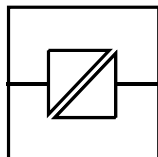


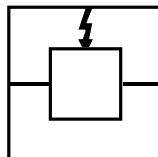
**SD-300
Series**

INSTALLATION MANUAL

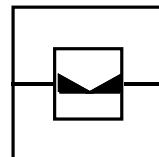
6642-2200



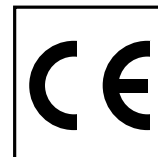
Galvanic
Isolation



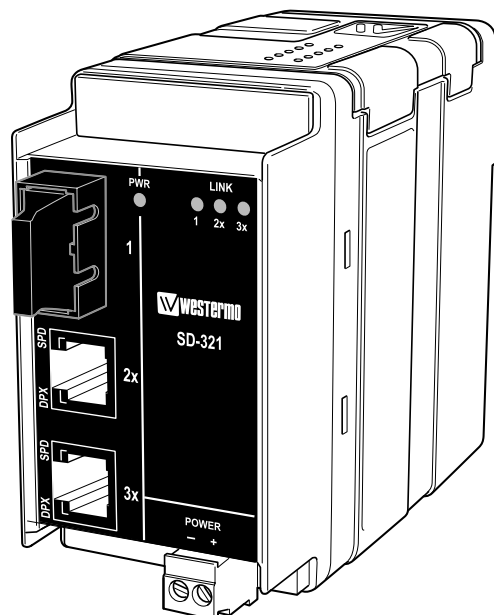
Transient
Protection



Balanced
Transmission



CE
Approved



**Industrial Ethernet
3-port Switch**

 **westermo**[®]

www.westermo.com

AUDIN
8, avenue de la malle - 51370 Saint Brice Courcelles
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Web : <http://www.audin.fr> - Email : info@audin.fr

[®]**WESTERMO**

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1. Description

The SD-300 is a serie of Industrial Ethernet 3-port switches.

Several variations are available ranging from a version with three RJ-45 TX (copper) ports to versions having two FX (fibre) and one TX port.

All TX ports support auto-negotiation, but DIP-switches also allow speed and duplex configuration of any individual TX port.

The SD-300 series has been designed to meet high industrial specifications, providing very high dependability in harsh environmental conditions.

Features:

- Flexible mix of TX (copper) and FX (fibre) interfaces
- TX chassies individually isolated
- Wide DC Power Range 12–48 VDC
- LED indicators for Speed, Duplex, Link and Traffic.
- 35 mm DIN rail mounting
- On request
 - Extended temperature
 - 90–240 VAC, 110–240 VDC (HV-supply)
 - LC, MTRJ or ST fibre interface
 - Single Mode (SM) fibre

Example of applications are:

- 3-port switch
- Fibre repeater, with service port
- Fibre to copper converter
- Ethernet isolator, for STP network

2. Safety



General:

Before using this unit, read this manual completely and gather all information on the unit. Make sure that you understand it fully. Check that your application does not exceed the safe operating specifications for this unit.



Before installation, maintenance or modification work:

Prevent damage to internal electronics from electrostatic discharges (ESD) by discharging your body to a grounding point (e.g. use of wrist strap).

Prevent access to hazardous voltages by disconnecting the unit from AC/DC mains supply and all other electrical connections.



Installation:

This unit is constructed for professional system use. It should be located in a restricted access area, such as locked cabinet which can only be accessed by service personnel.

Sound installation practice, as defined by applicable local codes or regulations, shall be followed in every instance in which such practice is applicable.

This unit is defined as class III equipment and shall be separated from hazardous voltage by double or reinforced insulation.

All interfaces must only be connected to SELV or TNV-1 circuits.

3. Approvals

Conformity with the Directive 89/336/EEC (Electromagnetic compatibility) has been assessed by application of standards EN 61000-6-2 (industrial immunity) and EN 61000-6-3 (residential emission).

3.1 Declaration of Conformity

Westermo Teleindustri AB

Declaration of conformity

The manufacturer Westermo Teleindustri AB
SE-640 40 Stora Sundby, Sweden

herewith declares that the product(s)

Type of product	Model	Art no	Installation manual
DIN-rail ethernet 3-port switch	SD-3xx	3642-00xx	6642-2200

is in conformity with the following EC directive(s).

