

- Compatible with all RS485 Systems up to 1Mbps
- Digital Modulation
- 1x SC/PC Optical Port with WDM
- 2x RS485 or 1x RS422 port up to 1Mbps
- 1x Digital INPUT
- 1x Relay NO
- 1x Relay LOCK NO/NC
- EN 50131-1 Certified with IHAS Systems Asset, Galaxy Dimension, MB-Secure

- Modbus-RTU Compatible
- Overvoltage protection
- Current limiter in supply
- Working temperature from -40°C to $+70^{\circ}\text{C}$

PRODUCT NAME	CODE	SUPPLY
TDW-S-4C-BOX ⁽¹⁾	1-505-220	10-30VAC/10-60VDC
RDW-S-4C-BOX ⁽¹⁾	1-605-220	10-30VAC/10-60VDC
⁽¹⁾ Holders for mounting to DIN35 and flat surface are included.		

Description

Optoconverters are designed for transmission of two channels of either half-duplex RS485 bus or one four-wire bus RS422. Together with data buses they also enable transmission of one digital input state to relay output in both directions – all that over one singlemode or multimode optical fiber terminated by SC connector (grinding PC). The LOCK relay detects non-functional optical fiber communication. This may be caused by loss of power to the converter(s), fiber interruption, or converter failure.

A Typical Interconnection with Security System

Versatility



A Typical Interconnection with Modbus RTU System

Versatility



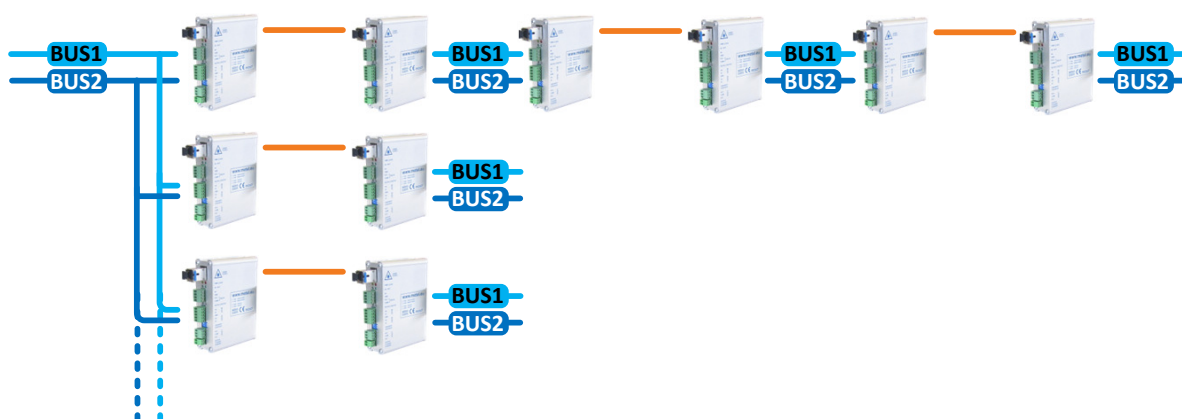
Technical parameters

	Parameter	Value	Unit	Note
BUS	Overvoltage protection	600	W	pulse 10/1000 µs
	Transmission speed	0 - 1	Mbps	
Optics	Output optical power	-14 to -8 / -10 to 0	dBm	SM / MM
	Sensitivity	-31	dBm	SM / MM
Optical fibers	Optical fibers	1x SM 9/125 - SC connectors	µm	grinding PC
		1x MM 50(62.5)/125 - SC conn.	µm	grinding PC
Optical range	Multimode	6	km	50/125µm
	Multimode	4	km	62.5/125µm
	Singlemode	20	km	9/125µm
ATTENTION: class 1 LASER PRODUCT COMPLIES WITH 21 CFR 1040.10 and 1040.11 (EN 60825-1-1)				
LOCK relay	NOC contact	max. 125VAC/0.5A	or 60VDC/0.3A	
	NO contact closed = communication OK, NC contact closed = fault communication			
OUTPUT relay	1x NO contact	max. 125VAC/0.5A	or 60VDC/0.3A	
	NO contact in de-energized state open			
Power Supply	Voltage	10-30 / 10-60	VAC / VDC	
	Current at 12VDC	Max. 100	mA	
Protections	overvoltage / current	600	W	pulse 10/1000 µs/reversible
Environment	Operational range	-40..+70	°C	temperature of environment
	Humidity	max. 95 (non-condensing)	%	
Mechanical	Dimensions - w / h / l	Page 3	mm	
Parameters	Weight	typ.: 0.2	kg	
The producer retains the right to change any technical parameters without previous written or published notification.				

