Screw terminal panels, Relay output boards, connection cables

How important are cables and terminal panels?

When the PC runs important controlling and regulating tasks in a processing system, then data transfer must be reliable in order to ensure the reliability of the whole system. This is why ADDI-DATA cables and terminal panels have the same high safety and EMC standards as the PC boards and MSX-E systems.

Robust industry-standard D-Sub connector

Protection against electromagnetic fields

High noise immunity

What makes the difference between cables?

The connection cable as a mechanical device is not submitted to the EMC specifications, though it can affect the emission immunity of the devices to which it is connected.

The use of cables with industry-standard D-Sub connectors has many advantages:

- Robustness
- Protection against EM fields
- Earthing on both connector ends
- High noise immunity

Application

Suitable for use as control or signal cables in noisy environment, for indoor or outdoor applications. The tight braid reduces the emissions.

The copperbraid is used as „ground". Twisted pairs provide protection against crosstalk and external interference. The cables are suited for dry or damp environments.

Indispensable terminal panels

Terminal panels are essential in most industrial applications. They dispatch to the sensors, tracers or control modules the numerous signals which are to be processed.

Prevent connection errors

- The terminal panels are pin-compatible with the PC boards
- The terminal panels lead the control signals in increasing order from the PC to the screw terminal which also corresponds to the bit set in the board

Helpful LEDs

- Indicate the status of each digital signal

Integrated 24 V supply

- Separate 24 V supply terminal for the easy connection of the digital 24 V PC boards
- Varistors and diodes for overvoltage protection are connected to the screw terminals to prevent emissions from the external supply voltage.

High noise immunity

- The connection between housing and shield through the ground connection terminal creates an earthing on both sides

	PX 901	PX 9000	PX 8000 / PX 8001	PX 9200	PX 8500	PX_BNC
Description	Panel for connecting up to 32 signal lines	Panel for connecting up to 32 signal lines	Panel for connecting 50 signal lines	Panel for connecting 22 signal lines and 4 analog channels	Relay output board with 8 relays, cascadable in 16, 24 and 32 relays	Connection of up to 8 diff. or 16 SE inputs through BNC connector
Function indication with LEDs	**PX 901-D**: yes	For 24 V and sensor supply		For 24 V and sensor supply	For relay and sensor supply	
Overvoltage protection of the 24 V supply voltage	Through varistors and transil diodes	Through varistors and transil diodes		Through varistors and transil diodes	Through varistors and transil diodes	
Available versions	**PX 901-D**: For digital boards, with 32 LEDs for status indication of the data lines . **PX 901-DG**: Same as PX901-D with housing **PX 901-A**: For analog boards with transil diodes for the overvoltage protection of the analog I/O **PX 901-AG**: Same as PX901-A with housing for DIN rail **PX 901-ZG**: For counter boards, with housing for DIN rail				**PX 8500**: Without varistors and housing **PX 8500-G**: With housing for DIN rail **PX 8500-Vt+G**: With varistors and housing for DIN rail	
Connection to	ADDI-DATA digital, analog or counter boards	All ADDI-DATA digital boards	APCI-1710, CPCI-1710 APCI-8001, APCIe-1711 APCI-2200, APCIe-2200 CPCI-8004	Multifunction board APCI-3122 and analog board APCI-3504	ADDI-DATA digital boards with digital outputs	ADDI-DATA analog boards
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Screw terminal panel for DIN rail

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PX 901

32 terminals for signal lines

LED status indication for digital signals

Transil diodes for analog signals

DIN-rail mounting

Direct connection to ADDI-DATA boards

The screw terminal panel PX 901-xx is used for the connection of maximum 32 signal or signal-reference lines.
ADDI-DATA boards can be connected through 37-pin D-Sub female connector with our standard cables of the STxxx series.
The housing of the female connector is connected with two ground terminals so that the board is additionally earthed for more security. All components of the board are enclosed in an earthing strip also connected to the ground terminals.
Each terminal is directly connected to one pin of the 37-pin D-Sub female connector. The designations on the terminals indicate the respective connections for the 37-pin D-Sub female connector.

