

Channel Generators

Types FPD 1901, D 3490 0000



FPD



D 3490

- Generates 8, 16, 32, 64 or 128 channels
- Number of sequences selectable
- Quartz-controlled oscillator
- Cable compensation
- Stop-function
- Plug-in type (FPD)
- DIN-rail mounting type (D3490) (EN 50022)
- LED-indication for supply
- LED-indication for supply and Dupline® carrier
- AC or DC power supply

Product Description

FPD 1901: standard channel generator for all Dupline® systems. Number of channels selectable by means of code module.
D 3490 0000: Standard channel generator for all Dupline®

systems, especially suitable for building installations. Isolation according to IEC 60664/60664 A reinforced. Increased Dupline® output power for connection of non-powered Dupline® transmitters.

Ordering Key

FPD 1901 024

Type: Dupline®
Channel generator
Supply

Type Selection

Supply	Ordering no. No. of channels selectable 1, 2 or 3 sequences	Ordering no. No of channels selectable 1, 2 or 3 sequences
24 VAC 120 VAC 220 VAC	FPD 1901 024 FPD 1901 120 FPD 1901 220	D 3490 0000 024 D 3490 0000 115 D 3490 0000 230
15 to 30 VDC	FPD 1901 824	D 3490 0000 824
Code modules: 1 sequence 2 sequences 3 sequences	FMK 8 to FMK 128 FMK 16-2 to 128-2 FMK 16-3 to 128-3	FMK 8 to FMK 128 FMK 16-2 to 128-2 FMK 16-3 to 128-3

Input/Output Specifications

	FPD 1901 ... (1, 2 or 3 sequences)	D 3490 0000 (1, 2 or 3 sequences)
Inputs		
Function	1 contact Stop	1 contact Stop
Open loop voltage	12 VDC	12 VDC
Short-circuit current	5 mA	1.25 mA
Operating time for signal "1"	≤ 1 s	≤ 1 s
Operating time for signal "0"	≤ 10 ms	≤ 10 ms
Contact resistance	≤ 100 W	≤ 100 W
Cable length	≤ 3m	≤ 3 m
Insulation voltage		
Input - Dupline®	None Dupline® carrier	None Dupline® carrier
Outputs		
Number of outputs	1	1
Output voltage	8.2 VDC	8.2 VDC
Current	≤ 40 mA	≤ 70 mA
Short-circuit protection	≤ 600 s	≤ 60 s

Input/Output Specifications (cont.)

	FPD 1901 ... (1, 2 or 3 sequences)	D 3490 0000 (1, 2 or 3 sequences)
Output (cont.)		
Output impedance	-	≤ 25 Ω
Sequence time	Time for 1 pulse train (± 1%):	Time for 1 pulse train (± 1%)
Code module FMK 8	15.63 ms *	15.63 ms *
Code module FMK 16	23.44 ms *	23.44 ms *
Code module FMK 32	39.06 ms *	39.06 ms *
Code module FMK 64	70.31 ms *	70.31 ms *
Code module FMK 128	132.80 ms *	132.80 ms *
Distance to transmitters	100% (refer to "Cable Selection")	100% (refer to "Cable Selection")

* When using 2 or 3 sequences, the sequence time will be 2 or 3 times higher.

Supply Specifications

Power supply AC types	Overvoltage cat. III (IEC 60664)
Rated operational voltage through pins A1 & A2	220 230 VAC +6%, -15% (IEC 60038)
	120 120 VAC ± 10% (IEC 60038)
	024 24 VAC ± 10%
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
Voltage interruption	≤ 40 ms
Rated operational power	Typ. 2.5 VA
Rated impulse withstand voltage	220 4 kV
	120 2.5 kV
	024 800 V
Dielectric voltage	
Supply - Dupline® FPD 1901	None
D 3490 0000	≥ 4 kVAC (rms)
Supply - Inputs FPD 1901	≥ 2 kVAC (rms)
D 3490 0000	≥ 4 kVAC (rms)
Power supply DC types	Overvoltage cat. III (IEC 600664)
Rated operational voltage through pins A1 & A2	824 15 to 30 VDC (ripple included)
Ripple	≤ 3 V
Reverse polarity protection	Yes
Current consumption	≤ 90 mA
Inrush current	≤ 1 A
Rated impulse withstand voltage	800 V
Dielectric voltage	
Supply - Dupline®	None
Supply - Input	≥ 200 VAC (rms)

General Specifications

Power ON delay	≤ 1 s
Indication for Supply ON	LED, green
Dupline® carrier*	LED, yellow
Environment	
Degree of protection	IP 20
Pollution degree	3 (IEC 60664)
Operating temperature	-20° to +50°C (-4° to +122°F)
Storage temperature	-50° to +85°C (-58° to +185°F)
Humidity (non-condensing)	20 to 80%
Mechanical resistance	
Shock	15 G (11 ms)
Vibration	2 G (6 to 55 Hz)
Dimensions	
Material (see "Technical Information")	D-housing, H4-housing
Weight	
FPD 1901	AC type 200 g
	DC type 125 g
D 3490 0000	250 g
Approvals	CSA, UL (only FPD 1901)
* Not applicable to FPD 1901	

