

Dupline® DuplineSafe/Optical Fibre Converters Types GS 3492 0000 and GS 3493 0000

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- Converts Dupline® for transmission on optical fibre
- Runs on optical multimode fibre pairs (50/125, 62.5/125)
- ST type connector
- Up to 5 km optical transmission distance with 62.5/125 fibre
- DIN-rail mounting
- LED-indications for supply and fibre connection
- AC power supply
- cULus approved

Product Description

The GS34930000 converts the Dupline® signal for transmission on optical multimode fibre pairs (50/125, 62.5/125). The GS34930000 always operates together with a GS34920000, which converts

the signal back from optical to electrical representation via a built-in channel generator output stage. Up to 5 km optical transmission distance can be achieved.

Ordering Key

GS 3493 0000 230

Type: Dupline® _____
Function _____
Power supply _____

Type Selection

Supply	Ordering no. Optical-to-Electrical Converter	Ordering no. Electrical-to-Optical Converter
115/230 VAC 24 VAC	GS 3492 0000 230 GS 3492 0000 024	GS 3493 0000 230 GS 3493 0000 024

Supply Specifications

Power supply	AC-Types	Overvoltage cat. III (IEC 60664)
Rated operational voltage through term. 21 & 24 jumper term. 22 & 23	230	230 VAC ± 15% (IEC 60038)
*) through term. 21 & 22 jumper term. 24 & 22 jumper term. 21 & 23	115	115 VAC ± 15% (IEC 60038)
through term. 21 & 22	024	24 VAC ± 15% (IEC 60038)
Frequency		45 to 65 Hz
Rated operational power		Typ. 3 W
Power dissipation		≤ 4 W
Rated impulse withstand voltage	230 V 115 V 024 V	4 kV 2.5 kV 800 V
Dielectric voltage Supply - Dupline®		≥ 4 kVAC (rms)

*) When using 115 VAC, make sure to parallel the terminals as shown.

Input/Output Specifications

Optical Interface	
Optical fibre type	Multimode Glass fibre
Dimensions	50/125 or 62.5/125
Connectors	ST plugs
Optical power budget @ 25°C	15dB (62.5/125 µm fibre) 10.5dB (50/125 µm fibre)
Transmission distance	Up to 5 km (62.5/125 fibre)
Output (GS 3492 0000 only)	Secondary Dupline®
Number of outputs	1
Output voltage	8.2 VDC
Current	≤ 40 mA
Short-circuit protection	≤ 60 s
Sequence time	Follows primary Dupline®
Dupline® transmission delay from	
- primary to secondary	1 mSec
- secondary to primary	max 2 Dupline® scan 136 mSec

