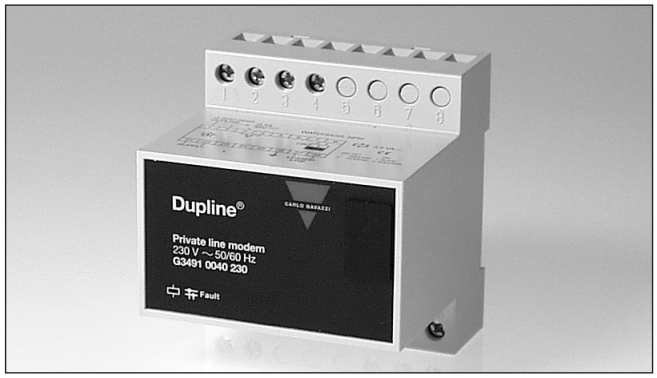
Private Line Modem
Type G 3491 0040



- **Dupline® - private line modem**
- **Long distance connection of two Dupline® networks**
- **Approved according to EU standard TBR 15**
- **Watchdog output**
- **For mounting on DIN-rail (EN 50022)**
- **LED-indications for Supply, Dupline® and Fail**
- **AC Power Supply**

Product Description

Dupline® modem for bidirectional signal transmission via owned or rented telephone cables or for installation of Dupline® point to point connections over distances exceeding 10 km.

Ordering Key

G 3491 0040 230

Type: Dupline®
Type no.
Supply

Type Selection

Supply	Ordering no. Dupline - Private line modem
24 VAC	G3491 0040 024
115 VAC	G3491 0040 115
230 VAC	G3491 0040 230

No code module required

Input/Output Specifications

Line interface	
Line impedance	600 Ohm
Transmit level	< -9 dBm
Receive	
Sensitivity	0 to -35 dBm
Transmission speed	300 Baud
Typical Response Time	
128 channels	< 2.0 Sec
8 channels	< 0.5 Sec
Output	1 NPN transistor
Function	Watchdog, operation as red LED
Output voltage	≤ 35 VDC
Output current	≤ 100 mA
Output Voltage drop	≤ 2 V
Off-state leakage current	≤ 100 µA
Short-circuit protection	None
Built-in protective diodes	None
Dielectric voltage	
Output - Dupline®	≥ 4 kVAC (rms)
Inductive loads	external noise suppression required
Settings	
Master/Slave:	Dip switch 1
Maintain	Dip switch 2

Supply Specifications

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

General Specifications

Power ON delay	< 1.5 Sec
Indication for	
Supply on	LED, green
Dupline® carrier	LED, yellow
Communication Fail or No carrier	LED, red
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	0° to + 50°C (-32° to +122°F)
Storage temperatur	-20° to + 85°C (-4° to +140°F)
Humidity (non Condensing)	20 to 80% RH
Mechanical resistance	
Stock	15 G (11 ms)
Vibration	2 G (6 to 55 Hz)
Dimensions	
Material (see Technical information)	H4-Housing
Weight	250 g
Approval	TRB 15
CE-marking	Yes

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Mode of Operation

The G 3491 0040 modems connect 2 Dupline® systems via owned or rented telephone cables.

Two private line modems can be used to establish long distance connections between two Dupline®-systems. A G 3491 0040 must be installed at each end of the line and connected to the owned or leased wire and to the local Dupline® network.
G 3491 0040 converts all Dupline® signals into standard FSK (frequency shift keying) tone signals. G 3491 0040 does not support Analink. These signals can be transmitted via the telephone companies' standard lines/amplifiers. In this way Dupline® signals can be exchanged over very long distances. In most countries the telephone companies require authorization prior to connection of the modem.

Each of the Dupline® installations to be connected must have a channel generator coded for the same number of channels. Even so, one of the two modems is to be set up for master operation and the other one for slave operation (Dip switch 1).

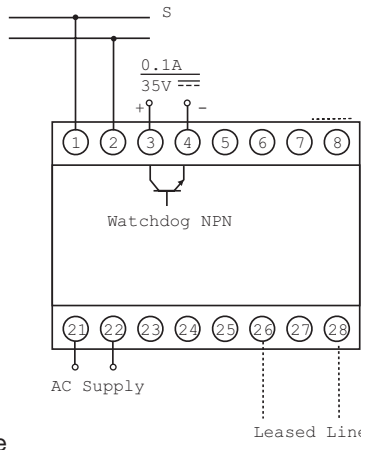
When two Dupline® systems are connected in this way, all channels react as if it were one Dupline® system. This means that activation of e.g. channel A1 in one system automatically causes channel A1 to be activated in the other system. The modem contains a watchdog output.

