



# World of Automation



## Chapter 4: Network Data Communication

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## 4

### Chapter 4: Networking

- .01 USBport 11xx**
- .02 USBport 12xx**
- .03 COMport Converter**
- .04 COMport Repeater**
- .05 EDS-316/308/305**
- .06 EDS-316/308/305 Part 2**
- .07 Nport 51xx**
- .08 Nport 52xx**
- .09 Surge Guard**





# USBport 11xx

## overview



USBport 1110/1130 1150



Terminal Block Adaptor for USBport 1130, 1150, 1150I



USBport 1150I

The USB-to-serial converters allow you to connect 1 RS-232/422/485 device to your laptop or workstation through the USB (Universal Serial Bus) port. These plug & play USB solutions are Instant Plug & Play compatible with both new and legacy RS-232/422/485 devices, and are perfect for mobile, instrumentation, and point-of sale applications.

- ◆ 1-port RS-232 and RS-422/485 USB-to-serial converters
- ◆ Compatible with USB 2.0
- ◆ 12Mbps USB data rate
- ◆ 921.6 Kbps maximum baudrate for super fast data transmission
- ◆ Drivers provided for Windows (including Vista), WinCE 5.0, and Linux
- ◆ DB9 male connector for RS-232, terminal block adaptor for RS-422/485
- ◆ LEDs for indicating USB and TxD/RxD activity
- ◆ 15KV ESD protection for all serial ports
- ◆ 2 KV optical isolation protection (USBport 1150I)

## specification

<b>USB</b>	
compliance	USB 1.0/1.1 compliant USB 2.0 compatible
<b>SERIAL INTERFACE</b>	
Serial Standards	USBport 1110: RS-232 USBport 1130: RS-422/485 USBport 1150: RS-232/422/485
connectors	DB9 male
<b>SERIAL COMMUNICATE PARAMETERS</b>	
Baudrate	50bps to 921.6 Kbps
Data bits	5, 6, 7, 8
Stop bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS, XON/XOFF
<b>DRIVER SUPPORT</b>	
Operating systems	Windows (2000, XP, 2003, Vista, WinCE 5.0, Linux 2.6
<b>PHYSICAL CHARACTERISTICS</b>	
Weight	85g
Dimensions	52 x 80 x 22mm (USBport 1150I)
Operating temperature	0 to 55°C
Operating humidity	5 to 95% RH

## ordering information

part no	RS-232	RS-422	RS-485	optical isolation protection	housing types
Uport-1110	1			no	special
Uport-1130		1	1	no	special
Uport-1150	1	1	1	no	special
Uport-1150I	1	1	1	yes	special
DK-35A	Mounting Kit for 35mm DIN-Rail				

# USBport 12xx

## overview

- ◆ 2-port RS-232/422/485 USB-to-serial converter with 2 KV isolation protection
- ◆ Hi-Speed USB 2.0 for up to 480 Mbps USB transmission
- ◆ 921.6 Kbps maximum baudrate for super fast data transmission
- ◆ 128-byte FIFO and on-chip H/W, S/W flow control
- ◆ Additional I/O and IRQ not needed
- ◆ Certified drivers provided for Windows (including Vista), and WinCE 5.0
- ◆ Easy monitoring with LEDs and management software
- ◆ 15 KV ESD protection for all serial ports
- ◆ Choose bus power (USBport 1250) or external power (USBport 1250I)

