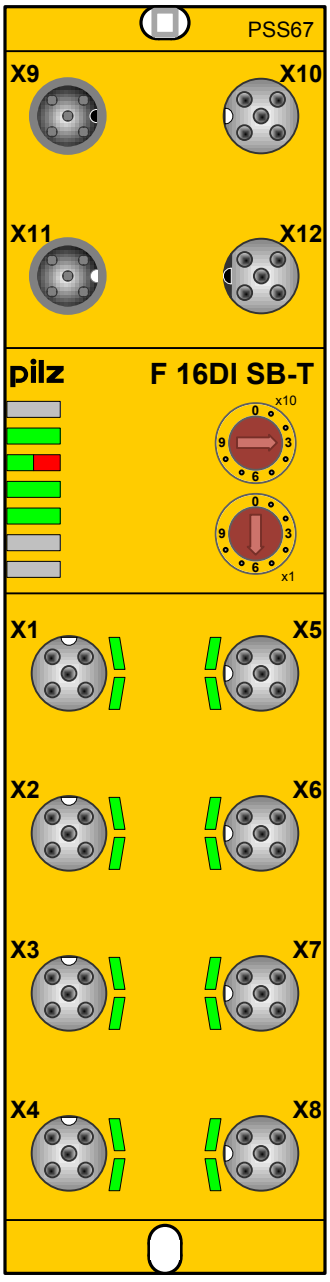
PILZ

THE SPIRIT OF SAFETY

IP67

PSS67-Series

Decentralised Periphery



Failsafe rugged device

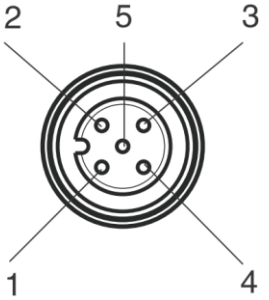
Network: SafetyBUS p (PSS 3000!)
Permitted device addresses: 32D ... 95D

Digital FS inputs: 16
Test pulse outputs: 16 (T0..T3,configurable)
Max. device current:
  2.0 A per device (test pulses)
  0.25 A per test pulse group (8x)
  0.125 A per pin (16x)
Note:
  Maximum current carrying capacity of
  the M12 connectors is 4 A per contact!

Load Supply: 0 mA (no load)
Addresses in the process image - Inputs:
  FS-PII: 16 Bit (I00..I15)

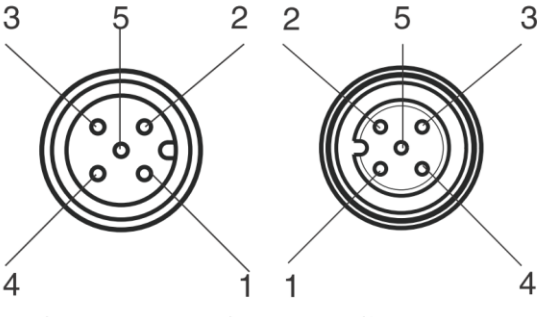
Weight: 500 g
Dimensions: 215 x 60 x 35.5 mm (H x W x D)

311300 PDP67 F 16DI SB-T
311250 Marking labels (264 pcs.)
311251 Cover for unsed female connectors
311252 Cover for unused male connectors



1: Test pulse X /24 V DC
2: Input X
3: 0 V
4: Input X+1
5: Test pulse X+1/ 24 V DC

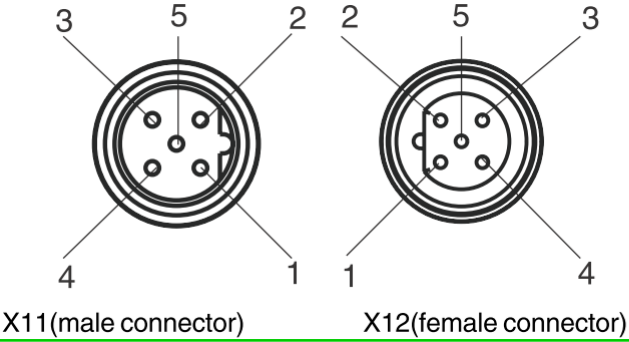
X1 ... X8 (A-coded)