Serial and Parallel Connection of xDW-S-4C Converters

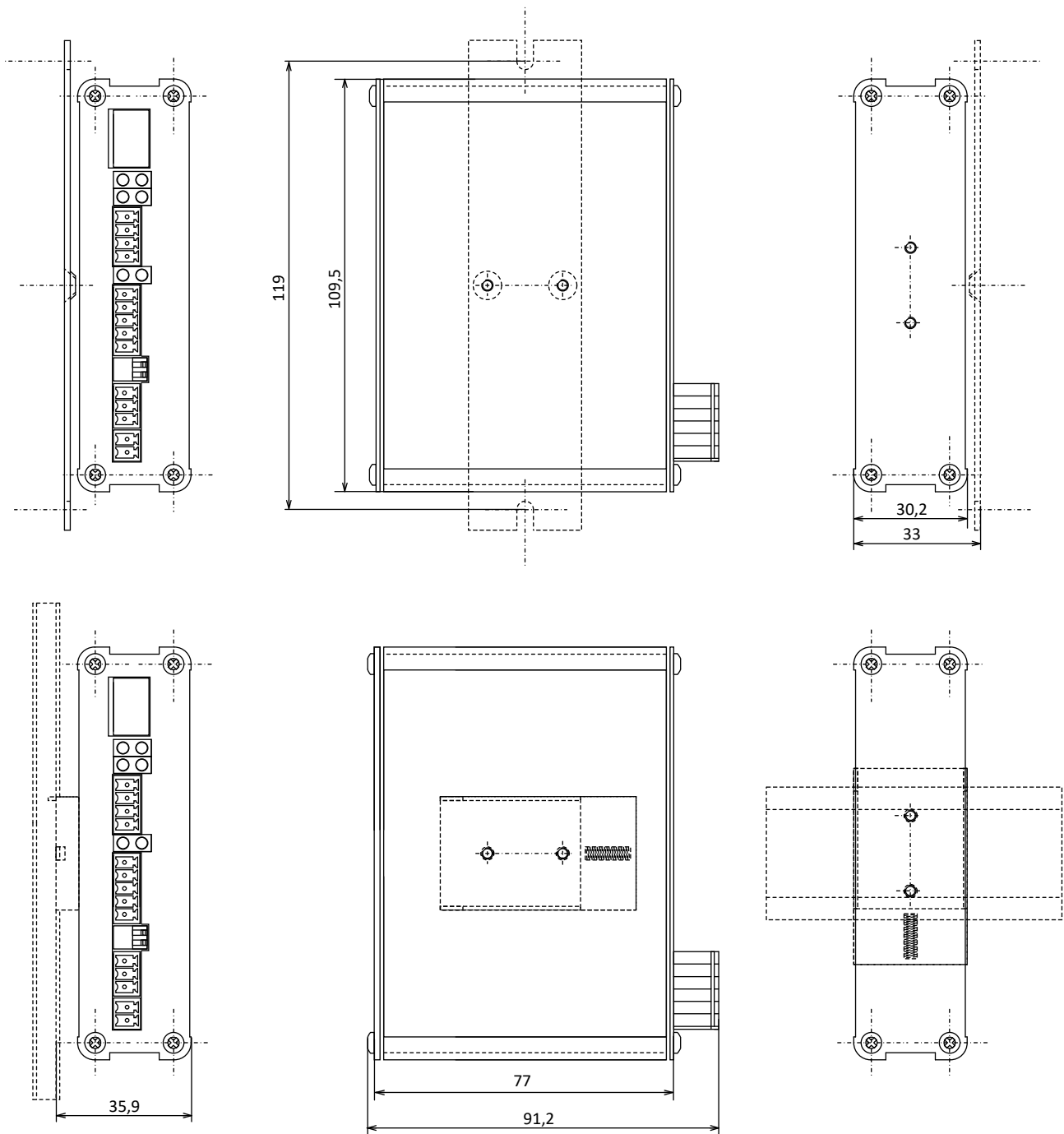
Versatility

Thanks to the minimal delay and transparency of transmission, xDW optical converters enable their parallel and serial connection. The maximum number of serial and parallel repetitions should not exceed 8.