USBport1250



USBport 1250I

## specification

<b>USB compliance</b>	USB 1.1/2.0 compliant
<b>SERIAL INTERFACE</b>	
<b>Serial Standards</b>	RS-232/422/485
<b>connectors</b>	DB9 male
<b>SERIAL COMMUNICATION PARAMETERS</b>	
<b>Baudrate</b>	50bps to 921.6 Kbps
<b>Data bits</b>	5, 6, 7, 8
<b>Stop bits</b>	1, 1.5, 2
<b>Parity</b>	None, Even, Odd, Space, Mark
<b>Flow Control</b>	RTS/CTS, XON/XOFF
<b>DRIVER SUPPORT</b>	
<b>Operating systems</b>	Windows (2000, XP, 2003, Vista, WinCE 5.0, Linux 2.6)
<b>PHYSICAL CHARACTERISTICS</b>	
<b>Operating temperature</b>	0 to 55°C
<b>Operating humidity</b>	5 to 95% RH
<b>Weight</b>	180g
<b>Dimensions</b>	77 x 26 x 111mm

The USBport 1250/1250I USB-to-serial converters allow you to connect 2 RS-232/422/485 devices to your laptop or workstation through the USB (Universal Serial Bus) port. This plug & play USB solution is perfect for mobile, instrumentation, and point-of-sale applications.

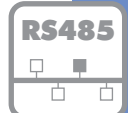
USB plug & play makes serial port expansion easy, and does not require IRQ, DMA, or I/O address resources. Users no longer need to open the chassis or power down the system to add COM ports, saving on setup time and cost.

In shipment is one DB9 female to terminal block adaptor per module.



## ordering information

part no	RS-232	RS-422	RS-485	optical isolation protection	housing types
Uport-1250	2	2	2	no	special
Uport-1250I	2	2	2	yes	special
DK-35A	Mounting Kit for 35mm DIN-Rail				
TB9F-to-TB	DB9 female to terminal block adaptor for RS-422/485 applications				



2-port RS-232/422/485 USB-to-serial converter

# COMport Conv.

## overview

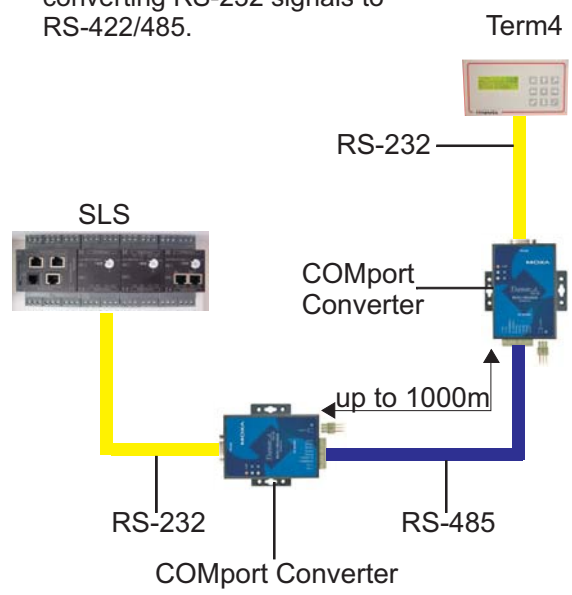


- ◆ Isolated Industrial RS-232 to RS-422/485 converters
- ◆ RS-232 to RS-422 conversion with RTS/CTS support
- ◆ RS-232 to 2/4-wire RS-485 conversion
- ◆ 2 KV isolation protection (COMport Conv. 100I)
- ◆ Wall and DIN-rail mounting
- ◆ Plug-in terminal block for easy RS-422/485 wiring
- ◆ LED indicators for power, TX, Rx
- ◆ -20 to 60°C operating temperature

The COMport Converter 100/100I is an isolated RS-232 to RS-422/485 converter that can be used to extend RS-232 transmission distance and increase networking capability. It has a superior industrial-grade design, with DIN-rail mounting, terminal block wiring, external terminal block for power, and optical isolation for system protection (COMport Converter 100I). For critical industrial environments, the COMport Converter 100 is an ideal solution for converting RS-232 signals to RS-422/485.