No	Title
89/336/EEG	Electromagnetic Compatibility (EMC-directive)
73/23/EEG	Low Voltage Directive (LVD)

References of standards applied for this EC declaration of conformity.

No	Title	Issue
EN 61000-6-2	Immunity for industrial environments	2 (2001)
EN 61000-6-3	Emission standard for residential, commercial and light industrial environments	1 (2001)
EN 60950	Safety of information technology equipment	6 (2000)

The last two digits of the year in which the CE marking was affixed: 03



Hans Levin
Technical Manager
9th July 2003

Postadress/Postal address	Tel.	Telefax	Postgiro	Bankgiro	Org.nr/ Corp. identity number	Registered office
S-640 40 Stora Sundby Sweden	016-428000 Int+46 16428000	016-428001 Int+46 16428001	52 72 79-4	5671-5550	556361-2604	Eskilstuna

4. Specification

Power interface			
	SD-330	SD-321-MM-SC2	SD-312-2MM-SC2
Rated voltage	12–48 VDC, polarity independent		
Operating voltage	9.6 – 57.6 VDC		
Rated current	@ 10 VDC power input		
	250 mA	600 mA	800 mA
Rated frequency	DC		
Connection	Screw terminal		
Connector size	0.2 – 2.5 mm ² (AWG 24-12)		

Ethernet TX Interface

Electrical specification	IEEE std 802.3. 2000 Edition
Data rate	10 Mbit/s or 100 Mbit/s, manual or auto
Duplex	Full or half, manual or auto
Connection	RJ-45, shielded
Circuit type	TNV-1
Transmission range	100 m

Ethernet FX Interface

Optical specification	IEEE std 802.3. 2000 Edition
Data rate	100 Mbit/s
Duplex	Full
Connection	SC
Transmission range	2 km

Mechanics

Dimension (W x H x D)	55 x 100 x 128 mm
Weight	<0.35 kg
Mounting	DIN-rail
Degree of protection	IP 20 (IEC 529)

Insulation between Interface

Power Interface to all other Interfaces	4.2 kVDC, 3 kV RMS @ 50 Hz and 60s duration
TX signal Interface to all other	2.1 kVDC, 1.5 kV RMS @ 50 Hz and 60s duration
TX chassis Interface to all other	1.5 kVDC, 1 kV RMS @ 50 Hz and 60s duration

Climatic environment

Temperature, operating	+5 to +55°C
Temperature, storage and transportation	–25 to +70°C
Relative humidity, operating	5 to 95% (non-condensing)
Relative humidity, storage and transportation	5 to 95% (condensation allowed outside packaging)

Configuration

Auto configured (auto-negotiation) or manually setting of speed and duplex of individual TX port, by DIP-switches.

5. Maintenance

No maintenance is required, as long as the unit is used as intended within the specified conditions.

6. Installation



6.1 Mounting /Removal

Before mounting or removing the unit:

Prevent damage to internal electronics from electrostatic discharges (ESD) by discharging your body to a grounding point (e.g. use of wrist strap).

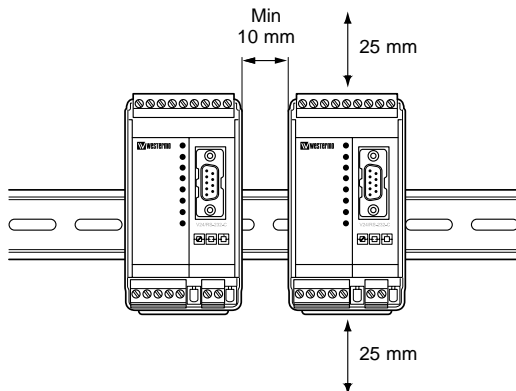
Prevent access to hazardous voltages by disconnecting the unit from AC/DC mains supply and all other electrical connections.

Mounting

This unit should be mounted on 35 mm DIN-rail which is horizontally mounted on a wall or cabinet backplate.

