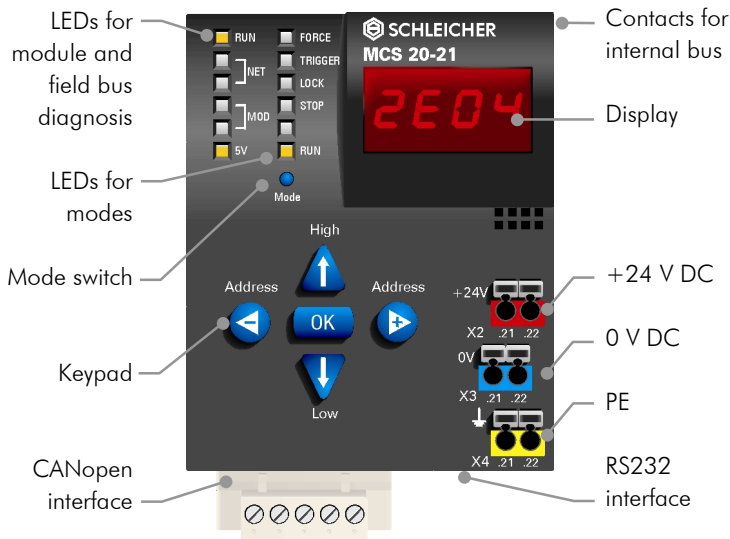
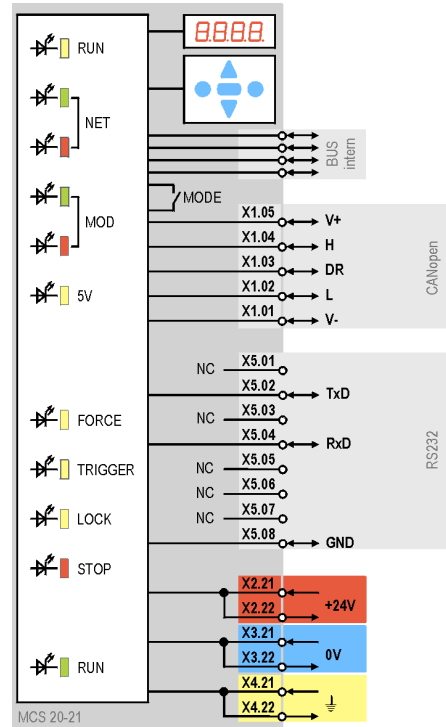


microLine PLC CANopen IEC 61131-3	MCS 20-21
microLine PLC IEC 61131-3	MCS 20-20

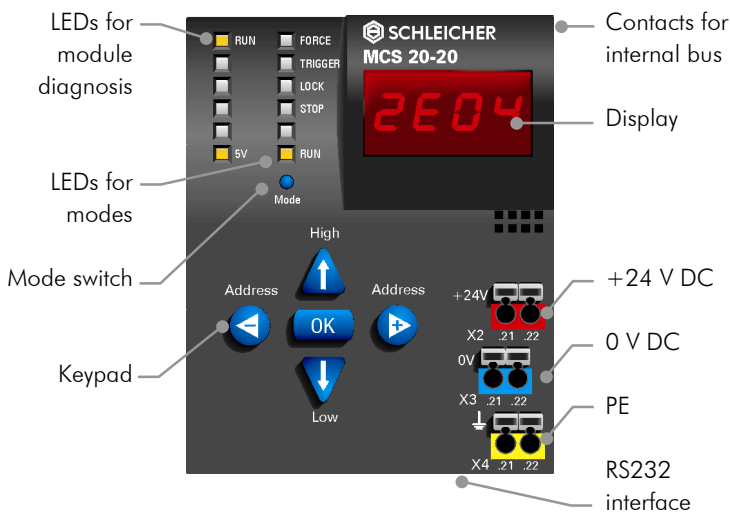


### Block diagram

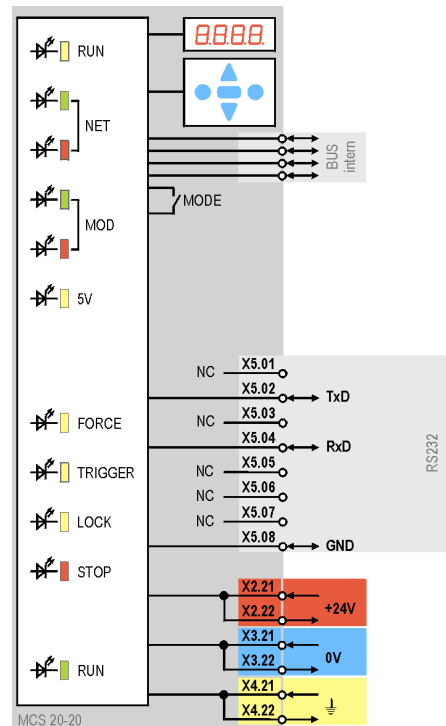


The microLine MCS 20-21 combines bus coupler with PLC. As a bus coupler it combines up to eight digital or analog expansion modules with the CANopen bus. As a PLC it offers intelligence in the field bus and allows decentralized data (pre-)processing.