## specification

SERIAL COMMUNICATION PARAMETERS	
Baudrate	300 bps to 921.6 Kbps
Surge Protection	15 KV ESD for serial signals
Optical Isolation	2 KV (COMport Converter)
Power EFT /Surge Protection	2 KV
PHYSICAL CHARACTERISTICS	
Operating temperature	-20 to 60°C
Operating humidity	5 to 95% RH
Weight	148 +/- 5g
Dimensions	67 x 100,4 x 22mm
POWER REQUIREMENTS	
Input Power Voltage	12 to 48 Vdc



## ordering information

part no	optical isolation protection	housing types
TCC-100	no	special
TCC-100I	yes	special
DK-35A	Mounting Kit for 35mm DIN-Rail	

# COMport Rep.

## overview

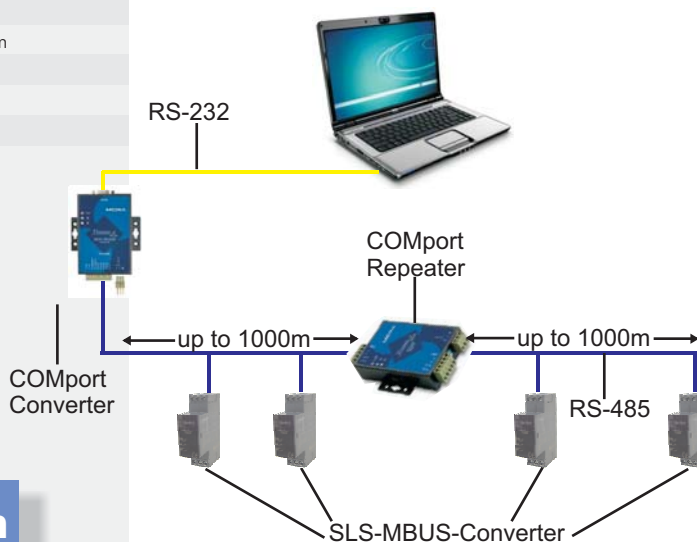
- ◆ Industrial RS-422/485 converter/repeater with 2 KV isolation protection
- ◆ Boost serial signal to extend transmission distance
- ◆ Wall or DIN-rail mounting
- ◆ Terminal block for easy wiring
- ◆ Power input from terminal block
- ◆ DIP switch setting for built-in terminator (120ohms)
- ◆ Boost RS-422 or RS-485 signal, or convert RS-422 to RS-485
- ◆ 2KV isolation protection (COMport Repeater 120I)



The COMport Repeater 120 and 120I are RS-422/485 converters/repeaters designed to extend RS-422/485 transmission distance. Both products have a superior industrial-grade design that includes DIN-rail mounting, terminal block wiring, and external terminal block for power. In addition, the COMport Repeater 120 and 120I are ideal RS-422/485 converters/repeaters for critical industrial environments.

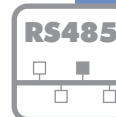
## specification

SERIAL COMMUNICATION PARAMETERS	
Baudrate	300 bps to 230.4 Kbps
ESD protection	15KV for all signals
Optical isolation	2 KV (COMport Repeater 120I only)
PHYSICAL CHARACTERISTICS	
Operating temperature	-20 to +60°C
Operating humidity	5 to 95% RH
Weight	148 +/- 5g
Dimensions	67 x 100.4 x 22mm
POWER REQUIREMENTS	
Input voltage	12 to 48 Vdc



## ordering information

part no	optical isolation protection	housing types
TCC-120	no	special
TCC-120I	yes	special
DK-35A	Mounting Kit for 35mm DIN-Rail	



Industrial RS-422/485 converter/repeater



# EDS-316/308/305

## overview



- ◆ 16-, 8-, or 5-Port Unmanaged Ethernet Switch
- ◆ 10/100 BaseT(X), 100 BaseFX (Multi mode, SC/ST connector)
- ◆ Redundant dual 24 Vdc power inputs
- ◆ Relay output warning for power failure and port break alarm
- ◆ Broadcast storm protection
- ◆ Transmits VLAN tag packets transparently
- ◆ 0 to 60°C operating temperature range
- ◆ Rugged hardware design well suited for industrial environments