Dimensions


Universality

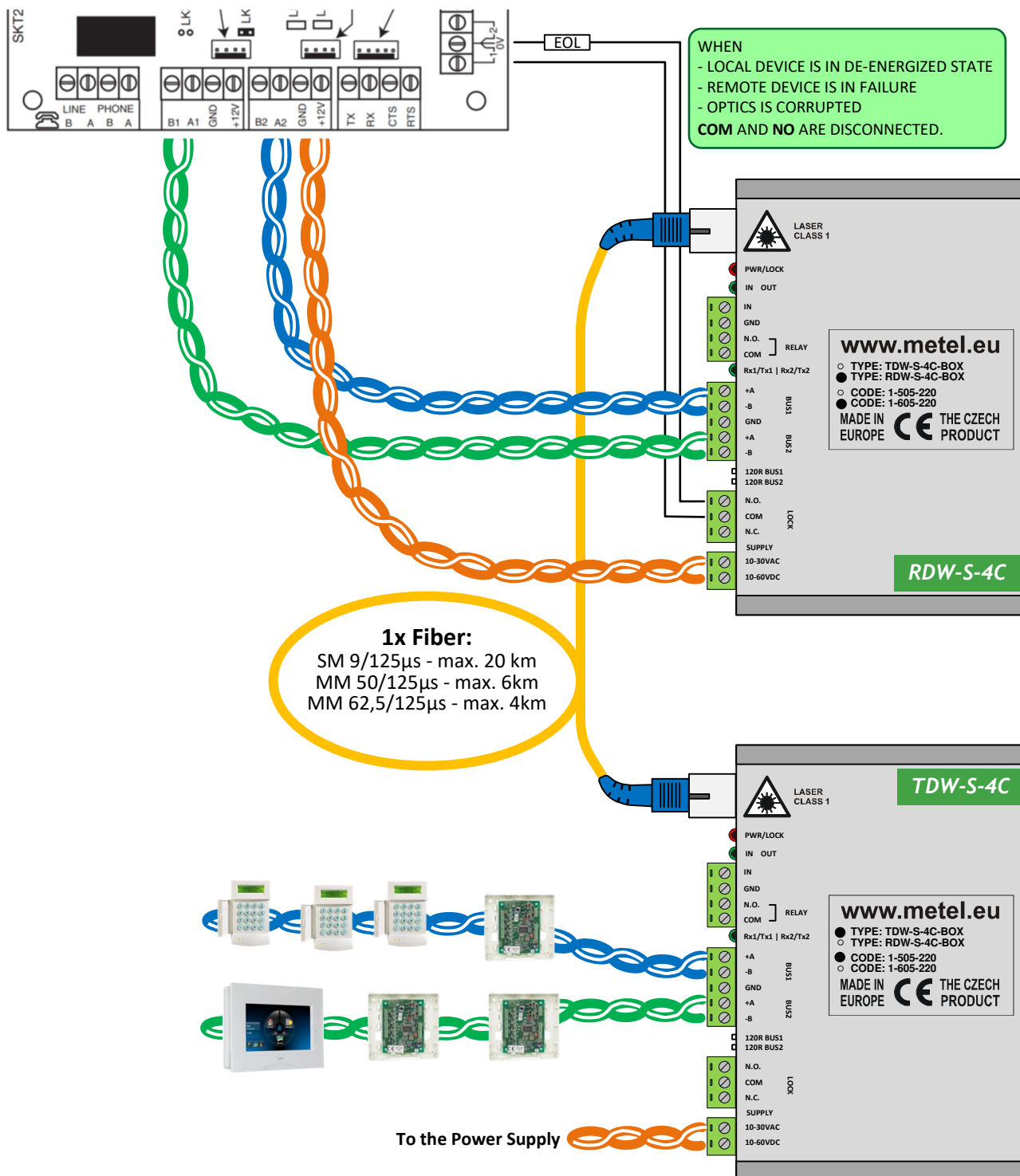


REV.: 201701 – xDW-S-4C
 201706 – add wire connection with DSC Power NEO
 201810 – change blinking LED
 202202 – new certification with I&HAS
 202204 – Added connection with MAXPRO Intrusion
 202209 – Deleted old label break

xDW-S-4C**Digital Optoconverters RS485 + Input****Example of Connections with GALAXY Dimension Panel**

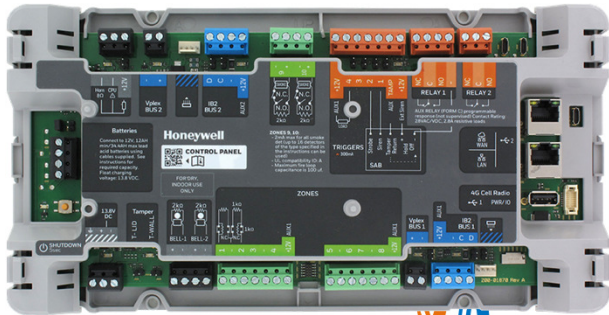
- The converters are compatible with the RS485 buses of the Galaxy Dimension and FLEX systems.
- Only one single-mode or multi-mode optical fiber is sufficient for bidirectional data transmission.
- The converters can be connected in series or in parallel.
- The LOCK relay detects a loss of connection between the optical converters.
- We recommend using shielded FTP cables for RS485 bus transmission.

 **Certificates confirming compatibility with the standards of the EN50131 and EN50130 series are available at our website www.metel.eu.**



xDW-S-4C**Digital Optoconverters RS485 + Input****Example of Connections with MAXPRO Intrusion**

- The converters are compatible with the RS485 buses of the Asset systems.
- Only one single-mode or multi-mode optical fiber is sufficient for bidirectional data transmission.
- The converters can be connected in series or in parallel.
- The LOCK relay detects a loss of connection between the optical converters.
- We recommend using shielded FTP cables for RS485 bus transmission

