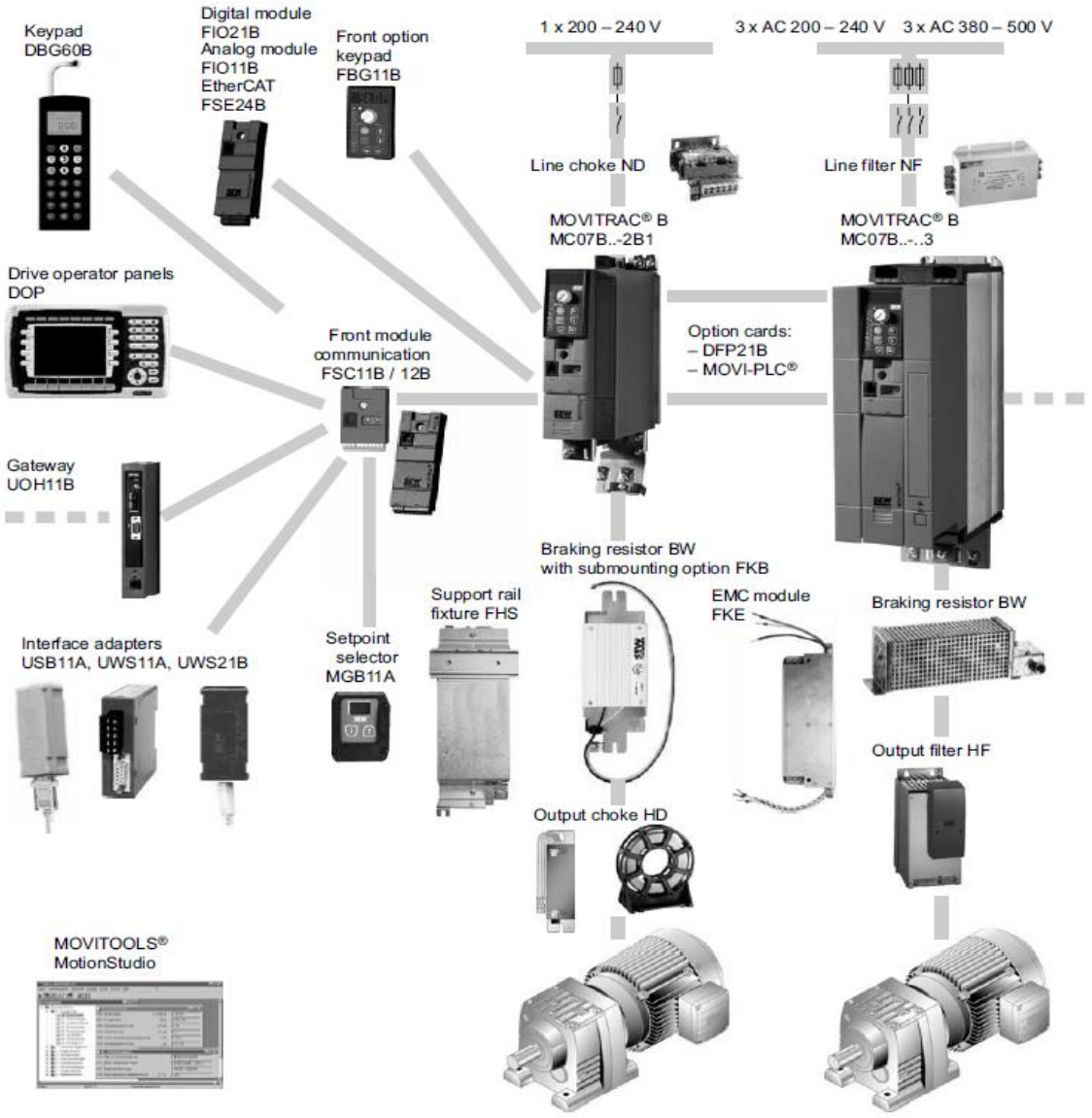
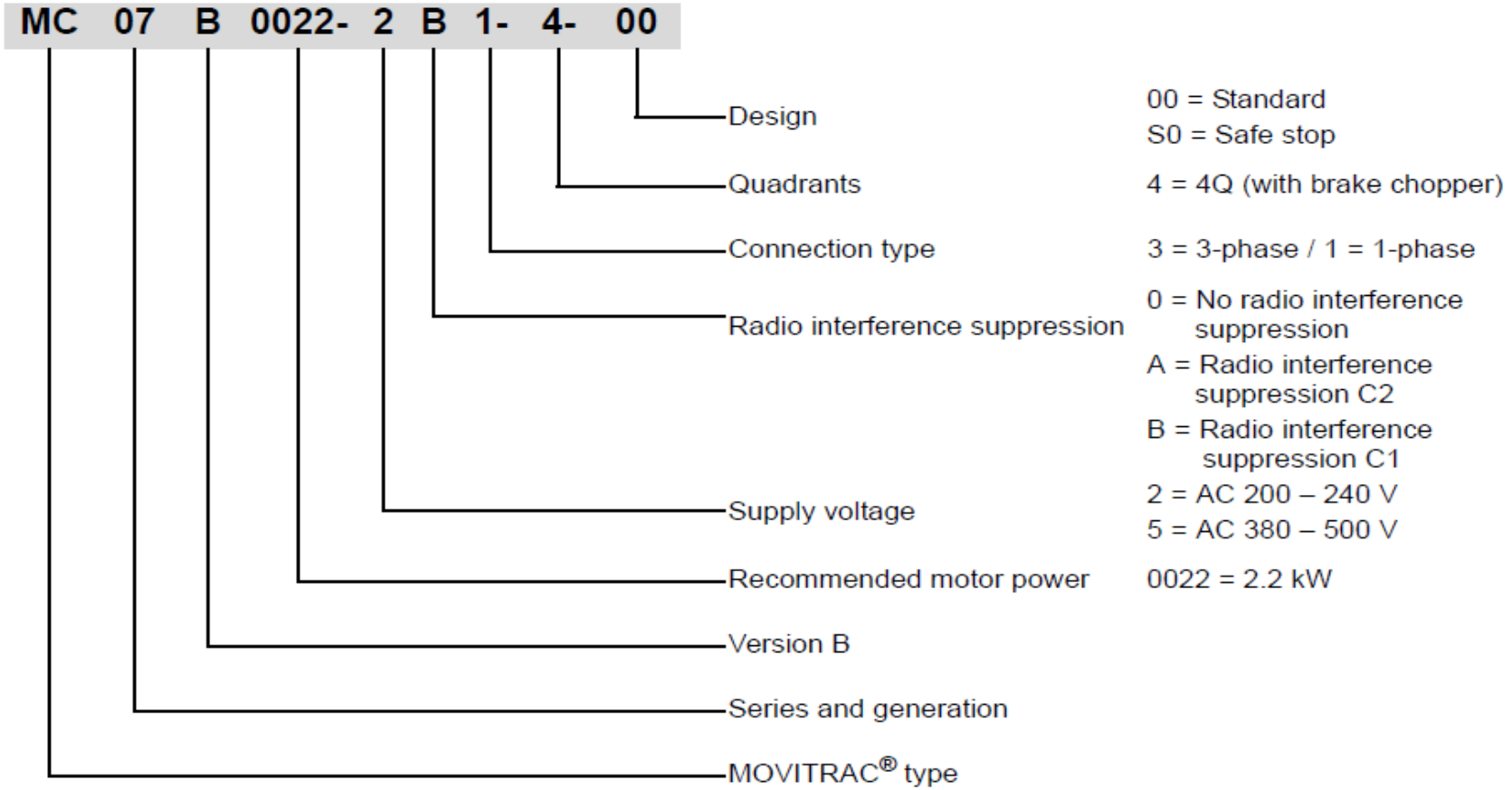
Movitrac® 07B Presentation

