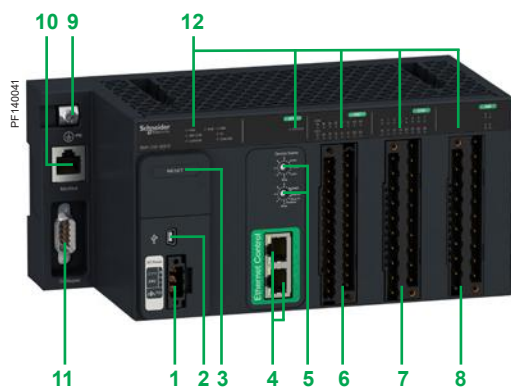




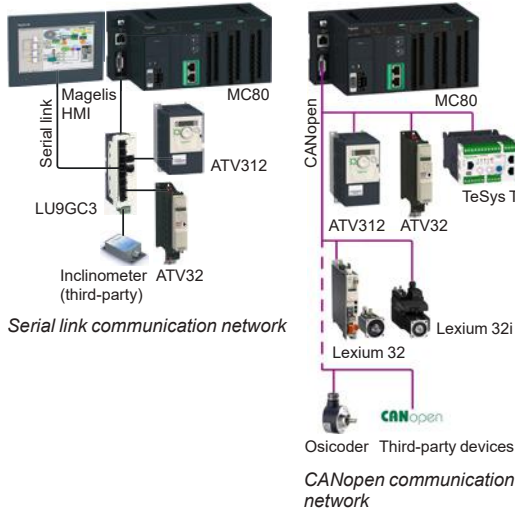
BMKC8030311

Description

Modicon MC80 programmable controllers have the followings on the front panel:

- 1 A galvanic isolated 24 V $\overline{\text{DC}}$ power supply on the PLC to supply the whole module
- 2 A mini-B USB port (type 2.0). The USB port is a default terminal connection for application download/upload, programming tools connection, etc.
- 3 A reset button
- 4 2 Ethernet ports with an embedded Ethernet switch dedicated to Ethernet communication
- 5 2 rotary switches which enable IP addressing
- 6 2 high-speed counter channels with 6 discrete inputs and 2 discrete outputs per channel (available with **BMKC8020310** and **BMKC8030311** controllers)
- 7 8 discrete inputs and 8/12 discrete outputs
- 8 4 analog inputs (available with **BMKC8020301** and **BMKC8030311** controllers)
- 9 A grounding screw
- 10 An RJ45 connector for Modbus serial link, Character mode link, Modbus slave or Modbus RTU/ASCII master bus (RS232/RS485, 300...19200 bps). The serial link can be used for connecting the HMI and other serial devices.
- 11 A 9-way SUB-D connector for the integrated CANopen master bus, supports up to 16 devices
- 12 Display blocks comprising between 28 and 44 LEDs, depending on the model:
 - ☐ PWR (green): indicates the power supply status
 - ☐ RUN (green): indicates the module operating status
 - ☐ ERR (red): indicates the module's detected errors
 - ☐ SER COM (yellow): indicates the communication activity of the serial link
 - ☐ IO (red): indicates a detected error on the I/O ports
 - ☐ CAN RUN (green): indicates the CANopen operating status
 - ☐ CAN ERR (red): indicates detected errors on CANopen
 - ☐ ETH STS (green): indicates the Ethernet port operating status
 - ☐ CH0 and CH1: IA, IB, IS, IE, IP, IC, Q0, Q1 (green): indicate the state of the high-speed counter channels (**BMKC8020310** and **BMKC8030311** controllers only)
 - ☐ 0 to 7 (green): indicate the state of the discrete inputs
 - ☐ 16 to 27 (green): indicate the state of the discrete outputs
 - ☐ 0 to 3 (green): indicate the state of the analog inputs (**BMKC8020301** and **BMKC8030311** controllers only)

Communication



CANopen

The embedded CANopen master on Modicon MC80 controllers is available for connecting Schneider Electric devices and other third-party devices. The following devices are compatible with MC80 controllers:

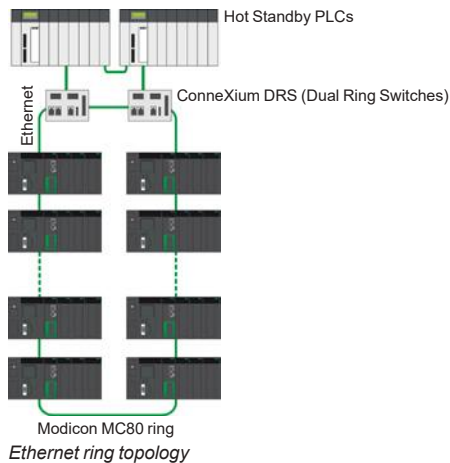
- Altivar variable speed drives, Lexium servo drives and Osicoder
- Other third-party servo drives, variable speed drives or sensors

In addition, the MFB (Motion Function Block) integrated in Control Expert is able to set up motion control in the architectures with drives and servo drives for axis control. In compliance with PLCopen specifications, the MFB library makes motion programming with Control Expert, as well as axis diagnosis, both easy and flexible.

Serial link

Modicon MC80 controllers integrate a serial link which can be used with the Modbus RTU/ASCII master/slave protocol or with the Character mode protocol.

In Modbus mode, MC80 controller can be configured either in master mode or in slave mode for connecting with HMI or with serial field devices.



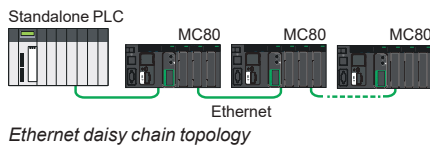
Ethernet

Modicon MC80 controllers support Modbus/TCP, a complete open Ethernet protocol. The following communication services are available on MC80 for use in automation applications:

- DHCP
- FTP (for firmware upgrades only)
- Modbus/TCP messaging
- FDR (Fast Device Replacement)
- SNMP (Simple Network Management Protocol) V1
- Bandwidth management
- RSTP (Rapid Spanning Tree Protocol) for ring network

The RSTP function can be easily enabled and disabled in Control Expert for different Ethernet network topologies:

- Ring topology with RSTP enabled
- Daisy chain topology with RSTP disabled

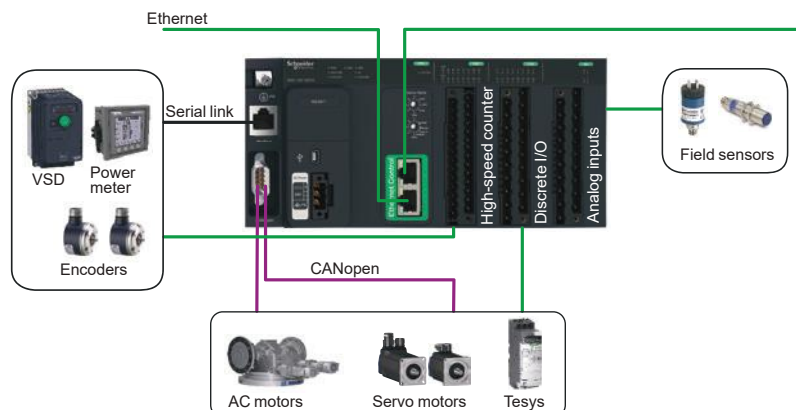


Example of local controller cabinet architecture

The local controller cabinet architecture example on the right shows the types of devices that can be connected to the Modicon MC80 programmable logic controller.

Modicon MC80 could be used in below use cases:

- Local controller
- Remote IO control unit
- Gateway (Ethernet <=> Modbus Serial/CANopen)

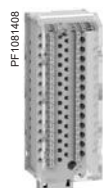


Modicon MC80 programmable logic controllers

Controllers, removable terminal blocks, grounding accessories and CANopen cabling system



BMKC8030311



BMXFTB2820



STBXSP3000 + STBXSP3020



TSXCANTDM4



TSXCANKCDF90T



TSXCANKCDF90TP



TSXCANKCDF180T



VW3CANTAP2

Modicon MC80 controllers

Description	Number of I/O	No. of high-speed counter channels	Reference	Weight kg/lb
Controller	8 discrete inputs 12 discrete outputs 4 analog inputs	—	BMKC8020301	1.050/ 2.310
	8 discrete inputs 8 discrete outputs	2	BMKC8020310	0.980/ 2.160
	8 discrete inputs 12 discrete outputs 4 analog inputs	2	BMKC8030311	1.150/ 2.540