The PX 901-D version is equipped with LEDs which are ideal for status display when working with ADDI-DATA digital 24 V I/O boards.
The PX901-A version is fitted with transil diodes for analog signals, but without LEDs.
An additional 4-pin terminal is available in order to be able to connect more than one 24 V operating voltage and ground line.
The 24 V or the ground terminal can be connected very easily through wire wrap to the 4-pin terminal.
The 24 V operating voltage lines are additionally protected against overvoltage through varistors and transil diodes.

Features

- Connection of up to 32 signal lines
- Separate ground connections
- Connection through screw terminals
- 2 rows of terminals
- Terminals can be labelled
- Additional 4-pin terminal for connecting the ground or the supply voltage
- With housing for mounting on a standard DIN rail
- All terminals intended for large conductor cross sections: up to 2.5 mm²

Safety features

- Overvoltage protection of the 24 V supply terminals through varistors and transil diodes

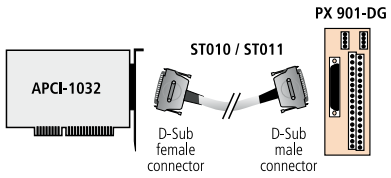
Applications

- Process control
- Industrial measuring
- Acquisition of sensor data
- Signal analysis

Specifications

Signal line terminals:	32 for the connection of peripherals
Additional terminals:	– 4 for feeding the external operating voltage (digital I/O) – 2 for the connection of ground lines
status indication:	32 LEDs for status indication, 1 LED for status display of the operating voltage (version D)
Safety features:	Varistors and transil diodes
Connector:	37-pin D-Sub female connector
Dimensions of the board:	(L x W x H) 130 x 70 x 35 mm
Dimensions with housing:	(L x W x H) 132 x 87 x 70 mm
Temperature range:	0-60 °C

Example:
Connection of a digital input board to the screw terminal panel PX 901-DG



Ordering information

PX 901
Screw terminal panel. Incl. technical description.

Versions
PX 901-D: For digital boards, with status indication through LEDs
PX 901-DG: Same as PX 901-D, with housing for mounting on DIN rail
PX 901-A: For analog boards, with transil diodes
PX 901-AG: Same as PX 901-A, with housing for mounting on DIN rail
PX 901-ZG: For analog output boards with current outputs and for connecting the digital I/O on some ADDI-DATA boards. With housing for DIN-rail mounting

Accessories
Please order separately!
ST010: Standard round cable, shielded, twisted pairs, 2 m
ST011: Standard round cable, shielded, twisted pairs, 5 m

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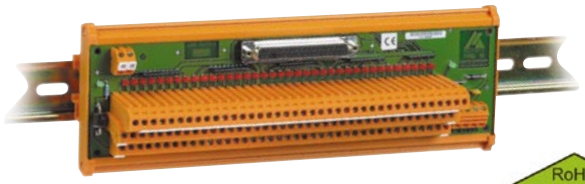
Screw terminal panels for DIN rail



RoHS 2002/95/EC

PX 9000

3-row screw terminal panel

LED status indication

DIN rail mounting

For digital or analog boards

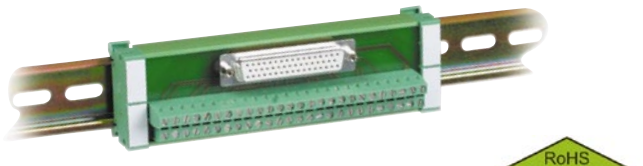
The screw terminal panel PX 9000 is intended for the connection of maximum 32 signal lines and the voltage supply for the external sensors/actuators. All components of the board are enclosed in an earthing strip which is also connected to the ground terminals.
On the 3x39-pin terminal block, all 37 contacts of the 37-pin female connector are assigned a contact on a row of terminals. Each signal line (terminal 1-32) is assigned a status LED.
Both other rows of terminals are intended for connecting the voltage supply for the sensors/actuators. These rows are protected against unintentional voltage reversal through a diode. A LED indicates when a voltage is applied.
These rows of terminals are equipped with 2 additional terminals, one on the right and one on the left side, for the easy connection of the voltage supply to a further terminal panel.
4 further screw terminals are at disposal for the supply voltage of ADDI-DATA digital I/O boards: two for the connection of the 24 V operating voltage and two for the operating ground.
Both terminals for the operating voltage 24V are in addition protected against overvoltages through varistors and transorb diodes.