System overview



Type designation



The units at a glance

- 1x230V 0,25-2,2kW
- 3x230V 0,25-30kW
- 3x400V 0,25-75kW

Europe

USA

Russia
GOST-R

Australia
C-Tick

The units at a glance

	Size	1x230V		3x230V		3x400V	
Integrated netfilter	0XS	0,25 kW 0,37 kW	1,7 A 2,5 A	0,25 kW 0,37 kW	1,7 A 2,5 A	0,25 kW 0,37 kW	1,0 A 1,6 A
	0S	0,55 kW 0,75 kW	3,3 A 4,2 A	0,55 kW 0,75 kW	3,3 A 4,2 A	0,55 kW 0,75 kW 1,1 kW 1,5 kW	2,0 A 2,4 A 3,1 A 4,0 A
	0L	1,1 kW 1,5 kW 2,2 kW	5,7 A 7,3 A 8,6 A	1,1 kW 1,5 kW 2,2 kW	5,7 A 7,3 A 8,6 A	2,2 kW 3,0 kW 4,0 kW	5,5 A 7,0 A 9,5 A
	1			3,7 kW	14,5 A		
	2S					5,5 kW 7,5 kW	12,5 A 16,0 A
	2			5,5 kW 7,5 kW	22 A 29 A	11 kW	24 A
Without netfilter	3			11 kW 15 kW	42 A 54 A	15 kW 22 kW 30 kW	32 A 46 A 80 A
	4			22 kW 30 kW	80 A 95 A	37 kW 45 kW	73 A 89 A
	5					55 kW 75 kW	105 A 130 A

