

2G-1S.1.0



Vertical mounting to DIN35*



Horizontal mounting to DIN35**



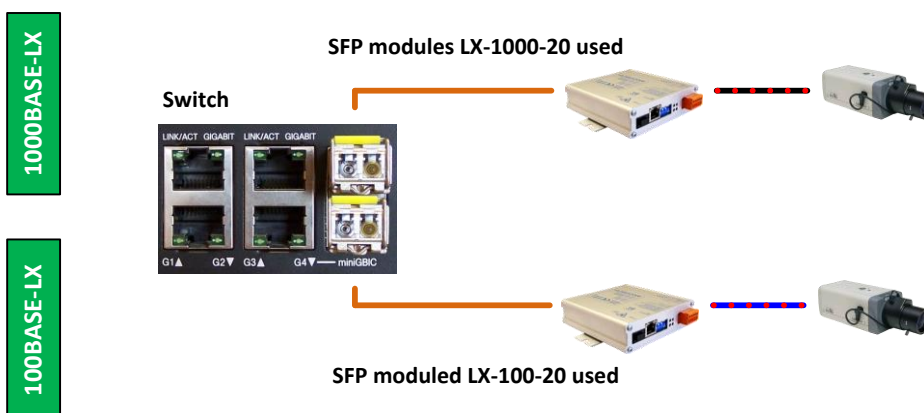
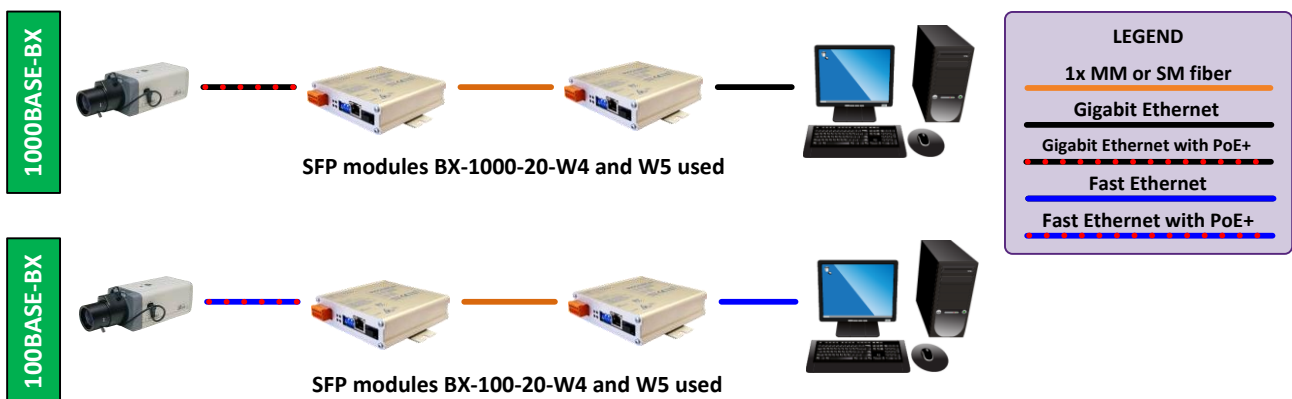
Mounting to flat surface

- SFP slot with support of 100/1000BASE-X
- Gigabit Ethernet port with PoE+ (25.5W)***
- Support of JUMBO packets
- FAR END FAULT / LINK PATH THROUGH support
- Detection of optical / FTP cable disconnection
- Fine overvoltage protections 30A [8/20μs]
- Working temperature from – 40°C to +70°C



ORDERING NAME	CODE	NOTE
2G-1S.1.0-BOX	1-851-280	10-60VDC/10-30VAC
2G-1S.1.0-BOX-PoE***	1-851-220	10-60VDC/10-30VAC
ACCESSORIES		
DIN35-LOCK-V1	5-500-034	For vertical mounting
* For mounting use DIN holder DIN35-LOCK-V1.		
**DIN35-LOCK holder for horizontal mounting to DIN35 included.		
*** Compatible with PoE+ standard IEEE 802.3at-2009 up to max. 25.5W.		
*** Supply with PoE 48-57VDC / Supply without PoE 10-60VDC/10-30VAC.		
For available SFP modules see www.metel.eu		

Example of connection in point-to-point topology



SFP slot with support of 100/1000BASE-X

Media converters are equipped with one universal SFP slot. SFP slots are compatible with SFP modules with optical interfaces: BX, EX, EZX, LX, SX. The list of compatible METEL SFP modules and their technical parameters is provided in the tables below.