Features

- 3 rows of terminals, terminals can be labelled
- LED indicator status
- Additional 4-pin terminal for the direct connection of the ground and the 24 V supply voltage to ADDI-DATA boards
- With housing for DIN-rail mounting
- All terminals intended for large conductor cross sections: up to 2.5 mm²
- 2 x 39 screw terminals to the distribution of the voltage supply e.g. on sensors and for cascading several PX9000

Specifications

Signal line terminals:	32 for the connection of peripherals
Supply voltage terminals:	2 rows of 39 terminals
Additional terminals:	– 4 terminals for the external voltage power supply (digital I/O) – 2 for connecting the ground lines
Status indication:	37 LEDs for status indication, LEDs for operating and supply voltage
Safety features:	Varistors and transil diodes, ground lines
Connector:	37-pin D-Sub female connector
Dimensions of the board:	(L x W x H) 244 x 68 x 35 mm
Dimensions with housing:	(L x W x H) 248 x 87 x 78 mm
Temperature range:	0-60 °C



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PX 8000

2-row screw terminal panel, 50-pin, for DIN rail

Connection of 50 signal lines

Side elements with labels

RoHS 2002/95/EC

PX 8001

3-row screw terminal panel, 50-pin, for DIN rail

Connection of 50 signal lines

With numbered screw terminals

Features

- Screw terminal panel for 50 signal line terminals
- Ground connection of the connector is lead directly to the connecting terminal
- With 50-pin female connector
- For free mounting
- Specifications:

Specifications:	PX 8000	PX 8001
Cross conductor section up to:	1.5 mm²	4 mm²
Input/output test voltage:	2.5 kV, 50 Hz, 60 s	
Operating temperature:	-20 °C to +50 °C	-20 °C to +50 °C
Dimensions in mm (L x W x H):	156 x 45 x 42	69 x 98 x 62
Current/voltage:	2.5 A / 125 V	2 A / 125 V

Ordering information

PX 9000
3-row screw terminal panel, 37-pin, with housing for DIN-rail mounting. Incl. technical description.

PX 8000
2-row screw terminal panel, 50-pin, with housing for DIN-rail mounting. Incl. technical description.

PX 8001
3-row screw terminal panel, 50-pin, with housing for DIN-rail mounting. Incl. technical description.

Accessory please order separately!

ST010: Shielded round cable, twisted pairs, 2 m, 37-pin
ST011: Shielded round cable, twisted pairs, 5 m, 37-pin
ST370-16: Shielded round cable, twisted pairs, 2 m, 50-pin
ST8001: Cable for connecting the APCI-8001 and OPMF, 50-pin

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Screw terminal panel for DIN rail

PX 9200

Separate connector for digital I/O and analog outputs

LED status indication for digital signals

Protection through transil diodes for analog signals

DIN-rail mounting

The terminal panel PX 9200 combines the connection of analog and digital channels. It features 2 separate male connectors between the digital and the analog signals. Both signal types are driven through one own layer board and are protected from each other.
The two terminals blocks for the digital signals allow to connect 22 lines distributed as follows: 12 lines for digital output signals and 10 lines for digital input signals. The cable ST3122-D is used for digital data transfer to the ADDI-DATA boards and is equipped with a 26-pin D-Sub high-density female connector.
The terminal block for the analog signals allow to connect 4 analog channels with a separated ground line. The cable ST3122-A is used for analog data transfer to the ADDI-DATA boards and is equipped with a 15-pin D-Sub high-density female connector.
All components of the layer board are included in an earthing strip which is itself connected to the earthing terminal.
The screw terminals are labelled to differentiate the different signals (analog/digital).
The PX 9200 is supplied with LEDs for status display of the digital signals.
The analog signals are protected against fast transients and the mechanical layout allows the separation from the digital signals. The voltage supply for the analog or digital functions are driven separately.

Features

- Max. connection of 22 digital signal lines and 4 analog channels with separated ground line
- Separate ground connection
- Connection through screw terminals
- Separated connection blocks for analog and digital channels
- Terminals can be labelled
- With housing for DIN rail mounting
- All terminals for screw terminals for large conductor cross sections: up to 2.5 mm²

Safety features

- Transil diodes on the analog channels
- Separate lines for analog and digital channels

Applications

- Process control
- Industrial measurement
- Acquisition of sensor data
- Signal analysis

Specifications

Signal line terminals:	for the connection of peripherals
Status indication:	22 LEDs for digital status indication, including: – 12 yellow LEDs for digital outputs – 10 orange LEDs for digital inputs
	One additional LED (green) for the voltage supply of the analog and digital channels
Safety features:	Varistors and transil diodes
Connector:	26-pin high-density D-Sub female connector (digital)
	15-pin high-density D-Sub female connector (analog)
Dimensions:	(L x W x H) 132 x 87 x 65 mm
Temperature range:	0-60 °C

ST3122, High-density round cable, 2 m

Ordering information

PX 9200
Screw terminal panel. Incl. technical description.