## specification

### Features:

#### High Performance Network Switching Technology

- Store and Forward switching process type
- 10/100M, Full/Half-Duplex, MDI/MDI-X auto sensing

#### Industrial-grade Reliability

- Power failure, port break alarm by relay output
- Redundant dual DC power inputs

#### Rugged design

- DIN-Rail mounting
- IP30, rugged high-strength metal case

### TECHNOLOGY

**Standards** IEEE 802.3, 802.3u, 802.3x

### INTERFACE

**RJ45 Ports** 10/100 Base T(X) auto negotiation speed, F/H duplex mode, and auto MDI/MDI-X connection

**Fiber Ports** 100BaseFX ports (SC/ST connector)

**LED indicators** PWR1, PWR2, Fault, 10/100M (TP port), and 100M (Fiber port)

### OPTICAL FIBER

**Multi mode** 0 to 5km, 1300nm (50/125 $\mu$ m, 800 MHz\*km)  
0 to 4km, 1300nm (62.5/125 $\mu$ m, 500 MHz\*km)

**Single mode** 0 to 40km, 1310nm (9/125 $\mu$ m, 3.5 PS / (nm\*km))

### PHYSICAL CHARACTERISTICS

**Operating temperature** 0 to 60°C

**Operating humidity** 5 to 95% (non-condensing)

**Shock** IEC60028-2-27

**Vibration** IEC60068-2-6

### Dimensions (W x H x D)

EDS-316 series 80.5 x 135 x 105 mm

EDS-308/305 series 53.6 x 135 x 105 mm

### Weight

EDS-316 series 1140g

EDS-308/305 series 630g

### POWER REQUIREMENTS

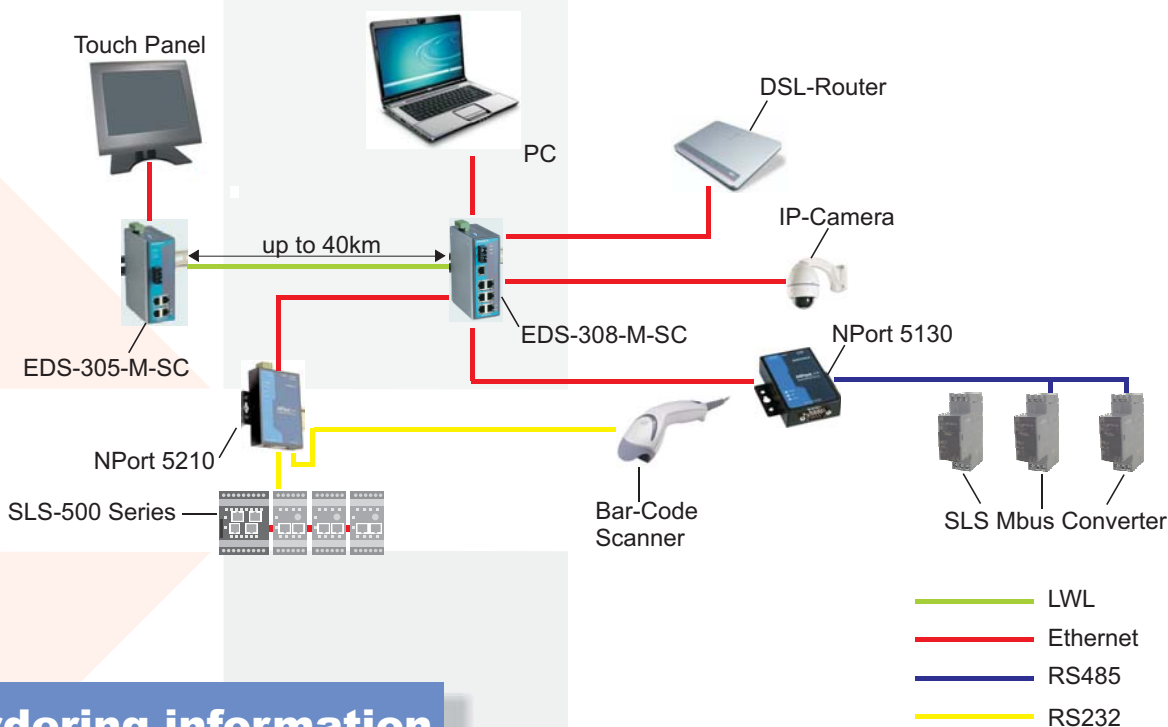
**Input voltage** 24Vdc (12 to 45Vdc), redundant