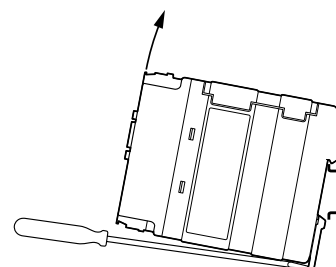
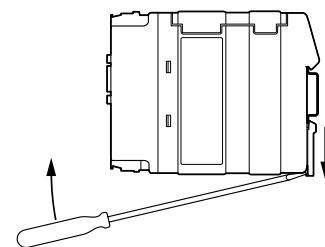
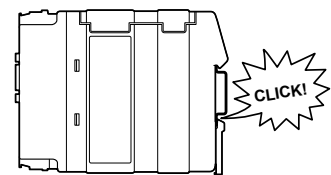
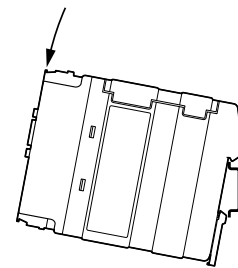
This unit uses convection cooling. To avoid obstructing the air flow around the unit, use the following spacing rules. Minimum spacing 25 mm (1.0 inch) above/below and 10 mm (0.4 inches) left/right the unit.

Snap on mounting, see figure.

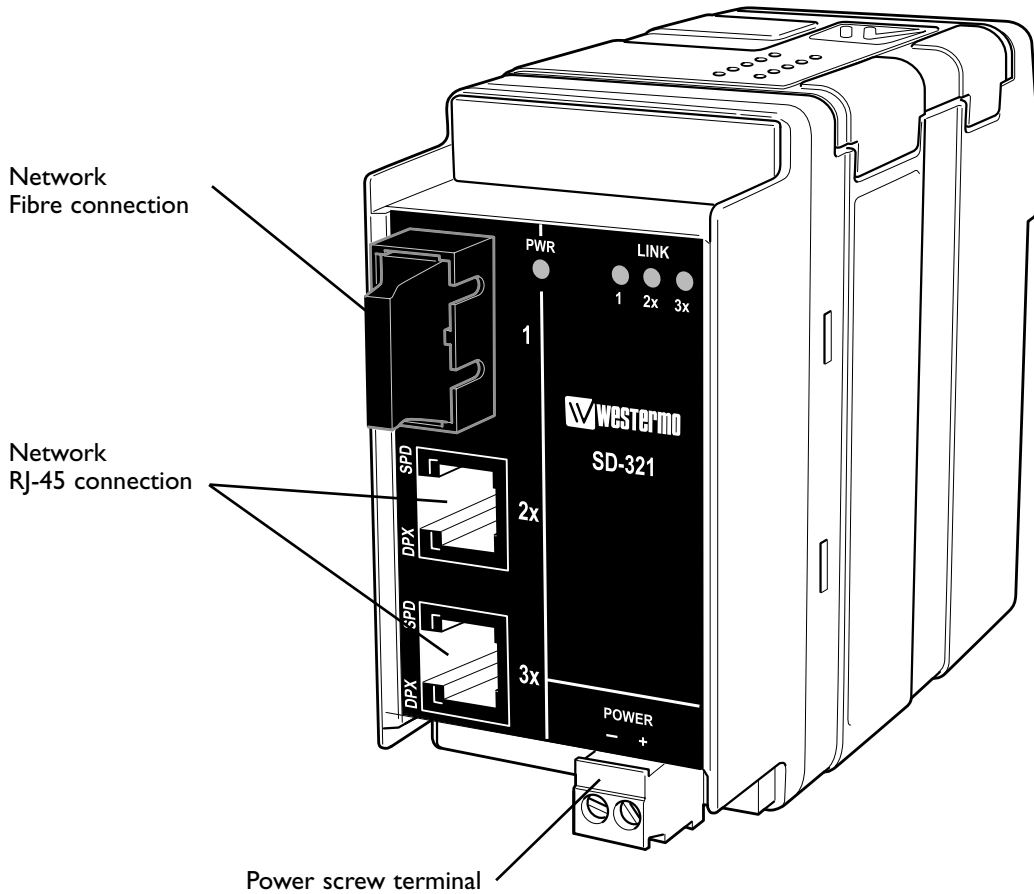


Removal

Press down the black support at the back of the unit using a screwdriver, see figure.