Available SFP modules	100Mbps	1000Mbps
BX-xxx*-W5	4-101-010	4-101-110
BX-xxx*-W4	4-101-020	4-101-120
LX-xxx*	4-101-030	4-101-130
* 100 for 100Mbps / 1000 for 1000Mbps		

Ethernet	Wave length	Connector	Optical power	Sensitivity	Range SM* [km]	Range MM* [km]
	Tx/Rx [nm]		SM/MM* [dBm]	SM/MM* [dBm]	[km]	[km]
1000BASE-BX-U	1310/1550	simplex SC/PC	−9 ... −3	−22	20	2
1000BASE-BX-D	1550/1310	simplex SC/PC	−9 ... −3	−22	20	2
100BASE-BX10-U	1310/1550	simplex SC/PC	−14 to − 8 / −10 to 0	−31 / −28	20	5
100BASE-BX10-D	1550/1310	simplex SC/PC	−14 to − 8 / −10 to 0	−31 / −28	20	5
1000Base-LX	1310/1310	duplex LC/PC	−9 ... −3	−22	20	2
100Base-LX	1310/1310	duplex LC/PC	−14 to − 8 / −10 to 0	−31 / −28	20	5
Safety	WARNING: converters contain laser sources of class 1 according to EN 60825-1-1					
* SM fibers of diameter 8/125 or 9/125μm, MM fibers of diameter 50/125 or 62.5/125μm						

Gigabit Ethernet port with PoE 25.5W support

Gigabit Ethernet port supports standards 10BASE-T, 100BASE-Tx and 1000BASE-T, Auto negotiation function and MDI/MDI-X. PoE version of media converters are compatible with PoE standards IEEE 802.3af and IEEE 802.3at. They can supply terminal device over Ethernet cable with the power of up to 25.5W.

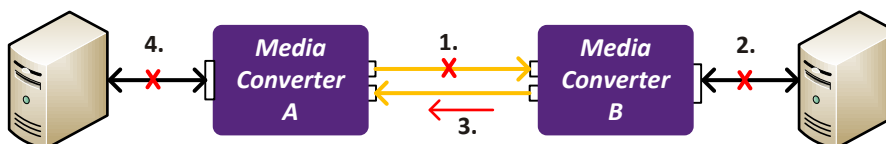
Support of JUMBO packets

Media converters support forwarding of JUMBO packets of length up to 10K Bytes. This function can be freely switched on/off by a DIP switch on the front panel.

Support of FAR END FAULT and LINK PATH THROUGH

Function Far End Fault defined in standard 802.3u provides the function of informing both terminal devices of line loss. If there is a e.g. transmission failure on optical link between media converters then the media converter automatically generates signal Far End Fault and sends it over the optical link to the counterparty. Function Link Path Through then automatically disconnects metallic line on each media converter and thus informs terminal devices about line loss. The failure is immediately detected and terminal devices can attempt to establish communication with another link.

1. Media converter B lost signal.
2. Media converter B disconnected metallic line.
3. Media converter B sent alert to Media converter A.
4. Media converter A disconnected metallic line.



Detection of optical/FTP cable disconnection

It is possible to set monitoring of activity on optical or UTP port separately in each media converter. If the connection is lost the counterparty is informed about this status, see functions FAR END FAULT and LINK PATH THROUGH.