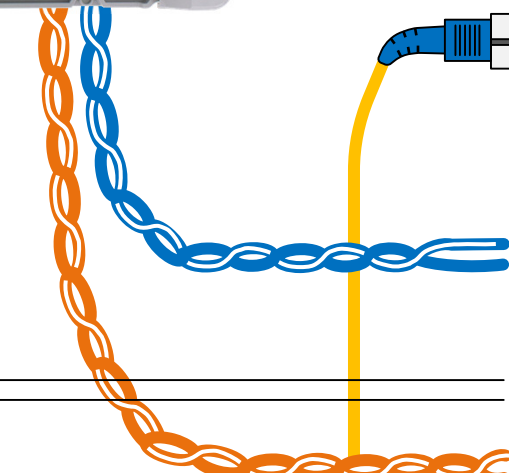


WHEN

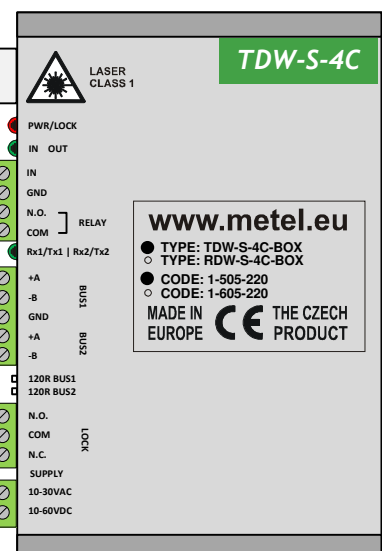
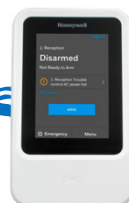
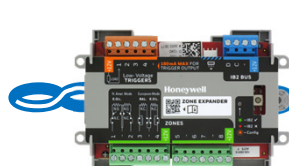
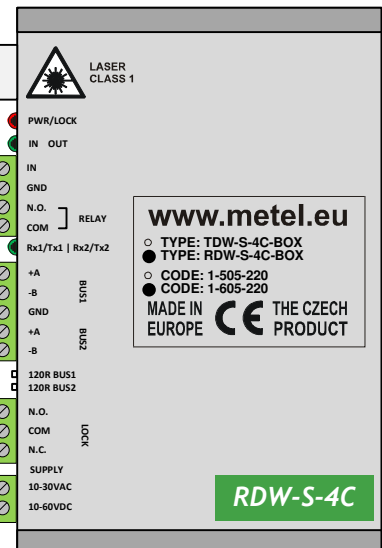
- LOCAL DEVICE IS IN DE-ENERGIZED STATE
- REMOTE DEVICE IS IN FAILURE
- OPTICS IS CORRUPTED

COM AND NO ARE DISCONNECTED.

EOL




1x Fiber:
 SM 9/125μs - max. 20 km
 MM 50/125μs - max. 6km
 MM 62,5/125μs - max. 4km