# EDS-316/308/305

## overview

The EDS-316/308/305 series includes 16, 8, and 5 port Ethernet switches that provide an economical solution for your industrial Ethernet connection, and the built-in relay warning function alerts maintainers when power failures or port breaks occur.

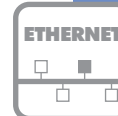
These switches have been designed for harsh industrial environments, such as in hazardous locations that comply with FCC, TÜV, UL and CE standards. These model pass through a 100% burn-in test to ensure that they fulfill the special needs of industrial automation control.



## ordering information

part no	RJ45-Port	LWL-Port SC Connector	LWL-Port ST Connector	LWL type	housing types
EDS-316	16	-	-	-	special
EDS-316-M-SC	15	1	-	multi mode	special
EDS-316-MM-SC	14	2	-	multi mode	special
EDS-316-M-ST	15	-	1	multi mode	special
EDS-316-MM-ST	14	-	2	multi mode	special
EDS-316-S-SC	15	1	-	single mode	special
EDS-316-SS-SC	14	2	-	single mode	special
EDS-316-MS-SC	14	2	-	1x multi mode / 1x single mode	special
EDS-308	8	-	-	-	special
EDS-308-M-SC	7	1	-	multi mode	special
EDS-308-MM-SC	6	2	-	multi mode	special
EDS-308-MM-ST	6	-	2	multi mode	special
EDS-308-S-SC	7	1	-	single mode	special
EDS-308-SS-SC	6	2	-	single mode	special
EDS-305	5	-	-	-	special
EDS-305-M-SC	4	1	-	multi mode	special
EDS-305-M-ST	4	-	1	multi mode	special
EDS-305-S-SC	4	1	-	single mode	special
EDS-309-3M-SC	6	3	-	multi mode	special
EDS-309-3M-ST	6	-	3	multi mode	special

16-, 8-, or 5-Port Unmanaged Ethernet Switch





# Nport 51xx

## overview

- ◆ 1-port RS-232/422/485 serial device servers
- ◆ Real COM/TTY drivers for Windows and Linux
- ◆ Standard TCP/IP interface and versatile operation modes
- ◆ Easy-to-use Windows utility for configuring multiple device servers
- ◆ Built-in 15KV ESD protection for all serial signals
- ◆ SNMP MIB-II for network management
- ◆ Configure by Telnet or web browser
- ◆ Adjustable termination resistor for RS-485 ports



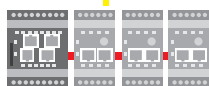
Nport 51xx device servers are designed to make serial devices network-ready in an instant. The small size of the servers makes them ideal for connecting devices such as card readers and payment terminals to an IP-based Ethernet LAN. Use the Nport 51xx device servers to give your PC software direct access to serial devices from anywhere on the network.