Version
PX 9200: for multifunction board APCI-3122 and analog output board APCI-3504 with status indication through LEDs

Accessories
Please order separately!

ST3122-D: High-density round cable, 2 m, shielded, twisted pairs, for digital inputs and outputs

ST3122-A: High-density round cable, 2 m, shielded, twisted pairs, for analog outputs

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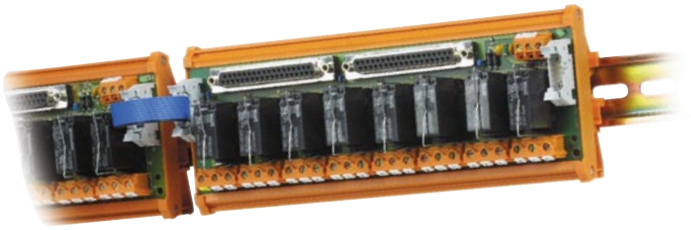
8-port relay output board



PX 8500

For the connection of digital output boards

Cascadable in 16/24/32 relays

8 relays on socket

DIN-rail mounting

30 VDC - 277 VAC

300 W - 2500 VA

10 A

RoHS 2002/95/EC

The PX 8500 is an external 8-channel relay board for the connection of digital output boards. It can be cascaded in 16, 24 and 32 relays and is intended for mounting on DIN supporting rails. The board provides a convenient interface between an industrial process and the D-Sub connectors on ADDI-DATA boards.
The change-over contacts of the relay are controlled through 24 V signals. The 24 V voltage supply is protected through varistors and transil diodes.
The board is intended for the use with 220 V supply. The creeping distance (acc. to DIN VDE0110) and the connector cross sections allows high-power switching (up to 2,500 VA). The board has a female D-Sub connector for connecting an ADDI-DATA digital 24 V output board through a standard I/O cable ST010. The red LEDs display the state of the relays (open/closed). A green LED displays the ON/OFF of the operating voltage.
The 37-pin cable shielded can be grounded on both sides for the protection against high-frequency EMI

Features

- Relay output board with 8 relays, cascadable in 16, 24 and 32 relays
- Max. switching voltage: 30 VDC/277 VAC
- Max. switching current: 10 A
- All terminals intended for large conductor cross sections up to 2.5 mm²
- Operating voltage display through green LED
- Relay state display through red LED
- Relays mounted on sockets
- High switching capacity
- Long-lasting life

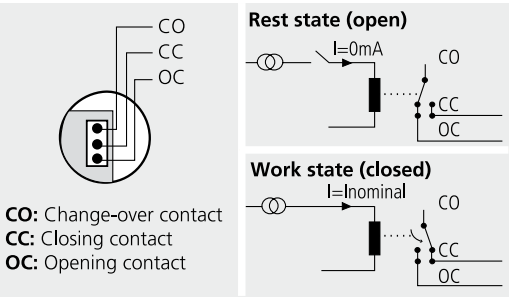
Safety features

- Overvoltage protection of the 24 V supply voltage through varistors and transil diodes
- Contact protection of the relays through varistors (option Vt)
- 4 mm creeping distance between change-over, closer and opening contact
- 6 mm creeping distance between change-over contact and closer of adjoining relay
- Free-wheeling diode in the coil circuit
- With housing for mounting on a standard DIN rail, (option G)
- Operating safety tested according to the low-voltage directive: 73/23/EEC

Applications

- Industrial digital I/O control
- Automatic test equipment
- External high power relay control
- Alarm monitoring
- Test automation
- Alarm monitoring
- Digital monitoring
- ON/OFF monitoring of motors, lights ...
- ...