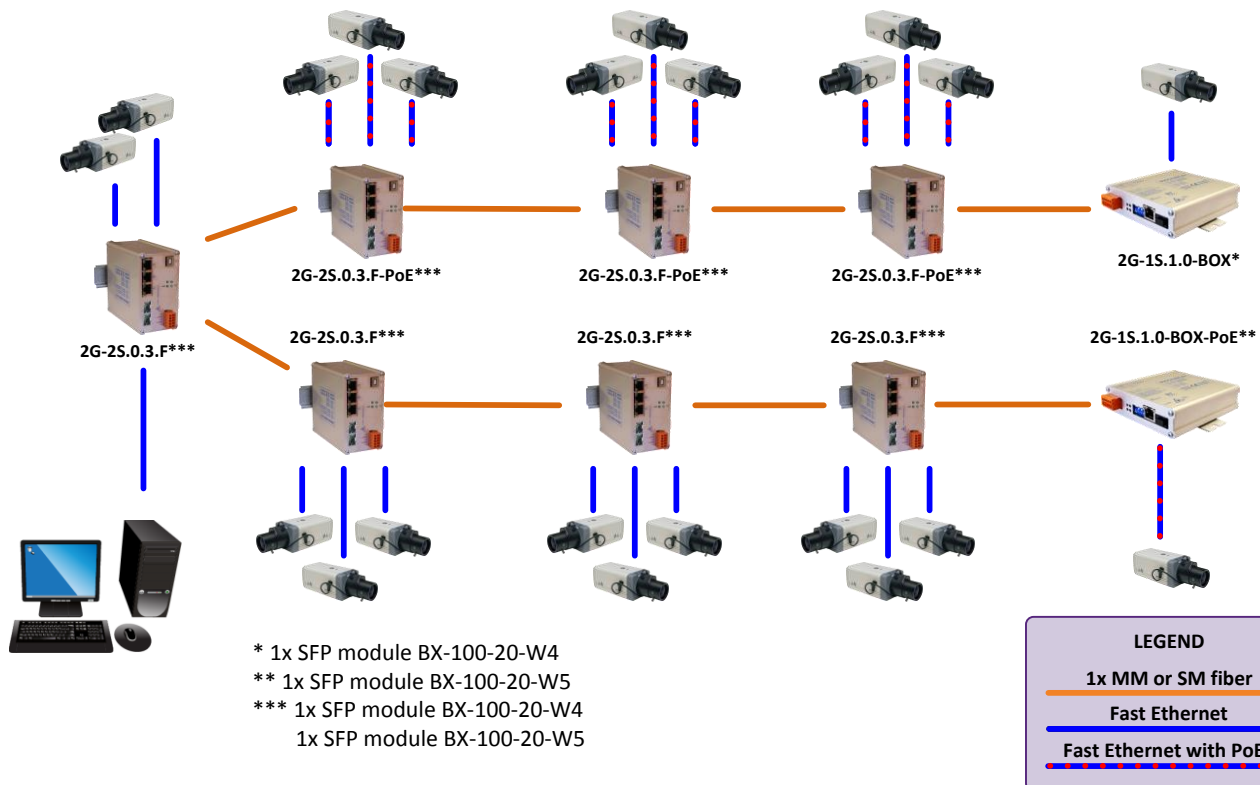
Fine overvoltage protections 30A [8/20μs]

All media converters inputs are protected by fine overvoltage protections, thus significantly increasing mean time between failures (MTFB) and minimizing service costs.

5-year ALL INCLUSIVE warranty

5-year ALL INCLUSIVE warranty, including damage to a device due to overvoltage, applies to all METEL IP devices. For converters with SFP slots the warranty can be claimed only when using METEL SFP modules. The exact terms of the warranty are provided in Warranty conditions on www.metel.eu.

Example of connection of two LAN-BUS buses



Technical parameters

	Parameter	Value	Unit	Note
LAN (UTP)	Supported formats	10/100/1000 BaseT		
	Overvoltage protection	GE port: 30	A	8/20us
	Connector	RJ45		
Power Supply	without PoE	10-60 / 10-30	VDC/AC	
	with PoE	48-53	VDC	
	with PoE+	52-57	VDC	
	Power consumption	Max.2.5	W	
	Protections	Overvoltage / current		30A (8/20μs)
Environment	Operational range	-40...+70	°C	temp. of environment
	Storage range	-40...+70	°C	
	Humidity	max. 95%		non-condensing
Dimensions	w / h / l	see page 5		
Weight		0.38	kg	
The producer retains the right to change any technical parameters without previous announcement.				

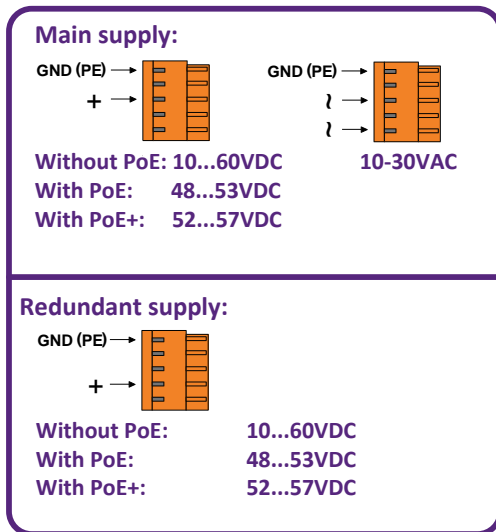
Installation

1. Mounting

Mount the media converter to flat surface of DIN35. All the necessary holders are included.