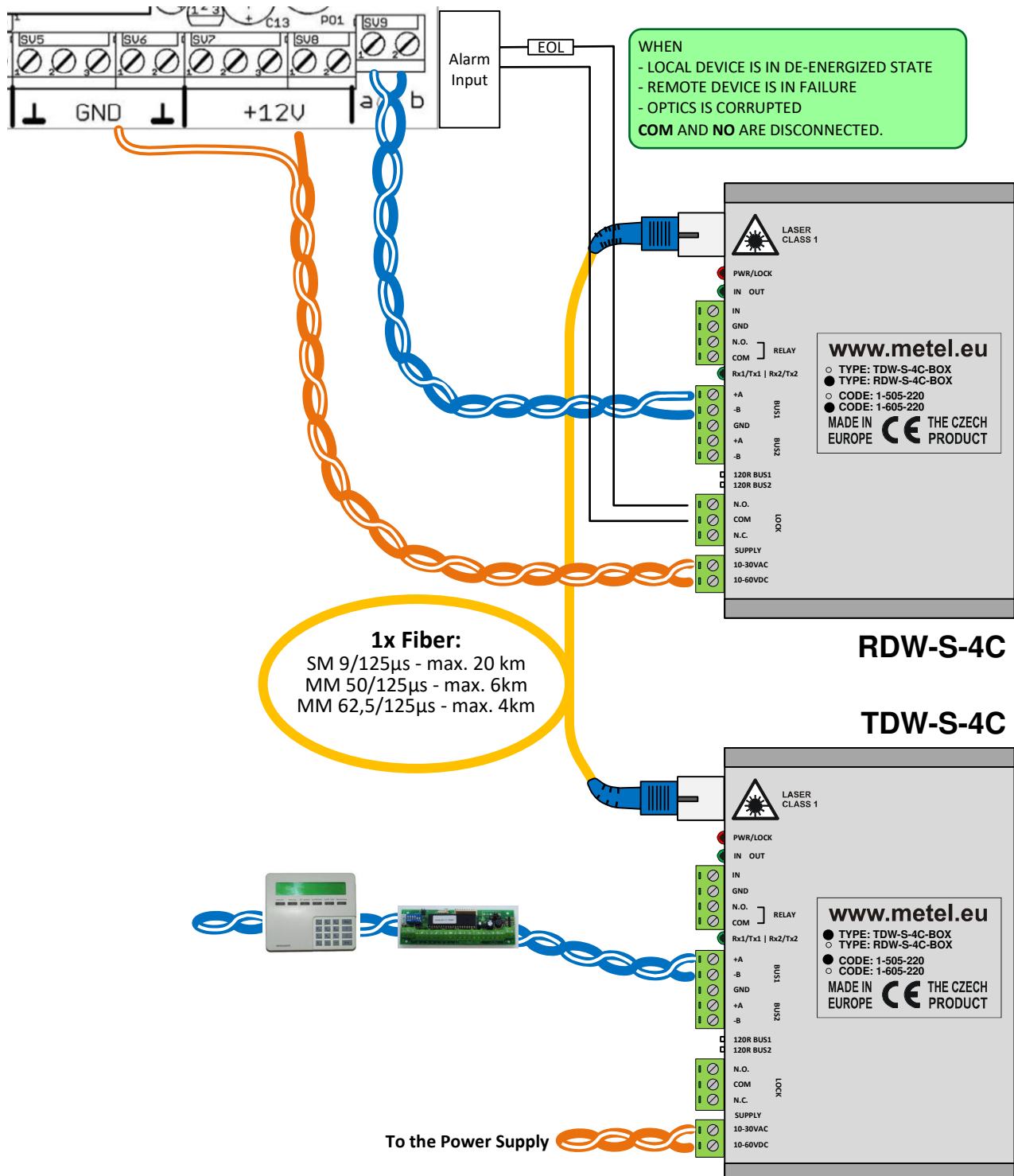


To the Power Supply

xDW-S-4C**Digital Optoconverters RS485 + Input****Example of Connections with Asset**

- The converters are compatible with the RS485 buses of the Asset systems.
- Only one single-mode or multi-mode optical fiber is sufficient for bidirectional data transmission.
- The converters can be connected in series or in parallel.
- The LOCK relay detects a loss of connection between the optical converters.
- We recommend using shielded FTP cables for RS485 bus transmission.