Function principle of the relays



CO: Change-over contact
CC: Closing contact
OC: Opening contact

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Specifications

EMC – Electromagnetic compatibility

The product complies with the European EMC directive. The tests were carried out by a certified EMC laboratory in accordance with the norm from the EN 61326 series (IEC 61326). The limit values as set out by the European EMC directive for an industrial environment are complied with. The respective EMC test report is available on request.

Contact side

Type of contacts:	8 change-over
Max. switching voltage:	30 VDC - 277 VAC
Max. switching capacity:	300 W - 2500 VA
Max. switching current:	10 A
Contact resistance:	<100 mΩ
Responding time:	15 ms
Release time:	5 ms
Mechanical life:	5.000.000 operations
Life at max. switching capacity:	100.000 operations

Control side

Switching behaviour:	Monostable
Operating voltage:	24 VAC
Operating efficiency:	533 mW
Switch. frequency at max. load:	20 switchings/minute
Threshold voltage at +20 °C:	16.8 V
Release voltage at +20 °C:	2.4 V

Physical and environmental conditions

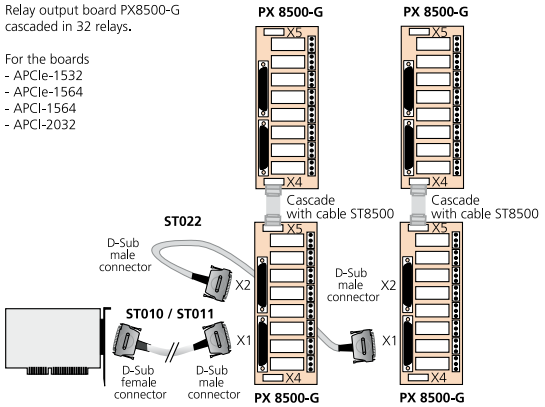
Operating voltage:	+ 24 V
Current consumption:	210 mA typ.
Dimensions (L x W x H):	with housing 212 x 87 x 72 mm
Connector:	2 x 37-pin D-Sub female connector
X1:	For the connection to the PC
X2:	For cascading the PX 8500 in max. 32 relays, for example the digital output board APCI-2032. In this case the digital output signal 1 corresponds to the 24 V control signal of the relays 1, output 2 to relays 2, etc.
Temperature range:	0-60 °C
Humidity:	30-95 %

Standard round cable **ST010**

PX 8500 cascaded in 32 relays

Relay output board PX8500-G cascaded in 32 relays.

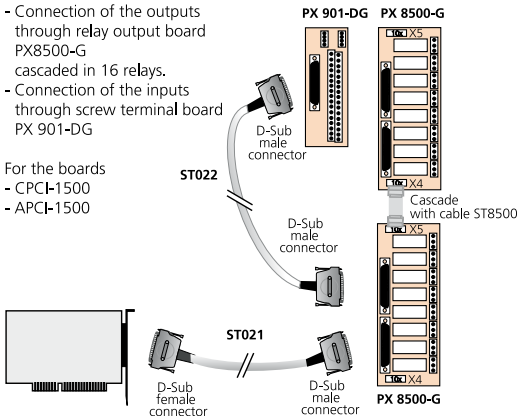
For the boards
- APCIe-1532
- APCIe-1564
- APCI-1564
- APCI-2032



PX 8500 cascaded in 16 relays

- Connection of the outputs through relay output board PX8500-G cascaded in 16 relays.
- Connection of the inputs through screw terminal board PX 901-DG

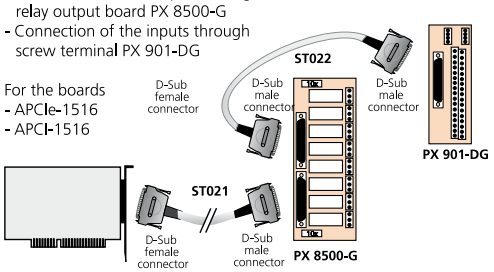
For the boards
- CPCI-1500
- APCI-1500



Connection example for the digital I/O board APCI-1516

- Connection of the outputs through relay output board PX 8500-G
- Connection of the inputs through screw terminal PX 901-DG

For the boards
- APCIe-1516
- APCI-1516



Ordering information

PX 8500

8-port relay output board. Incl. technical description.