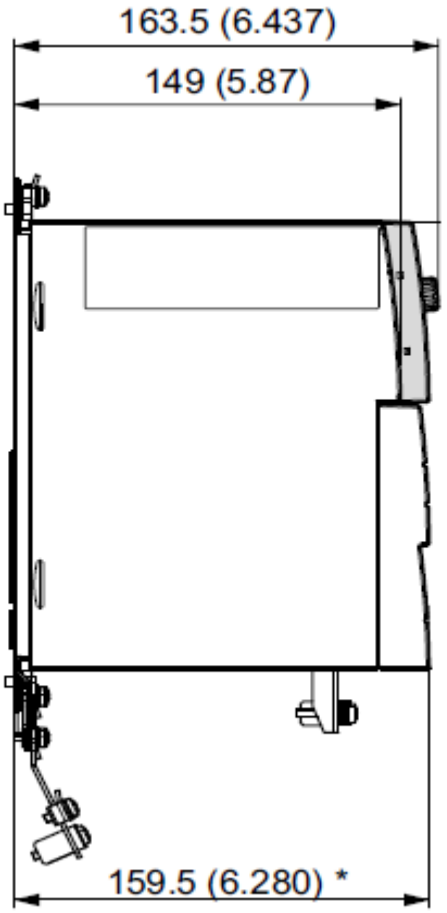
Size 0

Size 0XS

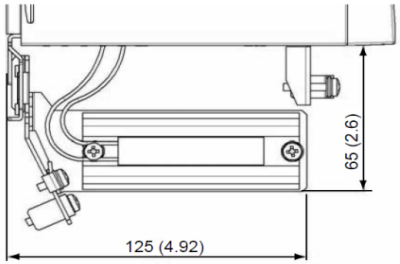
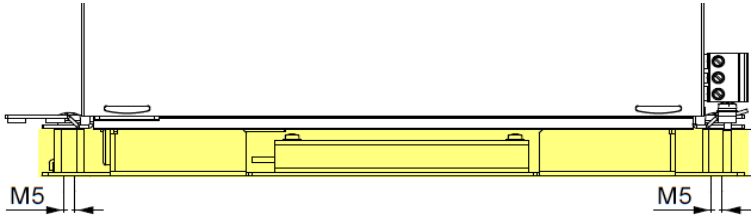
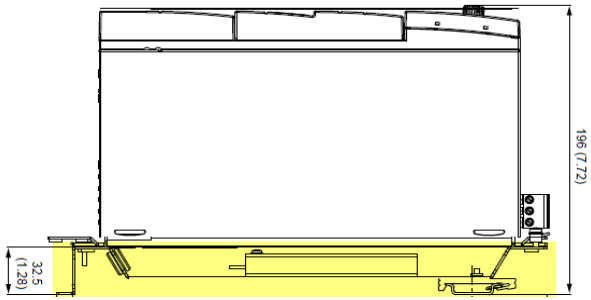
Size 0S

Size 0L

ATTENTION
Safe stop optional
-S0



Size 0: mounting options

Type	Size 0XS	Size 0S	Size 0L
Mounting braking resistor 		FKB10 for BW1(400V) or BW3(230V)	
Sub mounting braking resistor 	FKB11 for BW2(400V) BW4(230V)	FKB12 for BW072-003 (400V) BW027-003 (230V)	FKB13
Rail mounting 	FHS11 for BW2(400V) BW4(230V)	FHS12 for BW072-003 (400V) BW027-003 (230V)	FHS13