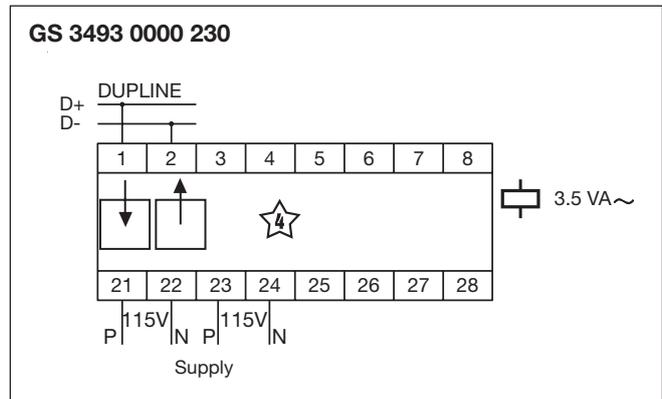
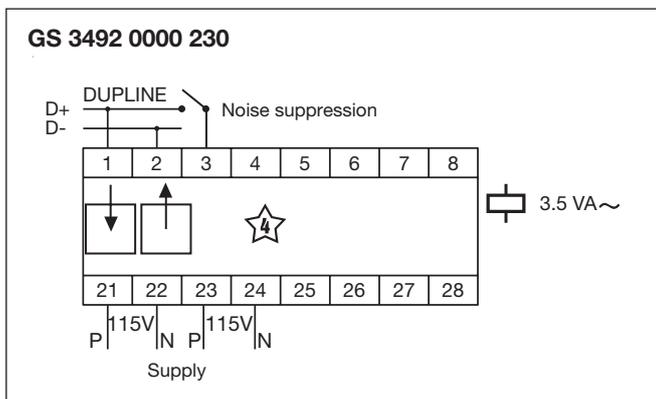
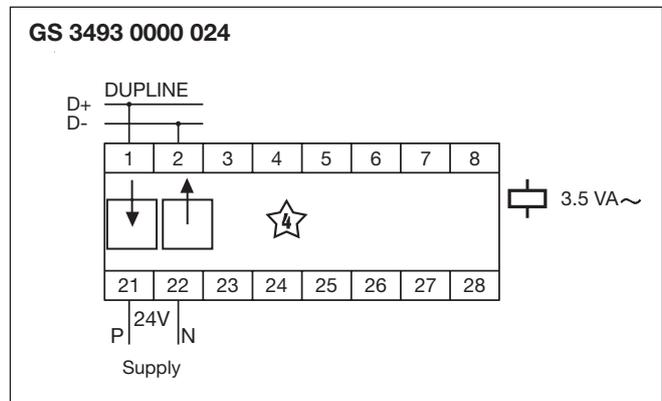
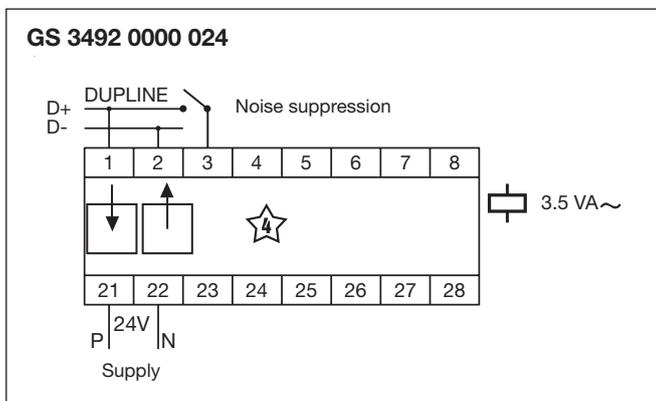


General Specifications

Power ON delay	< 1.5 s
Indication for	
Supply ON	LED, green
Dupline® carrier	LED, yellow
Optical communication	LED, yellow
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	0° to +50°C (+32° to +122°F)
Storage temperature	-20° to +85°C (-4° to +185°F)
Humidity (non-condensing)	20 to 80% RH

Mechanical resistance	
Shock	15 G (11 ms)
Vibration	2 G (6 to 55 Hz)
Terminals	Screwterminals
Tightening torque	0.8 Nm
Dimensions	H4-housing
Weight	250 g
EMC performance	EN61000-6-3 (emission) EN61000-6-1 (immunity)
Approvals	Note: Approved by TÜV to be used together with DuplineSafe cULus

Wiring Diagrams



Mode of Operation

The Dupline® optical converters enable the use of glass fibre as transmission media on one or more sections of a Dupline® Fieldbus network. The possibility of freely combining electrical and optical media makes it easier to adapt the Dupline® Fieldbus to system requirements. Optical fibres can be useful when Dupline® signals have to be transmitted outdoor in geographical areas with fre-

quent thunderstorms, or in sections with heavy noise induction.

The GS 3493 0000 converts the Dupline® signal from electrical to optical level, while the GS 3492 0000 with a built-in channel generator converts the carrier signal back from optical to electrical level (secondary Dupline®). Up to 5 km of distance can be achieved on the glass fibre,

which have the dimensions 50/125 or 62.5/125. Two optical fibres are required for connecting the two optical converter units.

The optical converter introduces a delay of 2 Dupline® scans when transferring signals from the secondary side to the primary side.

Reaction time
The total delay that is intro-

duced by the optical converter consists of the time it takes for information from the safety transmitter to be transmitted to the Channel Generator and to be passed on to the safety relay.

If a safety transmitter (GS75102101) is installed on the secondary side of an optical converter, the signal from this transmitter will have an extra delay of two Dupline® scan cycles.

Mode of Operation (cont.)

This means that the safety function reaction time (as defined in the datasheet for GS38000143230) will be increased with the time corresponding to two Dupline® scan cycles.

If a safety relay (GS38300143230) is in-stalled on the secondary side of an optical converter,

the safety function reaction time will be increased by 1 ms.