Mode of Operation

The channel generators generate pulse trains and synchronize the transmission signals for an entire system of Dupline® modules. At the same time they supply non-powered Dupline® transmitters. If the stop-function is activated (pins 2 & 3 interconnected), the signal trans-

mission stops immediately, and 8 VDC is supplied to the two wires keeping all connected Dupline® modules ready for operation. When the stop-function is deactivated, a delay of approx. 2 s elapses before the signal transmission is resumed. The stop input must be acti-

vated whenever new Dupline® modules are to be connected to the system or whenever Dupline® modules need to be removed or replaced. The selection of 2 or 3 sequences means that 2 or 3 consecutive signals of a transmitter must show iden-

tical status until the channel generator changes the duty cycle for the respective channel. This change of duty cycle causes the receivers to change their status.

Mode of Operation (cont.)

Note:

- Do not use 2 or 3 sequences if analog modules or counters are connected to the system.
- Do not use 3 sequences if the modem interface D9091 ... is used in the system.
- The transmission distance of a Dupline® network is reduced by 33% when using 2 or 3 sequences, compared to the figures given under "Cable Selection".

In Dupline® systems with digital transmitters and receivers the use of 2 or 3 sequences is only recommended in cases of extremely long cabling in high noise level environment. Application of 2 or 3 sequences results in absolutely correct transmission but also in a slow reaction time for the system.

HF disturbance that is induced to the Dupline® may be suppressed by interconnec-

tion of pins 4 & 6 (FPD 1901) or terminals 4 & 1 (D 3490 0000). For inductive cables a separate capacitor of less than 1 µF may be mounted between pins 3 & 6 (FPD 1901) or terminals 1 & 2 (D 3490 0000). But in the majority of cases the cable appears to be capacitive requiring no additional capacitor.

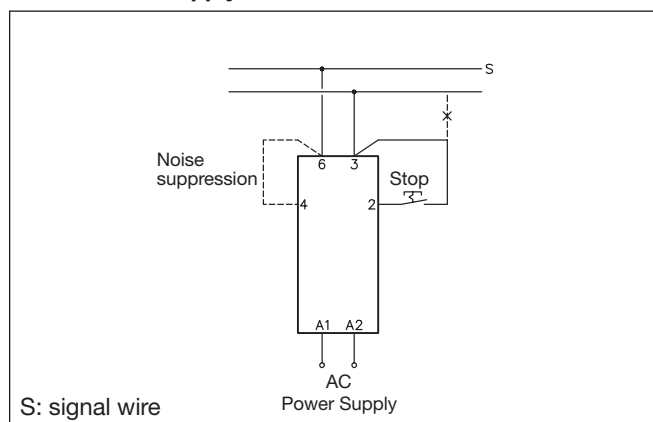
Note: It is highly recommended to place the channel generator in the middle of a Dupline® system.

Operation Diagram

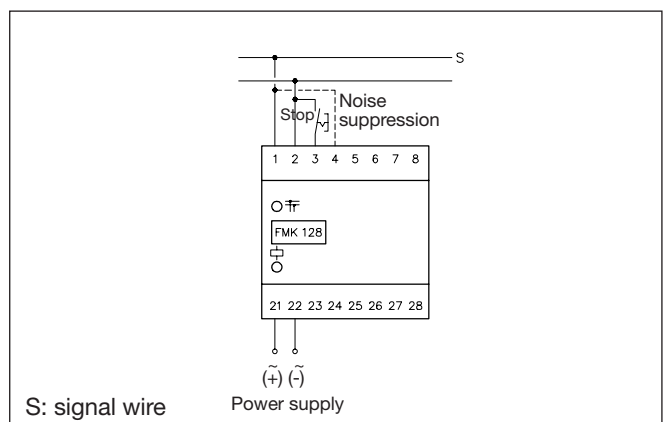


Wiring Diagrams

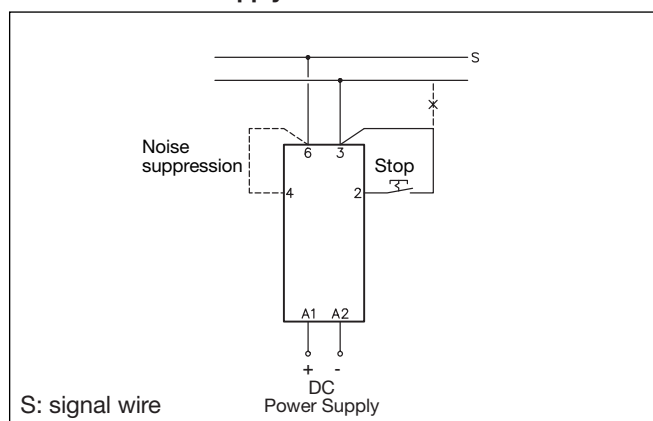
FPD 1901 AC supply



D 3490 0000



FPD 1901 824 DC supply



Accessories

- | | |
|----------------------|---------|
| Socket◇ | D 411 |
| Socket cover | BB 5 |
| Hold down spring◇ | HF |
| Front mounting bezel | FRS 2 |
| DIN-rail for D 411 | FMD 411 |

For further information refer to "Accessories".