1: Shield
2: n.c.
3: CAN_GND (white)
4: CAN_H (green)
5: CAN_L

n.c. = not connected

X9 ... X10 (A-coded)

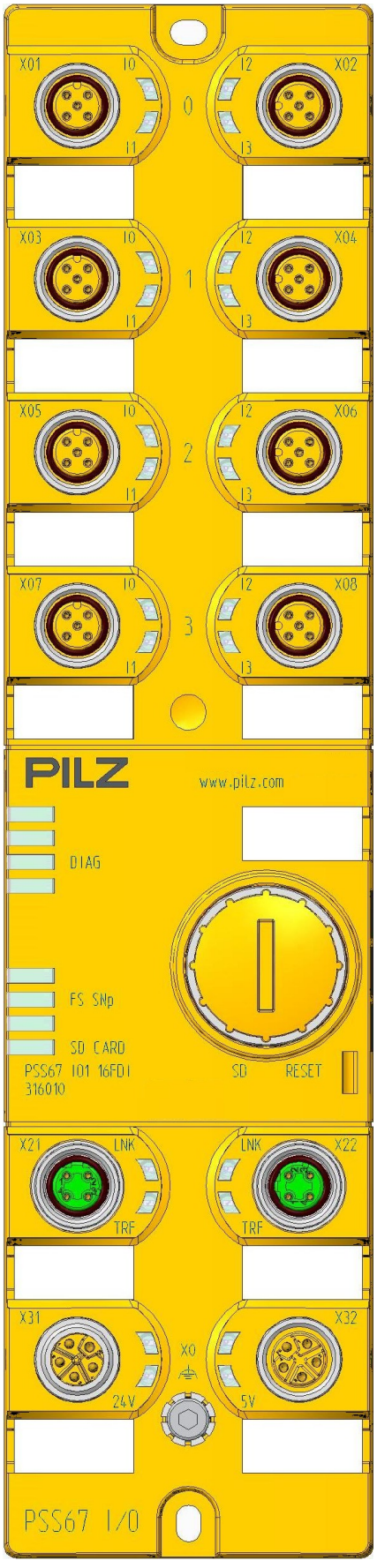


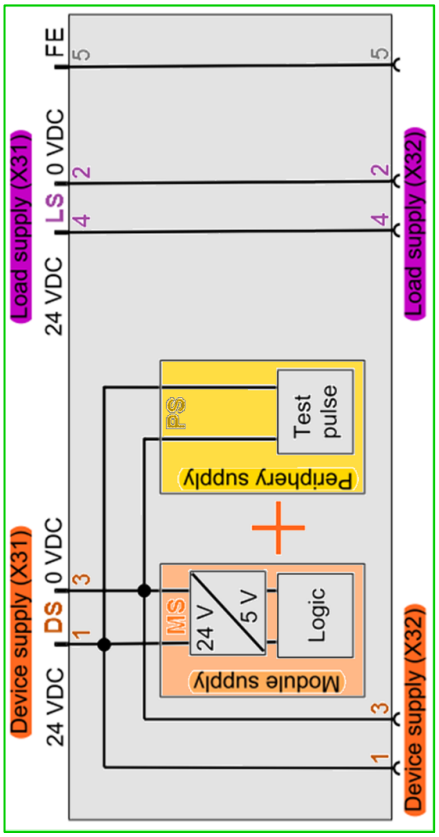
1: + 24 VDC
2: Reserved for output devices
3: O V
4: Reserved for output devices
5: Functional earth

X11 ... X12 (B-coded)

Connector pin assignment for:
» Sensors
» SafetyBUS p
» Voltage supply

Operating Manual: 1004417





Failsafe rugged device

Device's device code: 0A00h (like E F 4DI)
Network: SafetyNET p
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier :
PL e / SIL CL 3