If both the safety transmitter and safety relay is placed on the secondary side of the Optical converter, the delay will be:

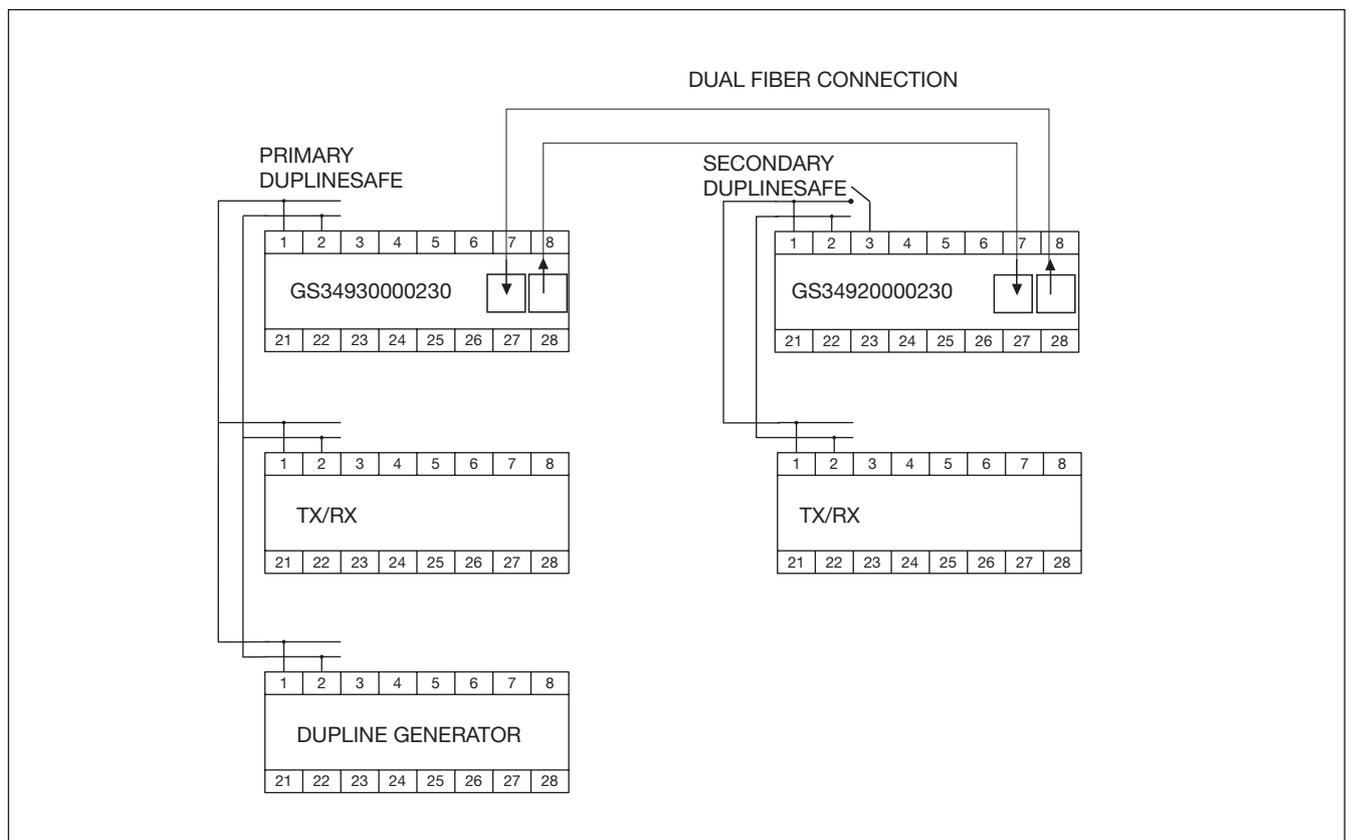
Two Dupline® scan cycles + 1 ms.

First information from the safety transmitter goes from the secondary side to the Channel Generator on the primary side; it introduces a delay of two Dupline® scan cycles. Next, the information goes from the Channel Generator through the optical converter back to the

secondary side and to the safety relay; a delay of one ms. is introduced.

Dupline® scan cycle = (number of channels x 1 ms) + 8 ms

Application



Dimensions (mm)

