



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 ¹⁾ for using PushPull® connector:

| Item | Item-No. |
|-----------------------|-------------|
| Adapter ¹⁾ | 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 ¹⁾ | |
| Output current at +15 V | 250 mA ¹⁾ | |
| Output current at -15 V | 200 mA ¹⁾ | |
| 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 ¹⁾ | | | |
|---------------------------|--------------------|--------------|---|
| 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 ¹⁾ | | | | | |
|-------------------------------------|-----------------|--------------|----------|-----|---|
| 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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