Size 1

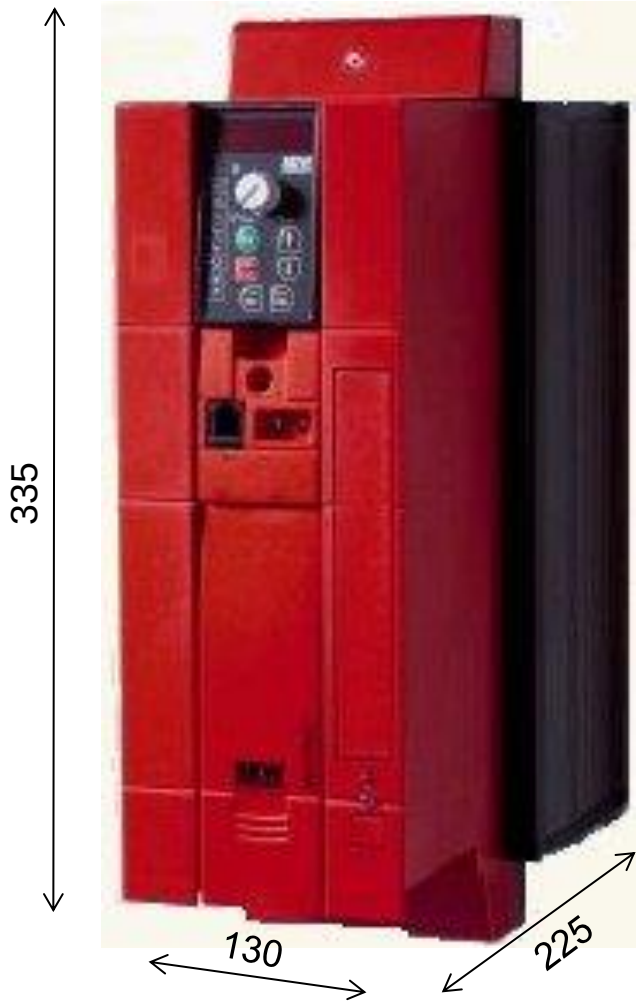
3x230V	3,7kW
3x400V	--

Size 2S

3x230V	--
3x400V	5,5-7,5kW

Size 2

3x230V	5,5-7,5kW
3x400V	11kW

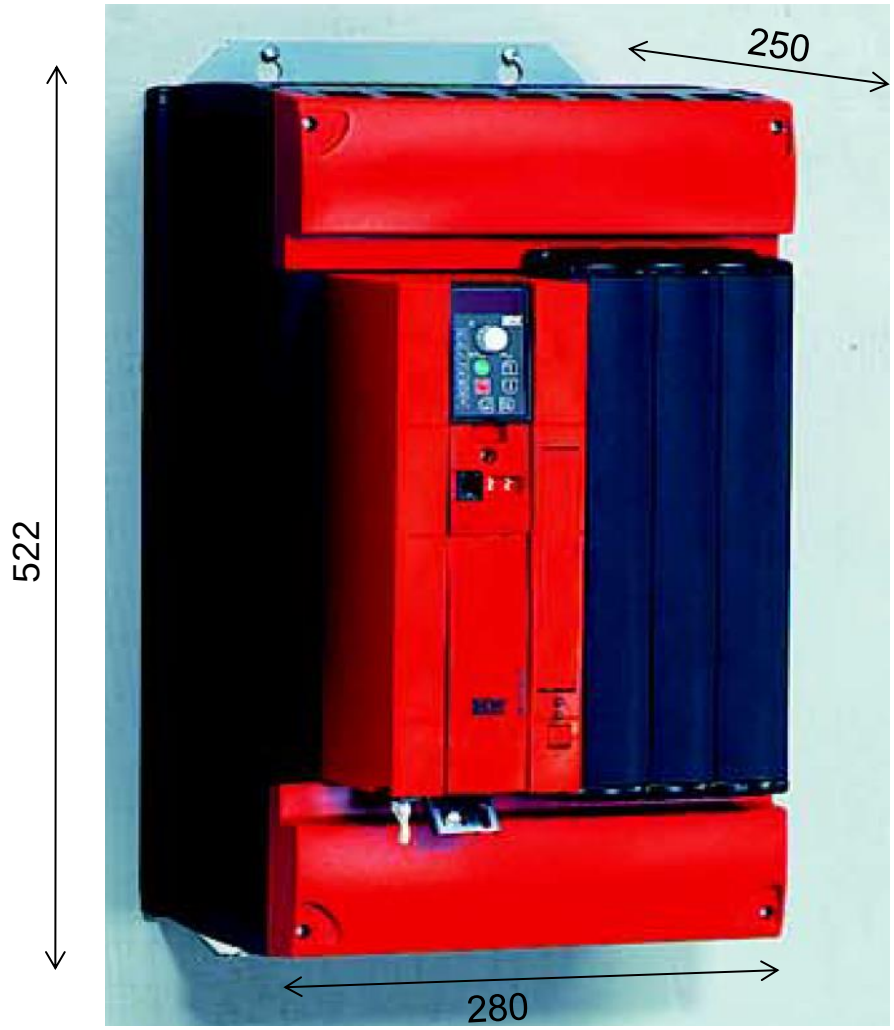


Size 3

3x230V	11-15kW
3x400V	15-30kW

Size 4

3x230V	22-30kW
3x400V	37-45kW



Unit variants

- **Standard**
  - IPOS$^{plus®}$ integrated for positioning and sequence control
  - Expandable with available options
  - Inidcated with "00"
- **Technology**
  - Extra application modules can be used
  - Indicated with "0T"
- **Coated printed circuit board**
  - Designed for use in harsh environment
  - Indicated with "00/L"

Unit functions & features

- **Wide voltage range**
  - 230V units = 200 – 240V, 50/60Hz
  - 400/500V units = 380 – 500V, 50/60Hz
- **Overload capacity**
  - 125 % I_N continous duty
  - 150 % I_N for at least 60s
- **Rated operation up to ambient temperature ϑ=50° C**
- **Output frequency**
  - VFC: 0-150Hz
  - V/f: 0-600Hz
- **Integrated brake chopper**
- **"STO"-function**
  - Standard as of Size 1
  - Size 0 only for –S0 units

Unit functions & features

- **Size 0 to 2 with integrated EMC line filter class C2**
- **Size 0 to 5 optional EMC line filters class C1**
- **Configurable in- & outputs**
  - ✓ 1 analog input
  - ✓ 6 binary inputs
  - ✓ 3 binary outputs (1 relay)
- **Integrated PTC motor temperature evaluation**
- **Seperable signal terminals**
- **Size 0**
  - ✓ Seperable power terminals
  - ✓ EMC-capacitor can be insulated for reduced earth-leakage current and operation on IT-system
  - ✓ "Cold plate" installation possible
  - ✓ Braking resistor can be submounted

Control functions & features

- **V/f or VFC control mode**
  - ✓ V/f: Simple and fast - Control range >1:6 (ref 50Hz)
  - ✓ VFC: High torque at low speed - Ctrl range >1:100 (ref 50Hz)
- **Control of the motor brake rectifier**
- **Standstill current function**
  - ✓ Rapid start
  - ✓ Heating current
- **Flying start function**
- **Hoist capabilty**
- **DC braking**
- **Motor stall protection** (also in filed weakening)
- **2 complete parametersets**
- **Parameter lock protection**

Control functions & features

- **Protective functions**
  - ✓ Overcurrent
  - ✓ Ground fault
  - ✓ Overload
  - ✓ Overtemperature of the inverter
  - ✓ Overtemperature of the motor (TF/TH)
- **Speed monitoring**
- **5 Error memories**
- **Energy-saving function**
- **Setpoint technology**
  - ✓ External setpoints: 0-10V (uni- and bidirectional) / 0-20mA / 4-20mA / -10+10V (bidirectional)
  - ✓ Motor potentiometer
  - ✓ 6 fixed setpoints
  - ✓ Frequency input