PX 8500-G:	With housing for mounting on DIN rail
PX 8500-VtG:	PX 8500 with varistors and housing for mounting on DIN rail

Accessories

ST8500:	Ribbon cable for cascading the board in 16, 24 or 32 relays
ST021:	Standard round cable, shielded, for connecting an APCI-1500 or APCI-1516
ST022:	Standard round cable, shielded, for cascading two PX 8500
ST010:	Standard round cable, shielded, twisted pairs, 2 m, for connecting an APCI-2032, APCI-1564
ST011:	Same as ST010, 5 m

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BNC connection box for DIN rail

PX_BNC

BNC connection box

For analog I/O boards

DIN-rail mounting

Features

The connection box PX_BNC allows the direct connection of analog voltage and current signals through BNC connectors. Many ADDI-DATA analog boards can be connected (see table on the right). With the PX-BNC, you can connect up to 8 differential or 16 single-ended analog inputs as well as 8 analog output channels through BNC connectors.

Housing

The compact housing consists of black painted aluminium, profile IP65 with good impact resistance.

Accessories

The standard delivery contains 2 clamps for DIN rail mounting.

Connection to the board

The connection to the board is made through the 37-pin D-Sub female connector, the pin assignment depends on the type of board connected.
The connection between PX_BNC and the ADDI-DATA analog board is made through the standard round cable ST010 (shielded cable, 2 m).
Please order the cable separately.

16 BNC connectors for analog inputs

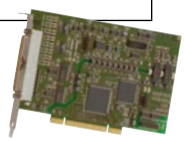
The connection box has 16 BNC connectors In 0 to In 15 for the connection of the analog input channels (Channel 0-15) of many ADDI-DATA input and multifunction boards (see table on the right).
The BNC ground is connected to the ground of the analog signals.
The connection of the differential channels (DIFF) is only possible through a special BNC cable.

8 BNC connectors for analog outputs

The connection box has 8 BNC connectors Out 0 to Out 7 for the connection of the analog output channels (channel 0-7) of many ADDI-DATA multifunction and output boards (see table on the right).
The BNC ground is connected to the ground of the respective analog output channel.

The PX-BNC can be connected to the following ADDI-DATA analog boards:

Analog input boards	Multifunction boards	Analog output board
APCI-3001 / CPCI-3001 APCI-3010 / APCI-3016 APCIe-3021	APCI-3110 / APCI-3116 APCI-3120 / CPCI-3120 APCIe-3121	APCI-3501 APCIe-3521



Specifications

BNC connector:	For the connection of peripherals
BNC connector:	In 0-15 for analog inputs Out 0-7 for analog outputs
D-Sub connector	37-pin D-Sub female connector
Dimensions:	(L x W x H) 210 x 105 x 50 mm
Weight:	727 g
Temperature range:	0-60 °C

Ordering information

PX_BNC

BNC connection box for DIN rail. Incl. technical description.

Accessories

Please order separately!

ST010: Standard round cable, shielded, twisted pairs, 2 m
ST011: Same as ST010, 5 m
Other cable version on request

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Shielded cables for industrial applications

CABLES

Dedicated cables

Special versions on request

Standard cables for industrial applications

More safety for your application

What makes the difference between cables?

The connection cable as a mechanical device is not submitted to the EMC specifications, though it can affect the emission immunity of the devices to which it is connected.
The use of cables with industrial standards has many advantages:

- Protection against EM fields: The shield of the cable is connected to the metallised hood of the D-sub connector. The connection between housing and shield creates an earthing on both sides.

- High noise immunity: More protection through adapted pin assignment of the cables. The way the cable leads are twisted in pairs corresponds to the pin assignment of the boards.

Industry-standard D-sub connectors versus SCSI-connector

D-sub connectors fit the high requirements of industrial measurement and control. They are robust and have a high noise immunity.
This is why we equip all our boards with D-sub connectors.

Application

Suitable for use as control or signal cables in noisy environment, for indoor or outdoor applications. The tight braid reduces the emissions. The copper braid is used as "ground". Twisted pairs provide protection against crosstalk and external interference. The cables are suited for dry or damp environments.