Configuring is carried out with the Windows programming system Prodoc Plus according to IEC 61131-3, that is matched to the resources of the microLine to ensure simple operation.



### Block diagram



The microLine MCS 20-20 is a stand-alone PLC for on-the-spot data processing in smaller systems. It processes the input/output signals from up to eight expansion modules with 128 digital or 56 analog channels.

Configuring is carried out with the Windows programming system Prodoc Plus according to IEC 61131-3, that is matched to the resources of the microLine to ensure simple operation.

Technical Data	MCS 20-21	MCS 20-20
Article number	365 158 34	365 158 45
Field bus	CANopen	None
Programming software	Prodoc Plus to IEC 61131-3 (Windows software)	
<b>Hardware and Memory</b>		
CPU	Motorola MC68LC302, 16-bit, 24 MHz	
RAM	512 KB of which approx. 128 KB for PLC programs and 64 KB for retain data	
FLASH memory	2048 KB 1024 KB for operating system and 1024 KB for PLC programs	
Real-time clock	Battery-buffered with calendar and leap year, resolution: 1 s	
Buffer element	Vanadium pentoxide lithium cell (min. buffer time 3 months)	
Node-ID	Address range 0 ... 127 set via keypad and display	–
Baud rate	up to 1000 kbaud, set via keypad and display	–
Diagnosis interface	Switch on/off via keypad and display	–
External supply voltage	DC 24 V (±20%, max. 5% residual ripple)	
Power supply to CAN interface	DC 11 ... 30V (meets CAN specification)	–
Power consumption	microLine: < 4 W from external 24 V supply Connected modules: max. 5 W via internal 5 V supply	
Number of attachable I/O modules	8	
<b>Interfaces</b>		
RS 232	External, programming interface	
CANopen	External, 1 x open style connector 5-pin	–
<b>PLC Properties</b>		
Processing speed	For 1000 instructions of data type	BOOL: 2.62 ms BYTE: 2.77 ms WORD: 1.94 ms DWORD: 2.02 ms
Function blocks	max. 256	
Operating system	VxWorks, multitasking operating system (time-driven / priority-driven)	
Number of tasks	16	
Task cycle times	Programmable ≥ 2 ms (even-order)	
Memory management	Dynamic	
Max. I/O range internal	64 bytes input data 64 bytes output data	
Times and counters	Any number programmable ≥ 2 ms (Number limited only by memory capacity)	
For general technical data see next page		

## Technical Data RIO IP20

### Electrical data

Supply voltage	24 V DC $\pm$ 20% max. 5% residual ripple
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### Connection system

Sensors / actuators	Spring terminal
Field bus	Profibus-DP: Subminiature, 9-pin
Supply voltage	Interbus: Screw terminals
	CAN DeviceNet / CANopen: Open style connector
	Spring terminal
Cable cross-section	Finely stranded 0.14 – 1.5 mm <sup>2</sup> , single-core 0.5 – 2.5 mm <sup>2</sup>

### Housing and installation

Type of protection	IP 20 to EN 60529
Dimensions (W x H x D)	RIO microLine PLC: 74.5 x 93 x 51 mm
	RIO BC Bus Couplers: 74.5 x 93 x 51 mm
	RIO EC Bus Couplers: 63 x 93 x 51 mm
	RIO Expansion Modules: 69 x 93 x 51 mm
	RIO Compact I/Os: 69 x 93 x 51 mm
	RIO Terminal Extensions: 69 x 36 x 45 mm
Rail	DIN rail EN 50022-35
Installation position	Vertical, free air circulation

### Climatic Conditions

Ambient operating temperature	0 ... +55°C (category KV to DIN 40040)
Storage temperature	-25 ... +70°C (category HS to DIN 40040)
Relative humidity	30 ... 95% (category F to DIN 40040), no condensation
Air pressure in operation	860 ... 1060 hPa

### Mechanical strength

Vibration	10 ... 57 Hz constant amplitude 0.075 mm
	57 ... 150 Hz constant acceleration 1 g (to DIN IEC 68-2-6)

### Electromagnetic compatibility

Electrostatic discharge	EN 61000-4-2: 4 kV contact discharge
Electromagnetic fields	EN 61000-4-3: field intensity 10 V/m, 80 ... 1000 MHz
Burst	EN 61000-4-4: 2 kV on DC supply lines, 1 kV on I/O signal and serial interface lines
Interference emissions	EN 55011: Limit Category A, Group 1