Removable terminal blocks

Description	Type	Reference	Weight kg/lb
20-way removable terminal blocks	Cage clamp	BMXFTB2000	0.093/ 0.205
	Screw clamp	BMXFTB2010	0.075/ 0.165
	Spring	BMXFTB2020	0.060/ 0.132
28-way removable terminal blocks	Cage clamp	BMXFTB2800	0.111/ 0.245
	Spring	BMXFTB2820	0.080/ 0.176

Grounding accessories

Description	Use for	Sold in lots of	Reference	Weight kg/lb
Grounding kit	Grounding shielded cables Comprises 1 bar (1 m/3.21 ft long) and 2 lateral supports	—	STBXSP3000	—
Terminal for grounding kit	Fastening analog input modules and counter module connection cables, cross-section 1.5...6 mm²/ AWG 16...10	10	STBXSP3020	—

Standard tap junctions and connectors

Designation	Description	Reference	Weight kg/lb
IP 20 CANopen tap junction	4 SUB-D ports. Screw terminal block for connecting the trunk cables Line termination	TSXCANTDM4	0.196/ 0.432
IP 20 connectors CANopen female 9-way SUB-D. Switch for line termination	90° angled	TSXCANKCDF90T	0.046/ 0.101
	Straight (1)	TSXCANKCDF180T	0.049/ 0.108
	Right-angle with 9-way SUB-D for connecting a PC or diagnostic tool	TSXCANKCDF90TP	0.051/ 0.112
	2 RJ45 ports and 1 RJ45 port	VW3CANTAP2	—

Modicon MC80 programmable logic controllers

CANopen and serial link cabling systems

IP 20 standard cables and preassembled cordsets

Designation	Description	Length m/ ft	Reference	Weight kg/ lb
CANopen cables (AWG 24)	Standard, CE marking: low smoke emission. Zero halogen. Flame-retardant (IEC 60332-1)	50/ 164.04	TSXCANCA50	4.930/ 10.869
		100/ 328.08	TSXCANCA100	8.800/ 19.401
		300/ 984.25	TSXCANCA300	24.560/ 54.145
	Standard, UL certification, CE marking: flame-retardant (IEC 60332-2)	50/ 164.04	TSXCANCB50	3.580/ 7.893
		100/ 328.08	TSXCANCB100	7.840/ 17.284
		300/ 984.25	TSXCANCB300	21.870/ 48.215
	For harsh environments (3) or mobile installations, CE marking: low smoke emission. Zero halogen. Flame-retardant (IEC 60332-1). Oil-resistant	50/ 164.04	TSXCANCD50	3.510/ 7.738
		100/ 328.08	TSXCANCD100	7.770/ 17.130
		300/ 984.25	TSXCANCD300	21.700/ 47.840
CANopen preassembled cordsets One 9-way female SUB-D connector at each end (AWG 24)	Standard, CE marking: low smoke emission. Zero halogen. Flame-retardant (IEC 60332-1)	0.3/ 0.98	TSXCANCADD03	0.091/ 0.201
		1/ 3.28	TSXCANCADD1	0.143/ 0.315
		3/ 9.84	TSXCANCADD3	0.295/ 0.650
		5/ 16.40	TSXCANCADD5	0.440/ 0.970
	Standard, UL certification, CE marking: flame-retardant (IEC 60332-2)	0.3/ 0.98	TSXCANCBDD03	0.086/ 0.190
		1/ 3.28	TSXCANCBDD1	0.131/ 0.289
		3/ 9.84	TSXCANCBDD3	0.268/ 0.591
		5/ 16.40	TSXCANCBDD5	0.400/ 0.882