Any interruption of the Dupline® or private line leads to communication breakdown. As soon as the lines are reestablished, communication automatically starts again. The maintain input is used to define the behaviour of the modem in case of a communication breakdown. If maintain is selected (Dip-Switch 2) the data of the last valid transmission is kept and the channels of the local Dupline® are controlled accordingly. This condition remains until communication is reestablished. If the maintain input is not activated, all channels controlled from the counterpart system are reset in case of communication breakdown.
Only two modems (a master and a slave) can be connected to a telephone line. Several modems can, however, be connected to one Dupline® system.
Note: It is recommended to protect the modem by means of external transient protection circuitry.

G 3491 0040 also transmits analog values.
G 3491 0040 **cannot** communicate with FMX 1904.
G 3491 0040 does not support Analink.

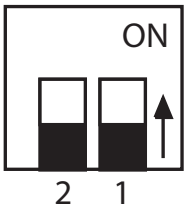
The G3491 0040 must be kept in pairs with equal revision numbers on both modules. The G3491 0041 is not backward compatible with other revision numbers. Revision number used today is rev. 3.

Wiring Diagram



S: signal wire

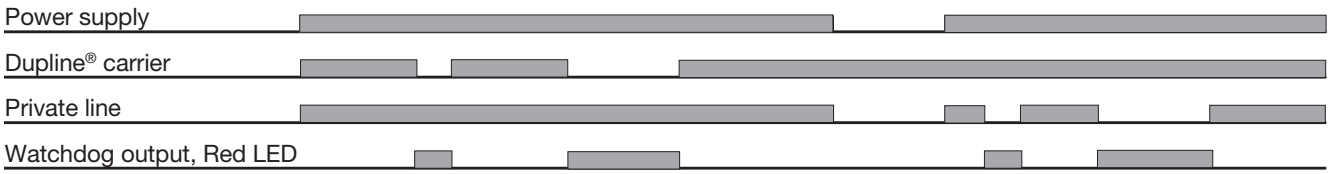
Dip-Switch Settings



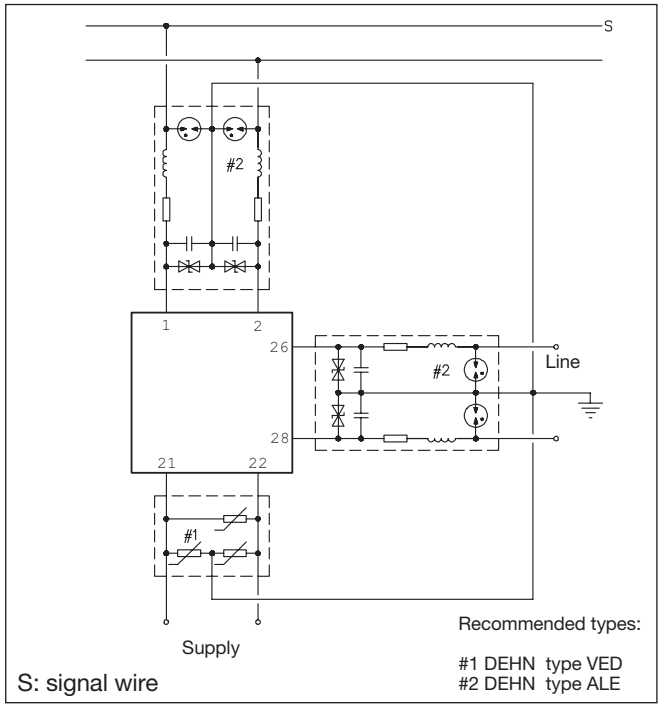
Attention Maintain holds last received data on the Dupline® channels, in case of communication failure.

Sw	Off	On
1	Master	Slave
2	Normal	Maintain

Operation Diagram



Recommended Transient Protection



Accessories

DIN-rail FMD 411

For further information refer to “Accessories”.

Dimensions (mm)

H4-housing