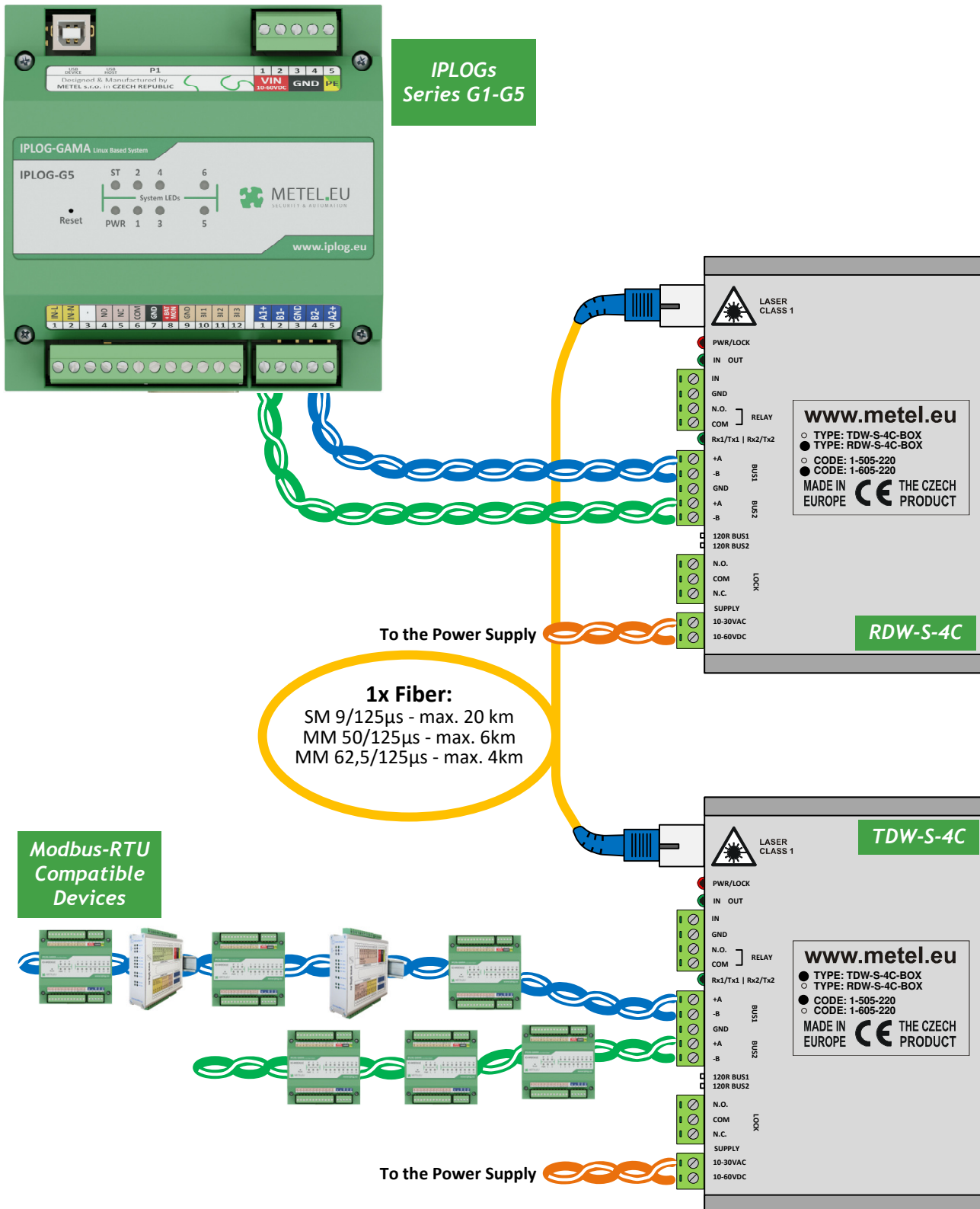
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xDW-S-4C**Digital Optoconverters RS485 + Input****Example of Connections with Modbus**

xDW-S-4C converters allow the transmission of any protocol corresponding to the specification of the RS485 physical layer. This applies to all protocols up to 1Mbps. One of them is Modbus-RTU, popular especially in automation systems.

 **xDW converters do not require setting the baud rate, number of data bits or stop bits.**



xDW-S-4C**Digital Optoconverters RS485 + Input****Installation and Settings****1. Mounting**

Mount the converter to flat surface or DIN35 rail.

2. Connect supply

10-30VAC or 10-60VDC acc. to the picture below. The supply is indicated by yellow power LED PWR.

3. Connect optical fibers

terminated by SC connector (grinding PC). After interconnection of TDW-S-4C and RDW-S-4C LED LOCK switches off.

4. Connect signal wires

according to the pictures below.

Connect RS485 buses to A+ and B- terminals.

For RS422 transmission use e.g. BUS1 for reception and BUS2 for transmission on one side; the other side will then use BUS1 for transmission and BUS2 for reception.

Terminate the data buses with 120Ω resistance by switching the DIP switch to ON position.

Connect shielding to only one side to the GND terminal.

5. Connect inputs and relay outputs

IN - digital inputs can be activated by connection with GND or by low level of TTL.

OUT - relay outputs max. load 125VAC/0.5A or 60VDC/0.3A. Contacts are closed after input activation.

RELAY LOCK - relay reacting to error conditions.

Used for alarm systems, starting of back-up, etc. The function is described in the picture below.

6. Indications

LED PWR - by switching on detects supply

LED LOCK - by switching on detects relay closure

- by switching on detects optics interruption

- by switching on detects failure of a remote device

BUS1,2 Rx/Tx

- green LED Tx blinking – data transmission

- red LED Rx blinking – data reception