2. Connect supply

According to the pictures bellow, connect power supply in the range 10-60VDC or 10-30VAC. When supplying the terminal device with PoE/PoE+ it is necessary to supply the media converter with the voltage in the range 48-57VDC. Connection of supply is indicated by LED PWR switching on.



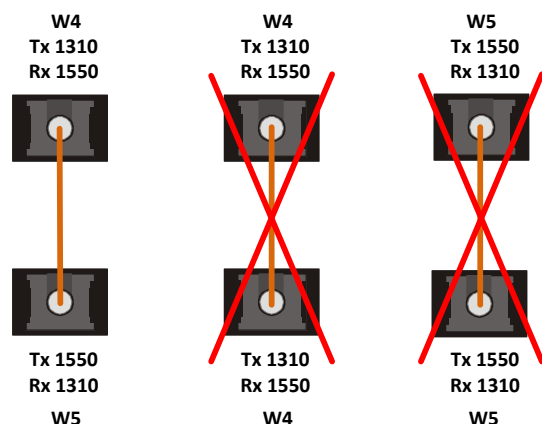
3. Grounding of overvoltage protections

To ensure proper functioning of overvoltage protections we recommend their grounding through supply terminal GNF(PE). When grounding please follow these rules:

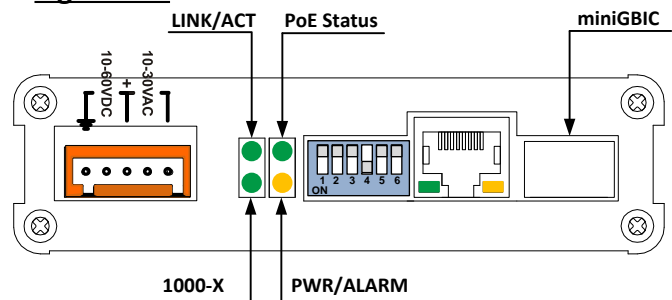
- grounding resistance must be up to 10Ω.
- the length of the wire to the earth point must be kept as short as possible.

4. Insert optical module

Any SFP module complying with MSA requirements (agreement of SFP modules manufacturers) can be inserted into the SFP slot. For modules with duplex transmission over one fiber (wavelength multiplex) we must ensure that the optical modules are connected correctly to each other. That means that e.g. for WDM modules METEL we can interconnect W4 with W5. We can't interconnect W4 with W4 or W5 with W5.



Signal LED



LINK/ACT – Blinking indicates activity on FO.

PoE Status – Blinking indicates detection and classification of terminal device. If the LED is on, terminal device is supplied from PoE (only for switched on PoE supply in a version with PoE).

1000-X – If the LED is on it indicates speed 1000Mb/s, if it's off the speed is 100Mb/s.

PWR/ALARM – Constant light indicates power supply. If the LED is blinking the device is in Alarm state. UTP or FO failure.

DIP switch functions description

1 – POE Enable/Disable (PoE Only) On/Off – Switch to position On to switch on the PoE supply on Gigabit Ethernet port.

2 – JUMBO Packet On/Off – Switch to position On to enable JUMBO packets support of up to 10240 bytes size.

3 – UTP Link Check On/Off – Activate / deactivate monitoring of activity on Gigabit Ethernet port.

4 – FIBER Link Check On/Off – Activate / deactivate monitoring of activity on optical port.

5 – FAR END FAULT Check On/Off

Activation/deactivation of **FAR END FAULT Check** function.

Both media converters METEL – the function can be used only with UTP Link* or FIBER Link* and speed 100 and 1000Mbps.

Media converter METEL connected to a media converter/switch of another manufacturer – the function can be used only with UTP Link* or FIBER Link* and speed 100Mbps. At speed 1000Mbps only function LINK PATH THROUGH is applied.