Nport 5110



SLS-500-download cable



SLS-500-Series  
or other Serial Device

## specification

### ETHERNET INTERFACE

Speed	10/100 Mbps
Connector	8-pin RJ45

### SERIAL INTERFACE

Serial Standards	Nport 5110:	RS-232
	NPort 5130:	RS-422/485
	NPort 5150:	RS-232/422/485
Connector	DB9 male	

### SERIAL COMMUNICATION PARAMETERS

Data Bits	5, 6, 7, 8
Stop Bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS and DTR/DSR (RS-232 only), XON/XOFF

### Baudrate

Nport 5110	110 bps to 230.4 Kbps
Nport 5130/5150	50 bps to 921.6 Kbps

### PHYSICAL CHARACTERISTICS

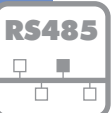
Operating temperature	0 to 55°C
Operating humidity	5 to 95% RH
Weight	380g
Dimensions	75.2 x 80 x 22mm with ears

### POWER REQUIREMENTS

Input voltage	12 to 48Vdc
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## ordering information

part no	RS-232	RS-422	RS-485	housing types
Nport-5110	1			special
Nport-5130		1	1	special
Nport-5150	1	1	1	special
DK-35A	Mounting Kit for 35mm DIN-Rail			
TB9F-to-TB	DB9 female to terminal block adaptor for RS-422/485 applications			
SLS-Std-RS232	download cable			



# Nport 52xx

## overview

- ◆ 2-port RS-232/422/485 serial device servers
- ◆ Small size for easy installation
- ◆ Versatile socket operation modes, including TCP Server, TCP Client, and UDP
- ◆ Easy-to-use Windows utility for configuring multiple device servers
- ◆ Supports 10/100M Ethernet
- ◆ Patented ADDC® (Automatic Data Direction Control) for 2-wire and 4-wire RS-485
- ◆ Built-in 15 KV ESD protection for all serial signals
- ◆ SNMP MIB-II for network management

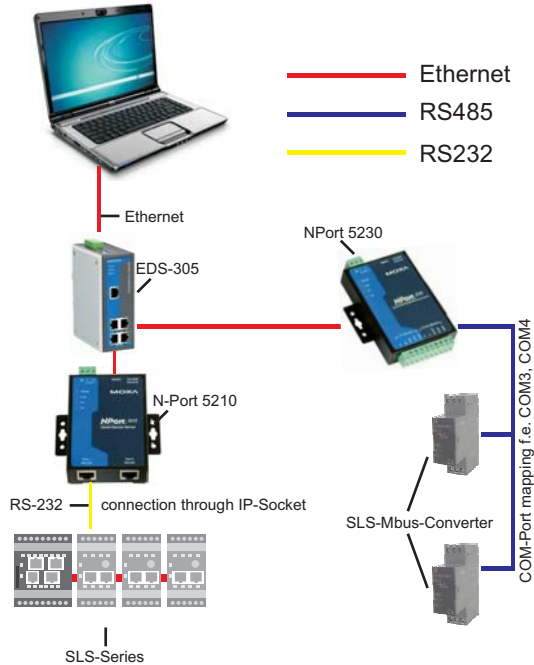


Nport 52xx device servers can operate in TCP Server, TCP Client, or UDP operation mode, ensuring compatibility with software based on a standard network API (Winsock, BSD Sockets).

With the Real COM/TTY drivers that are provided with each Nport, software designed for communication with COM/TTY ports can be instantly and seamlessly integrated into a TCP/IP network. This is an excellent "no fuss" way to preserve your software investment and enjoy the benefits of networking your serial devices.

## specifications

ETHERNET INTERFACE	
Speed	10/100 Mbps
Connector	8-pin RJ45
SERIAL INTERFACE	
Serial Standards	
Nport 5210	2x RS-232
Nport 5230	1 RS-232 Port, 1 RS-422/485 Port
Nport 5232	2x RS-422/485
Connectors	
Nport 5210	RJ45 (8 pins)
Nport 5230/5232	Terminal Block (5 pins per port)
SERIAL COMMUNICATION PARAMETERS	
Data bits	5, 6, 7, 8
Stop bits	1, 1.5, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS (RS-232 only), DTR/DRS (Nport 5210 only), XON/XOFF
Baudrate	110 bps bis 230.3 Kbps
PHYSICAL CHARACTERISTICS	
Operating temperature	0 to 55°C
Operating humidity	5 to 95% RH
Weight	ca. 380g
Dimensions	90 x 100.4 x 35mm