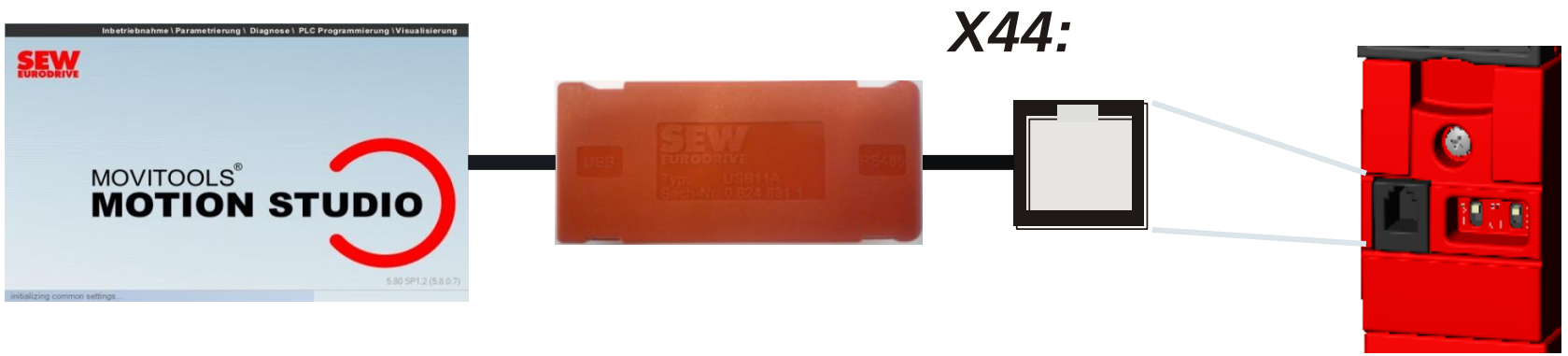
Optional communication operation

- **CAN based system bus for networking max 64 inverters**
- **CANopen protocol DS301 V4**
- **RS485 interface**
- **Fieldbus interface**
  - Profibus
  - Devicenet
  - Interbus
  - CANopen
- **Industrial Ethernet**
  - EtherCAT
  - Profinet
  - Ethernet/IP
  - Modus/TCP

FBG11: Keypad

- **Intuitive operation**
- **Functionalities**
  - ✓ Motor startup
  - ✓ Parametrising
  - ✓ Manual operation
  - ✓ Error reading / Reset
  - ✓ Data backup

FSC11B: communication module

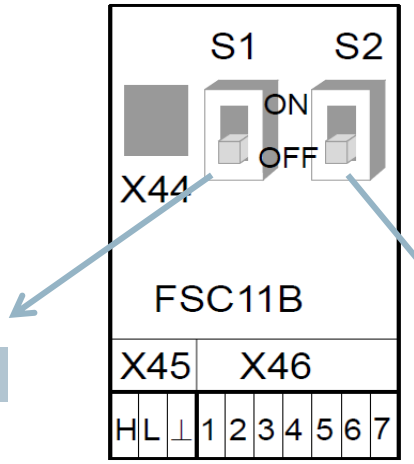


- X44: RS-485 connector RJ10
  To communicate with PC
- X45: RS-485, up to 32 participants
- X46: Sbus (CAN) and 24V I/O

X45			X46						
H	L	⊥	1	2	3	4	5	6	7
RS485			In High	In Low	GND	Out High	Out Low	GND	24VIO

FSC11B: communication module

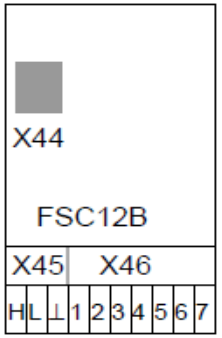
- X44: RS-485 engineering port
- X45: RS-485 network connection
- X46: Sbus network connection

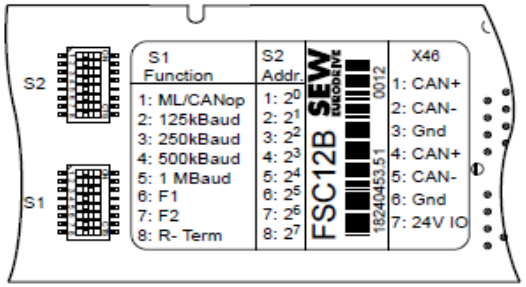


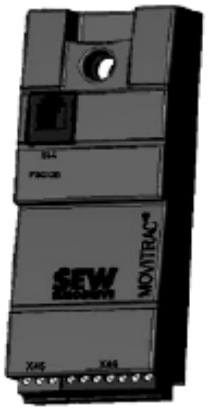
Function	Terminal	Designation	Data
System bus (SBus)	X46:1 X46:2 X46:3 X46:4 X46:5 X46:6 X46:7	SC11: SBus high SC12: SBus low GND: Reference potential SC21: SBus high SC22: SBus low GND: Reference potential 24VIO: Auxiliary voltage / External voltage supply	CAN bus according to CAN specification 2.0, parts A and B, transmission technology according to ISO 11898, max. 64 stations, terminating resistor (120 Ω) can be activated using DIP switch **S1**.
RS485 interface	X45:H X45:L X45:⊥ X44 RJ10	ST11: RS485+ ST12: RS485– GND: Reference potential Service interface	EIA standard, 9.6 kBaud, max. 32 stations Maximum cable length 200 m (656 ft) Dynamic terminating resistor with fixed installation Connection: Only for service purposes, solely for point-to-point connection, maximum cable length 3 m (10 ft) X44 and X45 are connected in parallel in the FSC.

FSC12B: CAN communication module

- X44: RS-485 engineering port
- X45: RS-485 network connection
- X46: CAN network connection
  (MOVILINK®/CANopen)

