



## FM221, FM222, FS221/N, FS222/N FASTBUS Modules

The FASTBUS modules FM221, FM222, FS221/N and FS222/N are designed to enable distribution of substations over long distances with a very low signal delay. The power supply integrated in the FASTBUS slave modules FS221/N and FS222/N can supply the I/O modules of a substation. The flexible connector concept allows easy connection via a patch cable or an industrial grade push-pull plug connection via an adapter.

- FASTBUS master modules with 1 or 2 FO interfaces
- FASTBUS slave modules with integrated power supply
- Up to 15 distributed substations
- Connection technology via robust Harting PushPull® connector or LC patch cable
- Distances to 2000 m via multimode cable
- Minimal signal delay
- ColdClimate models (❄)

Item	Item-No.
FM221	00016747-10
FM221 CC	00018091-10
FM222	00016747-00
FM222 CC	00018091-00
FS221/N	00016749-10
FS221/N CC	00018092-10
FS222/N	00016749-00
FS222/N CC	00018092-00

Screwable adapter <sup>1)</sup> for using PushPull® connector:

Item	Item-No.
Adapter <sup>1)</sup>	00016682-00

1) This adapter is needed for PushPull® connector. With screwed adapter no LC patch cord should be plugged, as this covers the LC-release lever and thus can not be removed.

Fx220 Series		
FASTBUS interface		
Line length	2000 m between the stations, Total length max: 2300 m	
Transmission medium	Multimode fiber (50/125 µm and 62.5/125 µm) max. 2000 m FOC connector type LC FOC guide wavelength 1310 nm	
Number of stations	Max. 16 (max. 10 per line)	
Link budget	> 8 dB (3 dB Reserve)	
Diagnostic possibilities		
Fiber optic cable – received light output	HW: three-color status LED SW: 0 – 100 %	
Integrated power supply		
Input voltage	24 VDC (18 to 34 V)	
Nominal power (output)	18.25 W	
Output current at +5 V	3000 mA <sup>1)</sup>	
Output current at +15 V	250 mA <sup>1)</sup>	
Output current at -15 V	200 mA <sup>1)</sup>	
Approvals / Certificates		
General	CE, cULus, CCC	
Marine	DNV GL, LR, ABS, BV	
Ambient conditions	Standard	ColdClimate ❄
Operating temperature	-30 to +60 °C	-30 to +60 °C
Rel. humidity operation	5 to 95 % without condensation	5 to 95 % with condensation
Storage temperature	-40 to +85 °C	-40 to +85 °C
Rel. humidity storage	5 to 95 % with condensation	5 to 95 % with condensation
Pollution degree	2 (without condensation; according to IEC 60664-1)	2 (according to IEC 60664-1)

1) Total power must not exceed the specified nominal power (output).

Order Codes		
Item	Item No.	Description
FM221	00016747-10	FASTBUS master module with 1 FO-port; 50/62.5µm multi mode fiber; up to 2000m; LC connector
FM221 CC	00018091-10	Like FM221; ColdClimate (❄)
FM222	00016747-00	FASTBUS master with 2 FO-ports; 50/62.5µm multi mode fiber; up to 2000m; LC connector
FM222 CC	00018091-00	Like FM222; ColdClimate (❄)
FS221/N	00016749-10	FASTBUS slave 1 FO-port; 50/62.5µm multi mode fiber; up to 2000m; LC connector; integrated power supply 18.25W
FS221/N CC	00018092-10	Like FS221/N; ColdClimate (❄)
FS222/N	00016749-00	FASTBUS slave 2 FO-ports; 50/62.5µm multi mode fiber; up to 2000m; LC connector; integrated power supply 18.25W
FS222/N CC	00018092-00	Like FS222/N; ColdClimate (❄)
Accessories		
KZ 51/03 B	00012052-00	Terminal 03-pins grid 5,08; cage clamp terminal with labeling strip
PushPull®-Adapter	00016682-00	Adapter for Harting PushPull LC Connector

Accessories <sup>1)</sup>			
Item	Order Codes	Manufacturer	Description
LC connector	SXLC-DK0-56-0010	LEONI	LC connector duplex uniboot multimode type2 for multimode fibers with 125 µm outer diameter (Minibreak-out-cable)
Harting connectors	09 57 402 0500 020	HARTING	HARTING PushPull LC duplex plastic Multi Mode SFP (Breakout-cable)
Harting connectors	09 57 409 0500 020	HARTING	HARTING PushPull LC duplex metal Multi Mode SFP (Breakout-cable)

1) Information without guarantee, order directly from the manufacturer

Cable Recommendations <sup>1)</sup>					
Item	Order Codes	Manufacturer	Length	[m]	Description
LC patch cable	JUDNAAUXXc77AO0	LEONI AG	c = 0005	0.5	I-V(ZN)Y 2G50/125 TB900L 2.8 patched Cable: 84950785G222 Side A: LC Side B: LC  Operating and storage temperature -40 to +70 °C
			c = 001	1	
			c = 003	3	
			c = 005	5	
			c = 010	10	
			c = 030	30	

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