## ordering information

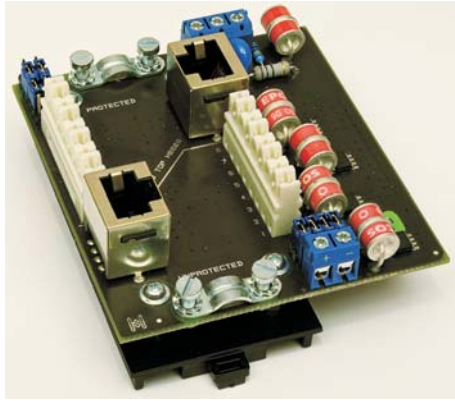
part no	RS-232	RS-422	RS-485	housing types
Nport-5210	2			special
Nport-5232		2	2	special
Nport-5230	1	1	1	special
DK-35A	Mounting Kit for 35mm DIN-Rail			
SLS-500-Nport5210-Kabel 0,5m				
SLS-500-Nport5210-Kabel 1,0m				





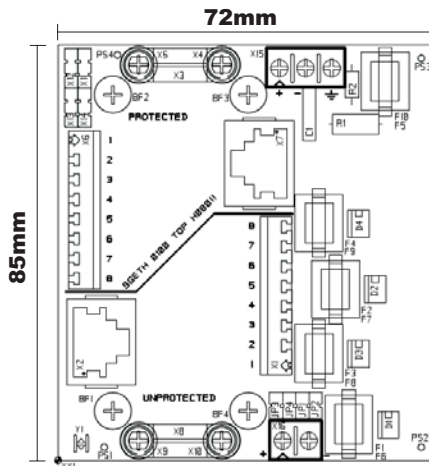
# Surge Guard

## overview

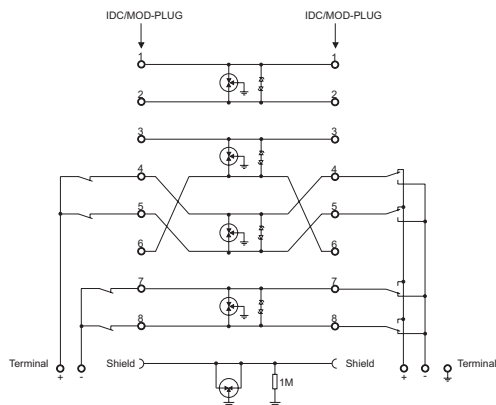


- ◆ symmetrical and asymmetrical voltage protection
- ◆ DIN rail mounting
- ◆ for cable (IDC-Connector 110+Krone type) and modular-jack-wiring
- ◆ as a interface between single wiring to modular-jack-wiring
- ◆ more options for a PoE wiring

### mechanical dimensions:



### electrical wiring diagram:



## specification

<b>Line to line voltages</b>	1:2, 3:6, 4:5, 7:8
Stand off voltage	≤ 6V
Break down voltage	≥ 6,8V @ 1mA
max. current	100A @ tp= 8/20μs
max. power	200W @ tp= 8/20μs

<b>Line to earth (GND) volt.</b>	(1+2) : GND
	(3+6) : GND
	(4+5) : GND
	(7+8) : GND
	Shield : GND

Stand off voltage	70 Vdc
Break down voltage	110 Vdc
Impulse break down volt.	< 450V @ 100V/μs Impulse
	< 500V @ 1000V/μs Impulse

### Please note:

After a disturbance the module have to be reviewed or appropriate exchanged.

The full effect can only be guaranteed with a properly connected PE conductor.

## ordering information

part no	housing types
Surge Guard	special