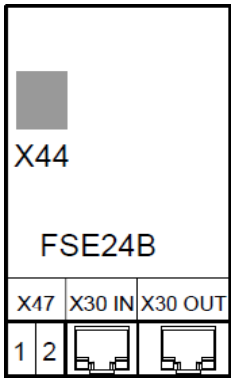




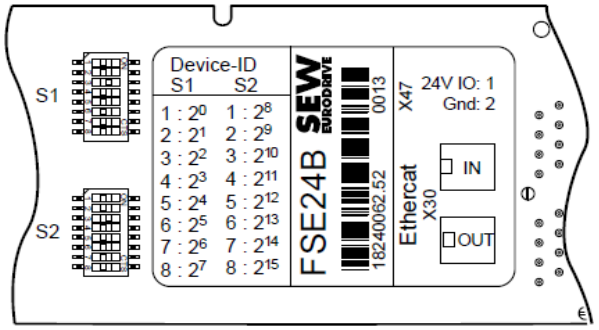


Function	Terminal/ switch	Designation	Data
System bus (SBus)	X46:1 X46:2 X46:3 X46:4 X46:5 X46:6 X46:7	SC11: SBus high SC12: SBus low GND: Reference potential SC11: SBus high SC12: SBus low GND: Reference potential 24VIO: Auxiliary voltage / External voltage supply	CAN bus according to CAN specification 2.0, parts A and B, transmission technology according to ISO 11898, max. 64 stations, terminating resistor (120 Ω) can be activated using DIP switch **S1:8** (back).
RS485 interface	X45:H X45:L X45:⊥ X44 RJ10	ST11: RS485+ ST12: RS485– GND: Reference potential Service interface	EIA standard, 9.6 kBaud, max. 32 stations Maximum cable length 200 m (656 ft) Dynamic terminating resistor with fixed installation Connection: Only for service purposes, solely for point-to-point connection, maximum cable length 3 m (10 ft) X44 and X45 are connected in parallel in the FSC.

FSE24B: EtherCAT module



- X44: RS-485 engineering port
- X47: 24V-supply
- X30: EtherCAT in/out

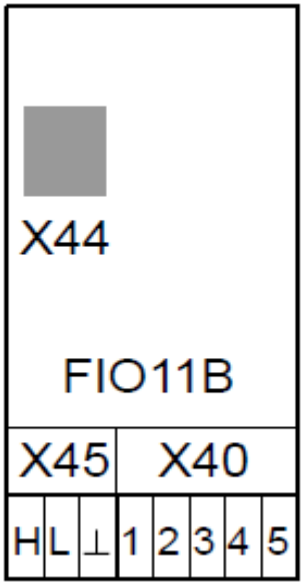


Function	Terminal	Designation	Data
EtherCAT	X30 IN X30 OUT (2 × RJ45)	Incoming and outgoing EtherCAT connection	• Fast Ethernet (100 MBaud, full duplex) • Auto-crossing • IEC 61158, IEC 61784-2
External voltage supply	X47:1 X47:2	24 V IO GND	• V = DC 24 V (–15 %, +20 %) • The FSE24B and MOVITRAC® B are supplied with 24 V via X47 • Alternatively, the FSE24B can supplied via the MOVITRAC® B only

FIO11B: Analog module

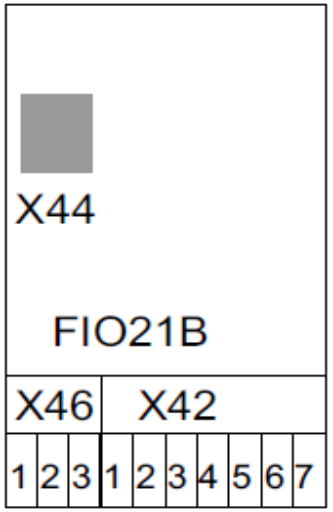
- X44: RS-485 engineering port
- X45: RS485 network connection
- X40: Analog Input/Output

Function	Terminal	Designation	Data
Setpoint input[1)]	X40:1 X40:2	AI2: Voltage input GND: Reference potential	–10 to +10 V R_i > 40 kΩ Resolution 10 bit Sampling time 5 ms Accuracy ±100 mV, 200 µA
Analog output / alternative as current output or voltage output	X40:3 X40:4 X40:5	GND: Reference potential AOV1: Voltage output AOC1: Current output	 0 – 10 V / I_{max} = 2 mA 0 (4) – 20 mA Resolution 10 bit Sampling time 5 ms Short-circuit proof, protected against external voltage up to 30 V Load impedance R_L ≤ 750 Ω Accuracy ±100 mV, 200 µA
RS485 interface	X45:H X45:L X45:⊥ X44 RJ10	ST11: RS485+ ST12: RS485– GND: Reference potential Service interface	EIA standard, 9.6 kBaud, max. 32 stations Maximum cable length 200 m (656 ft) Dynamic terminating resistor with fixed installation Connection: Only for service purposes, solely for point-to-point connection Maximum cable length 3 m (10 ft) X44 and X45 are connected in parallel in the FIO11B.



FIO21B: Digital input module

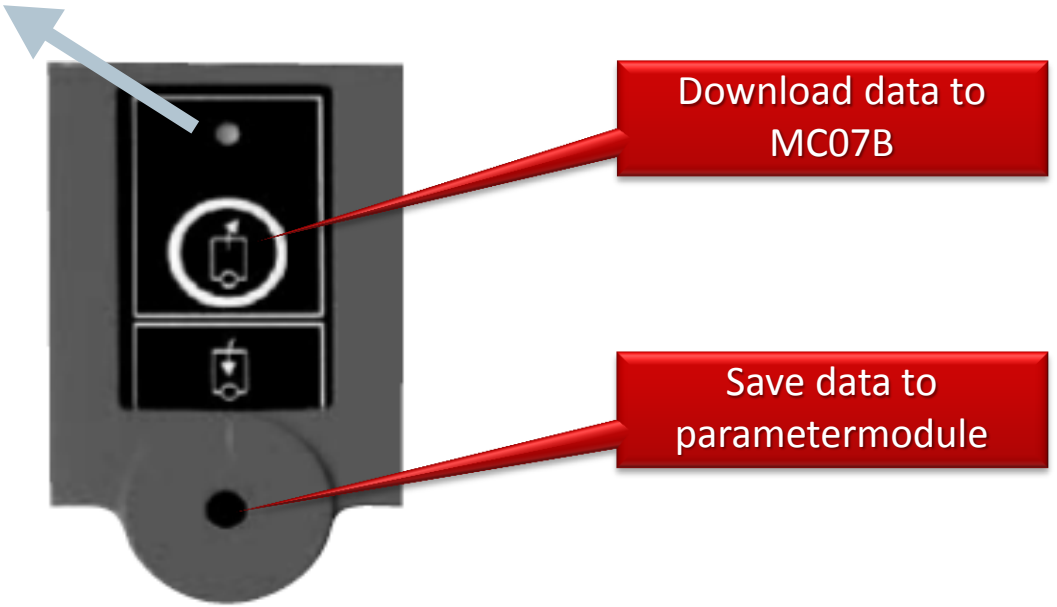
- X44: RS-485 engineering port
- X46: Sbus network connection
- X42: 7 supplementary binary inputs