6.2 Connections

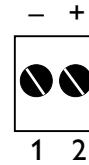


Available models:

- ⌘ SD-330 100Base-TX: 3ports
- ⌘ SD-321 100Base-TX: 2ports 100Base-FX: 1port
- ⌘ SD-312 100Base-TX: 1port 100Base-FX: 2ports

6.2.1 Power

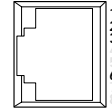
12–48 VDC must be connected to the unit.
The power input is polarity independent, even if ± marked.



6.2.2 TX

Ethernet TX connection (RJ-45 connector), Media Dependent Interface-Crossover.

Contact	Signal Name	Direction*	Description/Remark
1	RD+	In	Received Data
2	RD-	In	Received Data
3	TD+	Out	Transmitted Data
4			Terminated
5			Terminated
6	TD-	Out	Transmitted Data
7			Terminated
8			Terminated
Chassie			HF-connected

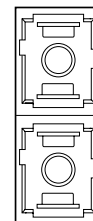


* Direction relative SD-300.

CAT 5 cable is recommended.
Unshielded (UTP) or shielded (STP) connector might be used.

6.2.3 FX (Optional)

Ethernet FX connection.
1300 nm multimode fiber transceiver with SC-connector.
The dust protection plug shall be mounted when no fibre is connected.



6.3 DIP-switch settings

DIP-switches are accessible under the lid on top of the unit. DIP-switches are used to configure the modem.



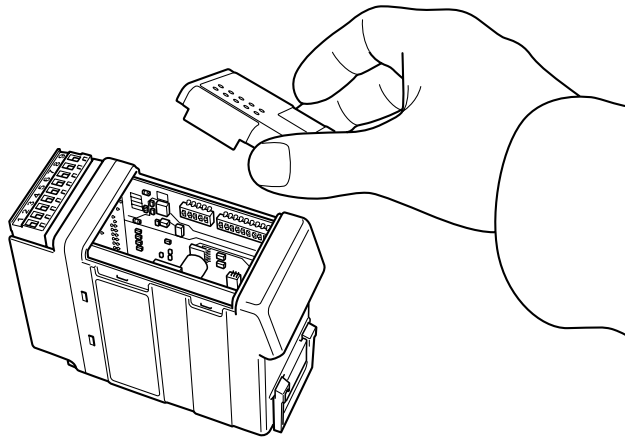
Warning!

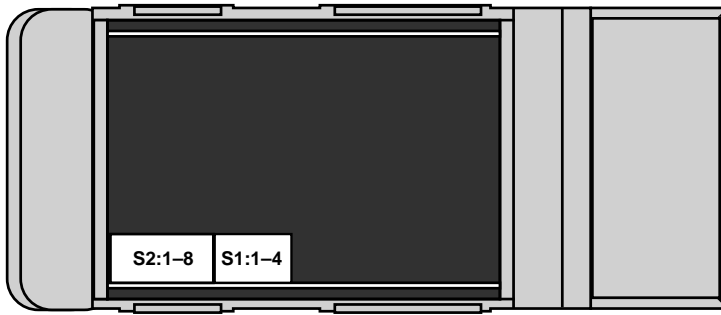
Prevent damage to internal electronics from electrostatic discharges (ESD) by discharging your body to a grounding point (e.g. use of wrist strap), before the lid on top of the modem is removed.




Warning! Do not open connected equipment.


Prevent access to hazardous voltages by disconnecting the unit from AC/DC mains supply and all other electrical connections.







Individual Auto Negotiation disable
Disable or enable auto-negotiation
Enable will override any S2 settings

S1  A-N enabled for all TX-ports.
 Factory default.


S1  A-N disabled for TX-port 1x and 3x. Setting of S2 will be valid for port 1x and 3x.

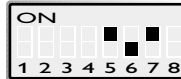
Individual Port Speed
10 Mbit/s or 100 Mbit/s

S2  100 Mbit/s set for every TX-port.
 Factory default.

S2  TX-port 1x and 2x set to 10 Mbit/s, port 3x set to 100 Mbit/s. Requires A-N disabled.