Extension and adaptation elements for RS 485 serial link

Designation	Description	Length m/ ft	Reference	Weight kg/ lb
Modbus splitter box	- 1 screw terminal block for trunk cable: D(A), D(B), $\frac{+}{-}$ and 0V - 8 x RJ45 connectors for tap-off - 2 x RJ45 connectors for series connection of LU9 GC3 splitter boxes - Mounting on 35 mm/1.38 in. $\perp$ rail	—	LU9GC3	0.500/ 1.102
T-junction boxes dedicated to Altivar and Lexium	- 2 x RJ45 connectors - 1 integrated cable with RJ45 connector	0.3/ 0.98	VW3A8306TF03	0.190/ 0.419
		1/ 3.28	VW3A8306TF10	0.210/ 0.463
Junction box Screw terminal block for trunk cable tap-off 1 x RJ45 connector for tap-off	- Isolation of the RS 485 serial link - Line termination ($R = 120 \Omega$, $C = 1 \text{ nF}$) - Line pre-polarization (1) ($2 R = 620 \Omega$) - 24 V $\perp$ power supply (2) - Mounting on 35 mm/1.38 in. $\perp$ rail	—	TWDXCAISO	0.100/ 0.220
Tap junction 3 x RJ45 connectors	- Line termination ($R = 120 \Omega$, $C = 1 \text{ nF}$) - Line pre-polarization (1) ($2 R = 620 \Omega$) - Mounting on 35 mm/1.38 in. $\perp$ rail	—	TWDXCAT3RJ	0.080/ 0.176



LU9GC3



VW3A8306TF03



TWDXCAISO



TWDXCAT3RJ

(1) Line polarization required for connection to the master Twido programmable controller.

(2) 24 V $\perp$ power supply, or power supply via the serial port integrated in Modicon MC80 processors.

Modicon MC80 programmable logic controllers

Serial link cabling system, shielded connection cables and USB cordsets



XGSZ24

Extension and adaptation elements for RS 485 serial link

Designation	Description	Sold in lots of	Reference	Weight kg/ lb
RS 232C/RS 485 line converter without modem signals	24 V $\square$ /20 mA power supply, 19.2 Kbps Mounting on 35 mm/1.38 in. rail	—	XGSZ24	0.100/ 0.220
Line terminator	For RJ45 connector R = 120 Ω , C = 1 nF	2	VW3A8306RC	0.200/ 0.441

Shielded copper connection cables

EIA/TIA 568 shielded twisted pair cables for C€ market

Description	With connectors at both ends	Type	Length m/ft	Reference	Weight kg/ lb
Straight-through copper cables C€ compatible	2 x RJ45 connectors For connection to terminal equipment (DTE)	Standard	2/6.56	490NTW00002	—
			5/16.40	490NTW00005	—
			12/39.37	490NTW00012	—
			40/131.23	490NTW00040	—
			80/262.47	490NTW00080	—
		Rugged	1/3.28	TCSECE3M3M1S4	—
			2/6.56	TCSECE3M3M2S4	—
			3/9.84	TCSECE3M3M3S4	—
			5/16.40	TCSECE3M3M5S4	—
					—
Crossover copper cables C€ compatible	2 x RJ45 connectors For connection between hubs, switches, and transceivers	Standard	5/16.40	490NTC00005	—
			15/49.21	490NTC00015	—
			40/131.23	490NTC00040	—

Shielded twisted pair cables for UL market

Description	With connectors at both ends	Type	Length m/ft	Reference	Weight kg/ lb
Straight-through copper cables UL compatible	2 x RJ45 connectors For connection to terminal equipment (DTE)	Standard	2/6.56	490NTW00002U	—
			5/16.40	490NTW00005U	—
			12/39.37	490NTW00012U	—
					—
		Rugged	1/3.28	TCSECU3M3M1S4	—
			2/6.56	TCSECU3M3M2S4	—
			3/9.84	TCSECU3M3M3S4	—
			5/16.40	TCSECU3M3M5S4	—

Standard separate parts

Description	Use		Length m/ ft	Reference	Weight kg/ lb
	From	To			
Terminal port/USB cordsets	Mini B USB port on the Modicon MC80 controller	Type A USB port on PC terminal	1.8/	BMXXCAUSBH018	0.065/
			5.91		0.143
			4.5/	BMXXCAUSBH045	0.110/
			14.76		0.243



BMXXCAUSBH018