Design of the cables

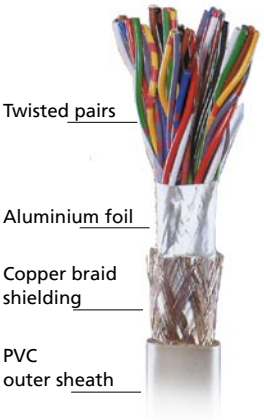
- Plain copper conductor, fine-strand according to IEC 60228
- Special PVC conductor insulation
- Twisted-pair conductors
- Core identification according to DIN 47100
- Conductors laid up in layers
- Aluminium foil
- Tinned copper braid shielding
- Covering grade approx. 85%
- Special outer sheath, grey PVC
- Oil and petrol resistant according to VDE 0250 and 04772
- Self-extinguishing (SE) and flame-retardant, according to IEC 60332-1

Special versions on request

- Other lengths
- Open cable end,
  on one or on both ends
- Bent connector on one or on both ends
- ...

Specifications of the cables (STxxxx type)

Specifications:	Special PVC data line for electronic control tasks according to VDE 0812 and 0814
Temperature range:	-30 °C to +80 °C laid permanently
Operating voltage:	Max. 350 V
Test voltage:	1200 V (0.14 mm^2)
Insulation resistance:	± 20 MΩ / km
Inductance:	Approx. 0.65 mH / km
Impedance:	Approx. 78 Ω
Capacitive coupling:	Approx. 300 pF/100m
Connector cross section:	0.14 mm^2 (ST010-S and ST011-S with a connector cross section of 0.25 mm^2)
Attenuation factor:	> 40 dB between 300 and 900 MHz
Construction:	The cable screen is screwed with low impedance over the strain relief on both sides of the housing hood with locking screws, the connections are crimped.
Minimum bending radius:	Laid flexibly 15 x cable diameter Laid permanently 6 x cable diameter



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Shielded standard cables with metallised hoods

RoHS 2002/95/EC

Bent connector

ST01x-S
for high currents

Open
cable end

Cable designation	Description	Twisted pairs	Shielded round cable	Length
Round cable, 1 to 20 m, 2 x 37-pin D-Sub connector				
ST010_1	Female connector / male connector	✓	✓	1 m
ST010	Female connector / male connector	✓	✓	2 m
ST010_3	Female connector / male connector	✓	✓	3 m
ST011	Female connector / male connector	✓	✓	5 m
ST011_10	Female connector / male connector	✓	✓	10 m
ST011_15	Female connector / male connector	✓	✓	15 m
ST011_20	Female connector / male connector	✓	✓	20 m
Round cable with one 90° bent female connector, 2 x 37-pin D-Sub connector				
ST010_1_ABGW	90° bent female connector / male connector	✓	✓	1 m
ST010_ABGW	90° bent female connector / male connector	✓	✓	2 m
ST010_3_ABGW	90° bent female connector / male connector	✓	✓	3 m
ST011_ABGW	90° bent female connector / male connector	✓	✓	5 m
Round cable with two 90° bent connectors, 2 x 37-pin D-Sub connectors				
ST010_1_2XABGW	Female connector / male connector	✓	✓	1 m
ST010_2XABGW	Female connector / male connector	✓	✓	2 m
Round cable, 2 m and 5 m, or high currents (for 24 V digital outputs), 2 x 37-pin D-Sub connector				
ST010_S	Female connector /male connector, with separate connection for 24 V voltage supply	✓	✓	2 m
ST011_S	Female connector /male connector, with separate connection for 24 V voltage supply	✓	✓	5 m
Round cable with one open end, 1 x 37-pin D-Sub connector				
ST010_1_O	Female connector / other side open and bared, incl. colour table according to DIN 47100	✓	✓	1 m
ST010_O	Female connector / other side open and bared, incl. colour table according to DIN 47100	✓	✓	2 m
ST010_3_O	Female connector / other side open and bared, incl. colour table according to DIN 47100	✓	✓	3 m
ST011_O	Female connector / other side open and bared, incl. colour table according to DIN 47100	✓	✓	5 m
Round cable between digital I/O boards and relay output board PX8500, 2 x 37-pin D-Sub connectors				
ST021	Between digital I/O boards (1500) and PX8500 female connector / male connector	✓	✓	2 m
ST022	Between two PX8500 or PX90x male connector / male connector	✓	✓	2 m
ST8500	Ribbon cable between two PX8500-x			5 cm
Miscellaneous cables				
ST1711-50	Connection cable for the APCIe-1711, for connecting the PX8000, 78-pin D-Sub male connector / 50-pin D-Sub male connector Enables the compatibility with the APCI-1710	✓	✓	2 m
ST3003-A	Connection cable for the APCI-3003, for the analog input signals, 15-pin male connector / 37-pin male connector	✓	✓	2 m
ST3003-D	Cable for the APCI-3003, for the digital signals, 15-pin male connector / 37-pin male connector	✓	✓	2 m
ST3122-A	Cable for the APCI-3122 and APCI-3504 , for the analog outputs 15-pin male connector / 15-pin male connector	✓	✓	2 m
ST3122-A_5	Cable for the APCI-3122 and APCI-3504, for the analog outputs 15-pin male connector / 15-pin male connector	✓	✓	5 m
ST3122-D	Cable for the APCI-3122 and APCI-3504, for the digital I/O 26-pin male connector / 26-pin male connector	✓	✓	2 m