Function	Terminal	Designation	Data
Binary inputs	X42:1 X42:2 X42:3 X42:4 X42:5 X42:6 X42:7	DI10 DI11 DI12 DI13 DI14 DI15 DI16	R_i = 3 kΩ, IE = 10 mA, sampling interval 5 ms, PLC compatible Signal level according to EN 61131-2 type 1 or 3: • 11 to 30 V: Contact closed • –3 to +5 V: Contact open Factory set to "no function"
Service interface	X44 RJ10	Service interface	EIA standard, 9.6 kBaud Connection: Only for service purposes, solely for point-to-point connection Maximum cable length 3 m (10 ft)
System bus SBus	X46:1 X46:2 X46:3	SC11: CAN High SC12: CAN Low GND: Reference potential	CAN bus to CAN specification 2.0, parts A and B Transmission technology according to ISO 11898, max. 64 stations Bus termination possible with enclosed 120 Ω resistor between SC11 and SC12.

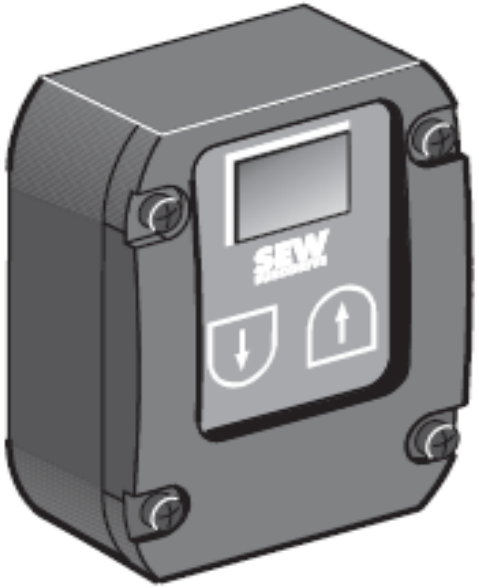
UBP11A: parameter module

- To save/restore data of the inverter
- Indication LED of the operating state
  - ✓ Green = data available
  - ✓ Green flashing = data transmission in progress
  - ✓ Yellow = no data available
  - ✓ Red = copy error



MBG11A: Speed control module

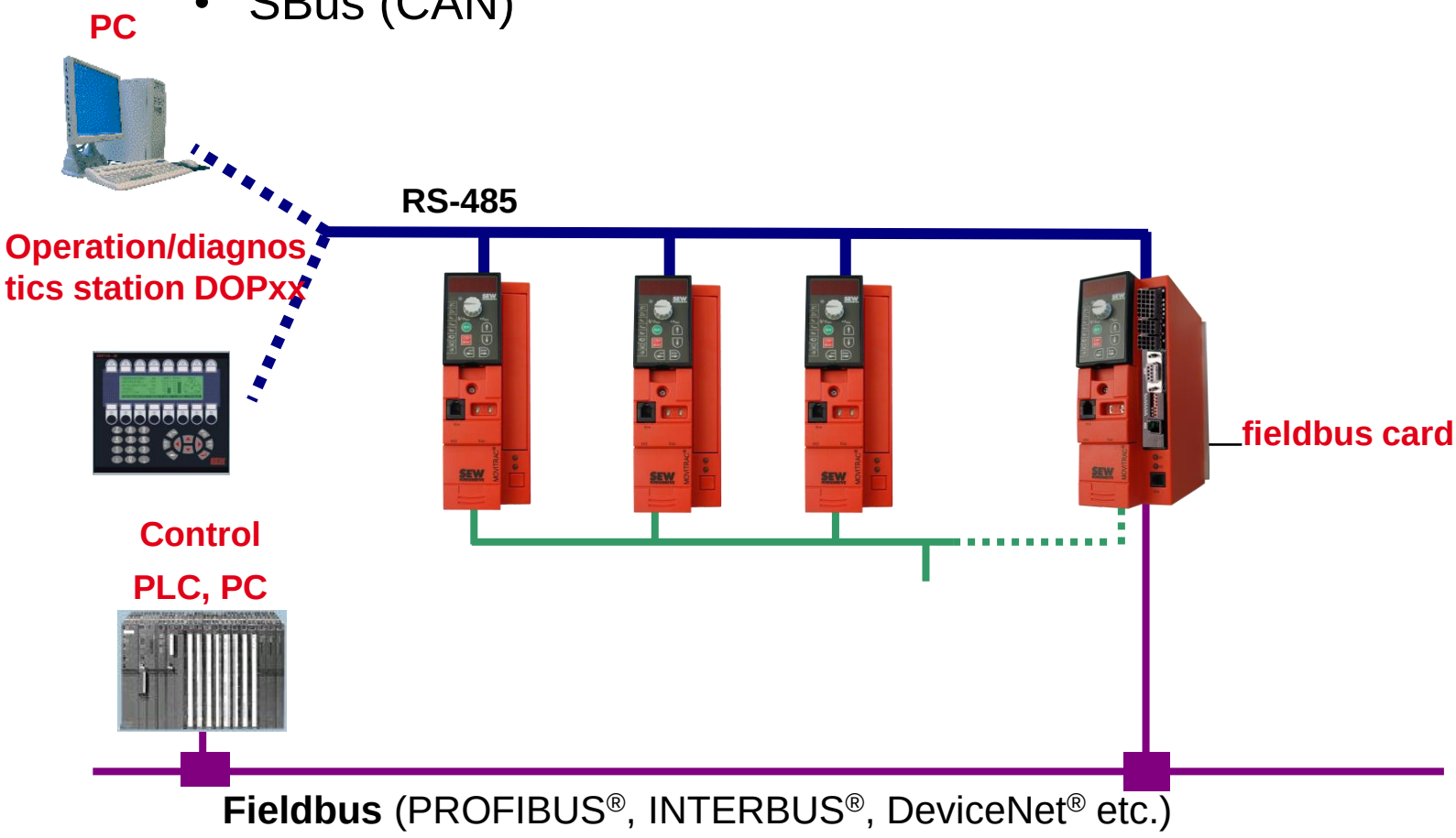
- Allows the remote speed control in the range of -100% to 100% of n_{max}
- Works over the RS485 network
- Up to 31 MC07B can be connected