Digital FS inputs: 16
Test pulse outputs: 16 (T0, T1 configurable)
Max. device current: 2,2 A (with MS and PS)
2.0 A per device (test pulses, only PS)
0.25 A per test pulse group (8x)
0.125 A per pin (16x)
Note: Maximum current load capacity of the M12 connectors is 8 A!
Load Supply: 3,5 mA (no outputs)
Addresses in the process image - Inputs:
FS-PII: 16 Bit (I00..I15)

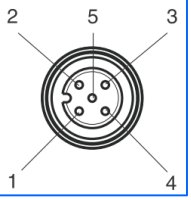
Weight: 940 g
Dimensions: 260 x 61,5 x 52 mm (H x W x D)

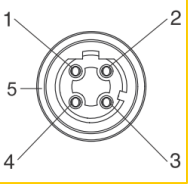
316010 PDP67 IO1 16FDI
328835 microSD Card 512MB industrial
380324 Protective Caps for IP67 M12 sockets
316011 PSS67 End cap 7/8" (µSD & Reset but.)

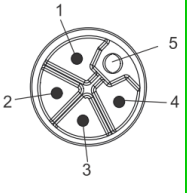
```
-# Sensor #-----------------------------------
For Sensor accessories see Operat. Manual
-# SafetyNET p #-----------------------------
380000 SafetyNET p Cable
380070 Stripping tool for SafetyNET p Cable
380400 SafetyNET p Connector RJ45s Socket,
       M12, 5-pin, L-coded
380316 M12 Connector, straight, male, 4-pin,
       D-coded
```

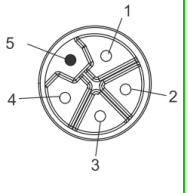
```
-# Voltage supply #---------------------------
380317 M12 Connector, straight, female,
       5-pin, L-coded, for Voltage Cable
380318 M12 Connector, straight, male,
       5-pin, L-coded, for Voltage Cable
380070 Crimping tool for Voltage Cable
380327 Supply cable 5x 1.5mm² Voltage cable
380321 Supply cable 5x 0.5mm² Voltage cable
-------------------------------------------
For all accessories please see Oper. Manual.
```

> For „Connection examples Pilz <> AIDA" see next page.

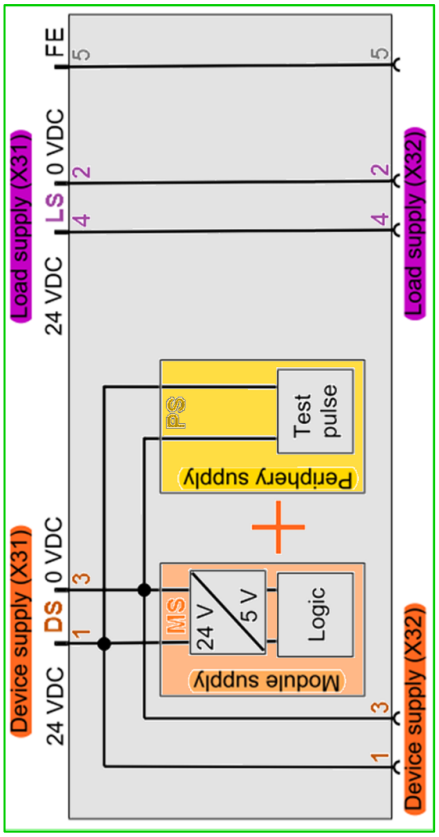
Inputs X01 to X08	Assignment	
5-pin M12 female connector A-coded	1: Test pulse x / 24 VDC 2: Input X+1 3: GND 4: Input X 5: Test pulse x+1 / 24 VDC	

SafetyNET p interface X21 and X22	Assignment	
4-pin M12 female connector D-coded	1: TD+ 2: RD+ 3: TD- 4: RD- 5: Connection to functional earth on the connector housing	

Interface to the 24 V power supply or to previous decentralised module: X31	Assignment	
5 pin M12 male connector L-coded	1: + 24 VDC supply voltage for device supply 2: 0 V supply voltage for load supply 3: 0 V supply voltage for device supply 4: + 24 VDC supply voltage for load supply 5: Connection to functional earth	

Interface to the next decentralised module: X32	Assignment	
5-pin M12 female connector L-coded	1: + 24 VDC supply voltage for device supply 2: 0 V supply voltage for load supply 3: 0 V supply voltage for device supply 4: + 24 VDC supply voltage for load supply 5: Connection to functional earth.	