Individual Port Duplex
Half or full

S2  Full duplex set for every TX-port.
 Factory default.

S2  TX-port 1x and 3x set to half duplex, port 2x set to full duplex. Requires A-N disabled.

The DIP-switch settings are ignored for FX ports.

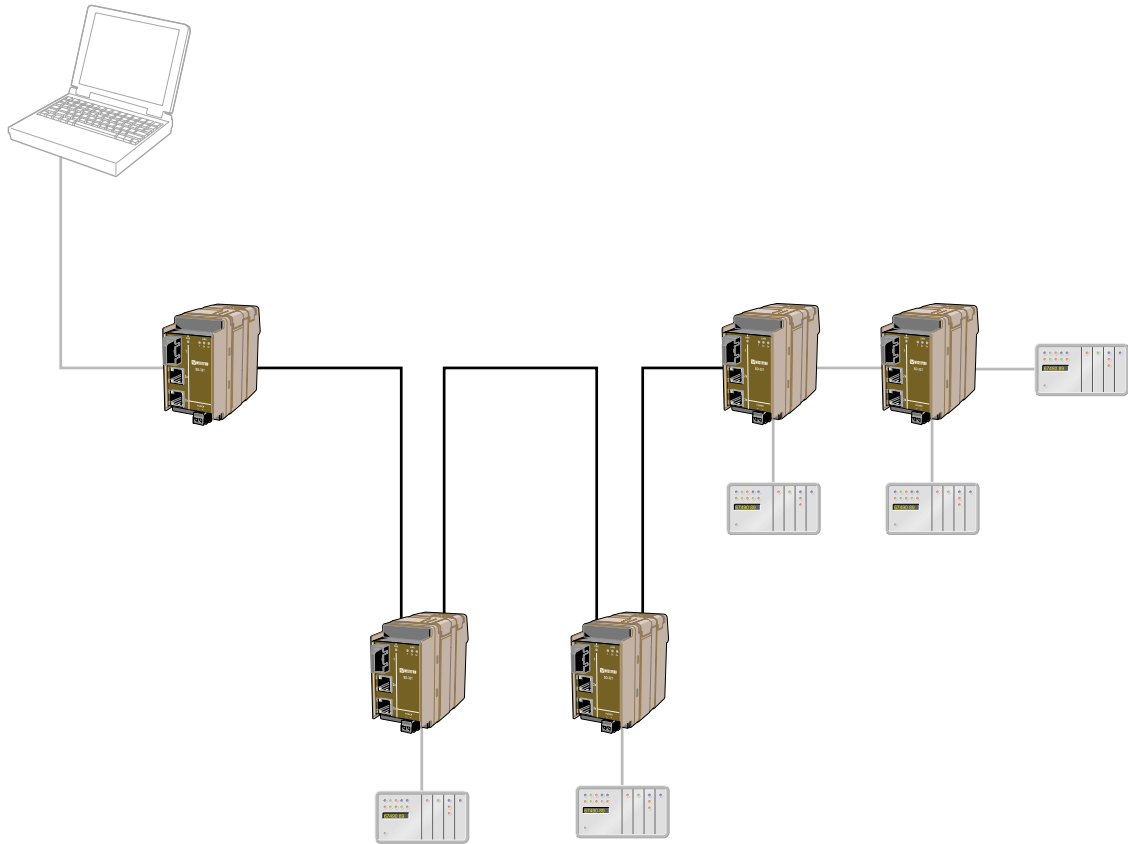
6.4 LED indicators

At power on the PWR immediately lights and the other LEDs will run through a LED test sequence.

In the test sequence every LED flashes twice, starting with SPD and ending with LINK LEDs.

LED	Status	Indication of
PWR	OFF	No internal power (external power not connected)
	ON	Power OK
LINK	OFF	No Ethernet link Cable not connected
	ON	Good Ethernet link
	Flash	Ethernet data is transmitted or received, traffic indication
SPD (TX only)	OFF	10 Mbit/s Speed not negotiated
	ON	100 Mbit/s
DPX (TX only)	OFF	Half duplex Duplex not negotiated
	ON	Full duplex

Application example



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