Fieldbus communication

- RS 485
- SBus (CAN)

⟹ Multipoint bus capable



Fieldbus cards

DFC 11B = CAN / CANopen

DFD 11B = DeviceNet

DFI 11B = Interbus

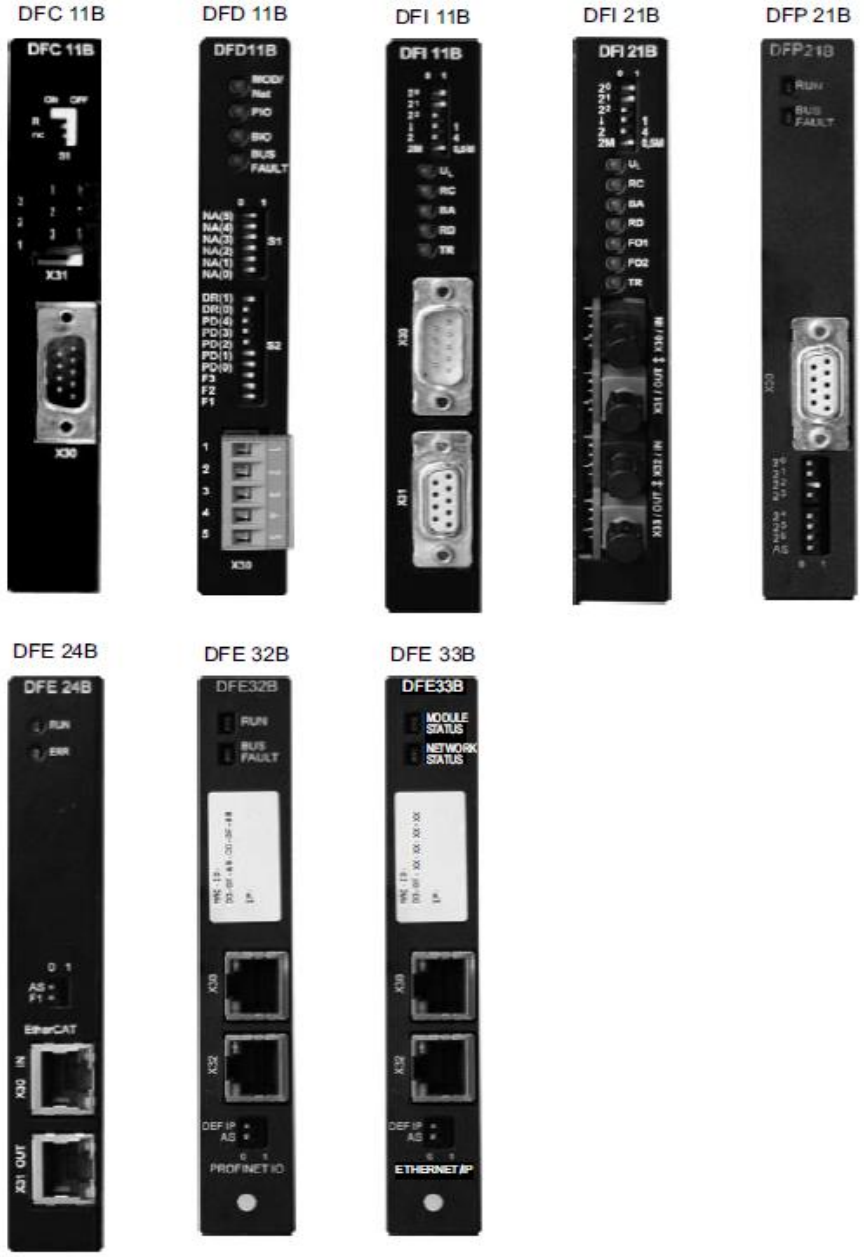
DFI 21B = Optical fiber Interbus

DFP 21B = Profibus

DFE 24B = Ethercat®

DFE 32B = Profinet/IO

DFE 33B = Ethernet/IP and Modbus/TCP



Thank you very much for your time.

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