* it's not possible to watch both ports simultaneously

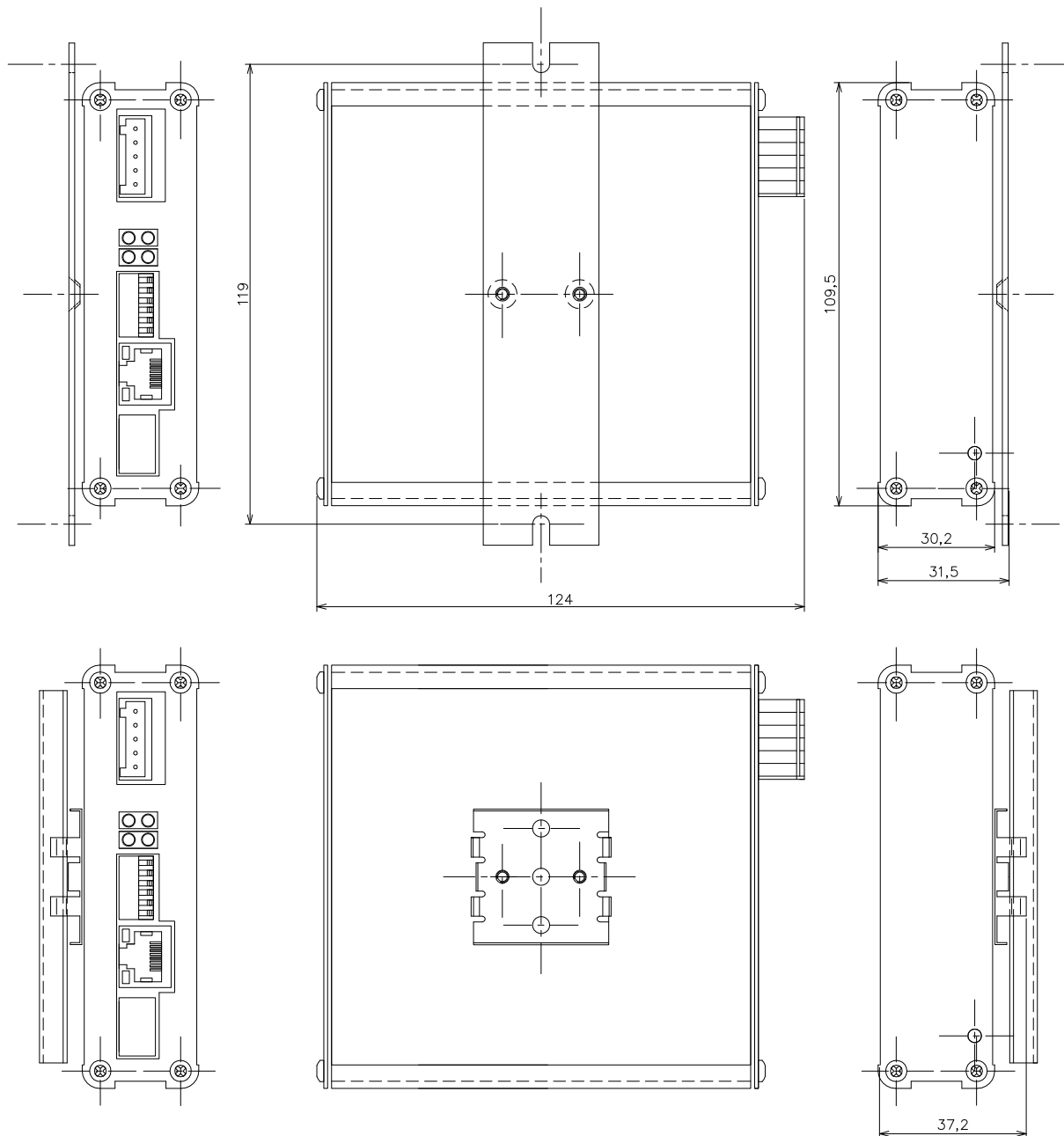
6 – SPEED 100/1000 (User) – When using other SFP modules than we supply it is necessary to set the speed the module is working at.

ON - speed 100Mbps **OFF** - speed 1000Mbps.

Note2: When using our supplied SFP modules no manual speed settings are needed and the device automatically detects the speed.

Note3: With every change on a DIP switch the device must be switched off/on in order for the changes to be applied.

Dimensions



Revize: 201404
201411 – Correction describe the function of DIP switches no.6.