Phone: +49 7229 1847-0 info@addi-data.com
Fax: +49 7229 1847-222 www.addi-data.com

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Bent connector

Cable designation	Description	Twisted pairs	Shielded round cable	Length
ST3122-D_5	Cable for the APCI-3122 and APCI-3504, for the digital I/O 26-pin male connector / 26-pin male connector	✓	✓	5 m
ST3200	50-pin female connector / 50-pin male connector	✓	✓	2 m
Round cables, 2 x 50-pin D-Sub connector				
ST370-16_1	Female connector / male connector	✓	✓	1 m
ST370-16	Female connector / male connector	✓	✓	2 m
ST3701	Cable for the APCI-3701, female connector / male connector	✓	✓	2 m
ST370-16_5	Female connector / male connector	✓	✓	5 m
ST370-16_1_ABGW	90° bent female connector / male connector	✓	✓	1 m
ST370-16_ABGW	Female connector / 90° bent male connector	✓	✓	2 m
ST370-16_5_ABGW	90° bent female connector / male connector	✓	✓	5 m
Round cables for the APCI-8001, 2 x 50-pin D-Sub connector				
ST8001	Female connector / male connector	✓	✓	2 m
ST8001_5	Female connector / male connector	✓	✓	5 m
Round cables for serial interfaces				
ST074	Connection cables for 4-port serial interfaces 37-pin female connector / 4 x 25-pin D-Sub male connector		✓	35 cm
ST075	Connection cables for 4-port serial Interfaces 37-pin female connector / 4 x 9-pin D-Sub male connector		✓	35 cm
ST075_ABGW	Connection cables for 4-port serial interfaces, 37-pin D-Sub female connector / 4 x 9-pin D-Sub male connector 90° bent female connector		✓	35 cm
ST7809	Connection cables for 8-port serial interfaces 78-pin male connector / 8 x 9-pin female connector		✓	35 cm
ST7825	Connection cables for 8-port serial interfaces 37-pin male connector / 8 x 25-pin female connector		✓	35 cm

Ribbon cables

Cable designation	Description
FB MSX-DIG-IO	For the MSX-Box option MSX-DIG-IO, 9-pin ribbon cable with D-Sub connector with bracket.
FB-INTERBUS	For the APCI-8001, for connecting the Interbus. Ribbon cable, 9-pin D-Sub female connector with bracket.
FB-PROFIBUS	For the MSX Box, for connecting the Profibus. Ribbon cable, 9-pin D-Sub female connector with bracket.
FB104-1500	For the digital I/O port of the PC104-PLUS1500. Ribbon cable, 37-pin D-Sub male connector
FB3000	Ribbon cable for the digital I/O port, 37-pin D-Sub male connector with bracket.
FB3001	Ribbon cable for the digital I/O port of the CompactPCI boards. 37-pin D-Sub male connector with 3U bracket.
FB3003	Ribbon cable for the digital I/O port, 37-pin D-Sub male connector with bracket.
FB3600-AC	For the analog and counter functions of the APCI-3600. Ribbon cable, 2x15-pin D-Sub male connector with bracket.
FB3600-D	For the digital I/O port of the APCI-3600. Ribbon cable, 37-pin D-Sub male connector with bracket.
FB3702	For APCI-8001, APCI-30xx and APCI-31xx. Ribbon cable, 50-pin D-Sub male connector with bracket.
FB8001	For APCI-8001, APCI-30xx and APCI-31xx. ribbon cable, 50-pin D-Sub male connector with bracket.

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