Operating Manual: 1004541



Failsafe rugged device

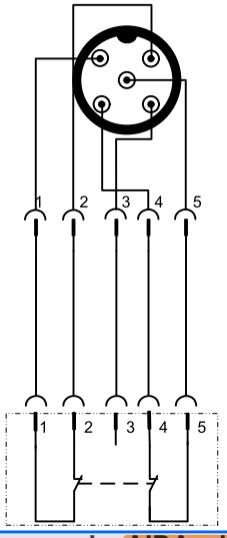
Device's device code: 0A00h (like E F 4DI)
Network: SafetyNET p
1-channel (up to): PL d / SIL CL 2
2-channel (up to): PL e / SIL CL 3
1-ch., pulsed light barrier :
PL e / SIL CL 3

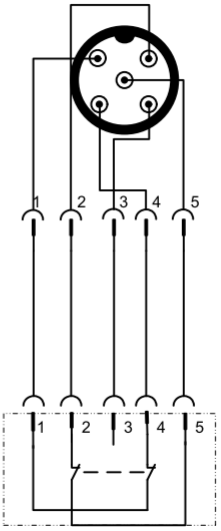
Digital FS inputs: 16
Test pulse outputs: 16 (T0, T1 configurable)
Max. device current: 2,2 A (with MS and PS)
2.0 A per device (test pulses, only PS)
0.25 A per test pulse group (8x)
0.125 A per pin (16x)
Note: Maximum current load capacity of the M12 connectors is 8 A!
Load Supply: 3,5 mA (no outputs)
Addresses in the process image - Inputs:
FS-PII: 16 Bit (I00..I15)

Weight: 940 g
Dimensions: 260 x 61,5 x 52 mm (H x W x D)

316020 PDP67 PLC1 F 16DI SN SD
328835 microSD Card 512MB industrial
380324 Protective Caps for IP67 M12 sockets
316011 PSS67 End cap 7/8" (µSD & Reset but.)

> For „Connector pin assignment" please see privious page.

Features	Connection example, PILZ safety switch
2-channel safety switch Homogeneous (equivalent) Separate test pulse: Test pulse assignment in PAS4000: – I0: T1 – I1: T0 Pin assignment: – 1: T0 – 2: I1 – 3: 0 V – 4: I0 – 5: T1	

Features	Connection example, AIDA wiring
2-channel safety switch Homogeneous (equivalent) Separate test pulse: Test pulse assignment in PAS4000: – I0: T0 – I1: T1 Pin assignment: – 1: T0 – 2: I1 – 3: 0 V – 4: I0 – 5: T1	

Please see Operating Manual
for all accessories of:
» Sensors
» SafetyNET p
» Voltage supply

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8. Table of figures

Support

Technical support is available from Pilz round the clock.

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Italy
+39 0362 1826711
Scandinavia
+45 74436332
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Energy saving by Pilz

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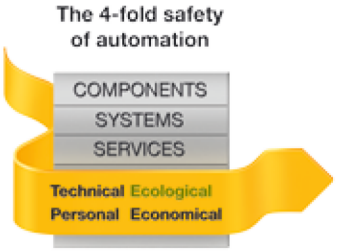
Partner of the Engineering Industry Sustainability Initiative



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Partner of:
The Best of German Engineering

Pilz GmbH & Co. KG
Felix-Wankel-Straße 2
73760 Ostfildern, Germany
Tel.: +49 711 3409-0
Fax: +49 711 3409-133
info@pilz.com
www.pilz.com

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