



## FM211, FM212, FS211/N, FS212/N FASTBUS Modules

The FASTBUS modules, FM211, FM212, FS211/N, and FS212/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, FS211/N and FS212/N can supply the I/O modules of a substation.

- FASTBUS master modules with 1 or 2 FO interfaces
- FASTBUS slave modules with 1 or 2 FO interfaces
- FASTBUS slave modules with integrated power supply
- Up to 15 distributed substations
- Distances between 2 stations up to:
  - 40 m for POF cables
  - 150 m for HCS cables
  - 180 m for special HCS cables
- Status display (RUN/ERR) and display for fiber type
- Minimal signal delay

Item	Item-No.
FM211	00017821-00
FM212	00017822-00
FS211/N	00017823-00
FS212/N	00017824-00

<b>Fx210 Series</b>	
<b>FASTBUS interface</b>	
Line length	40 / 150 / 180 m between the stations, Total length max: 1000 m
Transmission medium	Plastic Optical Fiber (POF) max. 40 m (POF sometimes also referred to as PMMA) Hard Cladded Silica (HCS) max. 150 m (HCS sometimes also referred to as Plastic Silica Fiber (PCF)) Special HCS cable 180 m
Number of stations	Max. 16
<b>Integrated power supply</b>	
Input voltage	24 VDC (18 to 34 V)
Current consumption	Max. 1.2 A at 24 V
Nominal power (Output)	17 W
Output current at +5 V	2800 mA <sup>1)</sup>
Output current at +15 V	250 mA <sup>1)</sup>
Output current at -15 V	200 mA <sup>1)</sup>
Galvanic isolation from the system	500 V
Reverse polarity protection	Yes
<b>Approvals / Certificates</b>	
General	CE, cULus, CCC
Marine	DNV GL, LR, ABS, BV, NK, KR, RINA
<b>Ambient conditions</b>	
Operating temperature	0 to +60 °C
Rel. humidity operation	5 to 95 % without condensation
Storage temperature	-40 to +85 °C
Rel. humidity storage	5 to 95 % without condensation
Pollution degree	2 (without condensation; according to IEC 60664-1)

<sup>1)</sup> From KR120.000: Total power must not exceed the specified nominal power (output).

Order Codes		
Item	Item No.	Description
FM211	00017821-00	FASTBUS master module with 1 FO interface; HCS/PCF 150 m or POF 40 m
FM212	00017822-00	FASTBUS master module with 2 FO interfaces; HCS/PCF 150 m or POF 40 m
FS211 / N	00017823-00	FASTBUS slave module with 1 FO interface; HCS/PCF 150 m or POF 40 m; integrated power supply 17 W
FS212 / N	00017824-00	FASTBUS slave module with 2 FO interfaces; HCS/PCF 150 m or POF 40 m; integrated power supply 17 W
Accessories		
LWLP1 connector	00009502-00	Connector for plastic fiber optic cable. 2-line
LWLP1 bush	00009514-00	Bush LWL Plastic per piece
LWLP polishing set	00009696-00	Polishing set for LWL Plastic (HFBR-4593/Hewlett Packard)
LWLP-WKZ1	00010126-00	Skimming tool for LWL Plastic Type RS
LWLP gripper	00009695-00	BNC-Crimpgripper (Pressmaster DCC 1113)
K-LWLP1 0.5m	00009624-02	POF Cable 0.5m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 1.0m	00009624-00	POF Cable 1.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 2.0m	00009624-01	POF Cable 2.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 3.0m	00009624-06	POF Cable 3.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 5.0m	00009624-04	POF Cable 5.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 7.0m	00009624-11	POF Cable 7.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 10.0m	00009624-03	POF Cable 10.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 15.0m	00009624-07	POF Cable 15.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 20.0m	00009624-05	POF Cable 20.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 30.0m	00009624-12	POF Cable 30.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLP1 40.0m	00009624-15	POF Cable 40.0m duplex Plastic Optical Fiber; Fx21x Fastbus
K-LWLH1 2.0m	00010762-07	HCS Cable 2.0m duplex 200µm HCS Fiber; Fx21x Fastbus
K-LWLH1 10.0m	00010762-04	HCS Cable 10.0m duplex 200µm HCS Fiber; Fx21x Fastbus
K-LWLH1 15.0m	00010762-06	HCS Cable 15.0m duplex 200µm HCS Fiber; Fx21x Fastbus
K-LWLH1 90.0m	00010762-01	HCS Cable 90.0m duplex 200µm HCS Fiber; Fx21x Fastbus
K-LWLH1 100.0m	00010762-03	HCS Cable 100.0m duplex 200µm HCS Fiber; Fx21x Fastbus
K-LWLH1 120.0m	00010762-02	HCS Cable 120.0m duplex 200µm HCS Fiber; Fx21x Fastbus
LWLH connector	00010949-00	Connector for LWLH (plug plus crimping sleeve, 4 per cable)
Fiber optic cable housing ZA	00011105-00	housing for 2 LWLH connectors with lock, for the A channel of a Fx21x
Fiber optic cable housing ZB	00011622-00	housing for 2 LWLH connectors with lock, for the B channel of a Fx21x
LWLH-WKZ-SET	00010952-00	tool set for LWLH with cutter, Skimming tool, Crimpgripper, Diamond cutter
LWLH/-Cap	00011188-00	Cap for transport protection of fiber connector housing
KZ 51/03 B	00012052-00	Terminal 03-pins grid 5,08; cage clamp terminal with labeling strip