MGate MB3170/MB3270 Series

1 and 2-port advanced serial-to-Ethernet Modbus gateways



Features and Benefits

- · Supports Auto Device Routing for easy configuration
- · Supports route by TCP port or IP address for flexible deployment
- · Connects up to 32 Modbus TCP servers
- · Connects up to 31 or 62 Modbus RTU/ASCII slaves
- Accessed by up to 32 Modbus TCP clients (retains 32 Modbus requests for each Master)
- Supports Modbus serial master to Modbus serial slave communications
- · Built-in Ethernet cascading for easy wiring
- 10/100BaseTX (RJ45) or 100BaseFX (single mode or multi-mode with SC/ST connector)
- Emergency request tunnels ensure QoS control
- · Embedded Modbus traffic monitoring for easy troubleshooting
- · Serial port with 2 kV isolation protection (for "-I" models)
- -40 to 75°C wide operating temperature models available
- Supports redundant dual DC power inputs and 1 relay output

Certifications



Introduction

The MGate MB3170 and MB3270 are 1 and 2-port Modbus gateways, respectively, that convert between Modbus TCP, ASCII, and RTU communications protocols. The gateways provide both serial-to-Ethernet communication and serial (master) to serial (slave) communications. In addition, the gateways support simultaneously connecting serial and Ethernet masters with serial Modbus devices. The MGate MB3170 and MB3270 Series gateways can be accessed by up to 32 TCP master/clients or connect to up to 32 TCP slave/servers. Routing through the serial ports can be controlled by IP address, TCP port number, or ID mapping. A featured priority control function allows urgent commands to obtain an immediate response. All models are rugged, DIN-rail mountable, and offer optional built-in optical isolation for serial signals.

Integrate TCP Masters without Altering the Modbus RTU/ASCII Network or Software

The MB3270 can integrate Modbus TCP with Modbus RTU/ASCII, without modifying the existing Modbus RTU/ASCII architecture or software. With the serial redirector function, a serial master can maintain direct access to serial slave devices through a specially mapped serial port. This allows the serial and TCP masters to access serial slaves simultaneously.

Optical Fiber for Ethernet Communication

The MGate MB3170 Series includes 100BaseFX fiber models that support transmission distances up to 4 km for multi-mode models, and up to 40 km for single-mode models. Optical fiber is well-suited for industrial applications because it is immune to electromagnetic noise and interference. For environments that experience high ground loop voltages, fiber provides the best isolation protection, and because there is no danger of sparking, optical fiber is safer than copper wire to use in hazardous environments.

Auto-Device Routing for Easy Configuration (Patent Pending)

Moxa's Auto-Device Routing function helps eliminate many of the problems and inconveniences encountered by engineers who need to configure large numbers of Modbus devices. A single mouse click is all that's required to set up a slave ID routing table and configure Modbus gateways to automatically detect Modbus requests from a supervisory control and data acquisition (SCADA) system. By removing the need to manually create the slave ID routing table, the Auto-Device Routing function saves engineers significant time and cost.

Priority Control for Urgent Commands (Patented)

As Modbus networks increase in size and complexity, the lag time between commands and responses becomes a major concern. Advanced models of the MB3000 Series provide a priority control function for urgent commands, allowing users to force certain commands to get an immediate response. Depending on your system's requirements, different methods are available to define which commands receive priority.



Patent Numbers: (US/TW)

- US7,743,192 B2/I332618
- US7,725,635 B2/I321007

Specifications

Ethernet Interface

10/100BaseT(X) Ports (RJ45 connector)

Magnetic Isolation Protection

Optical Fiber

2 (1 IP, Ethernet cascade) Auto MDI/MDI-X connection

1.5 kV (built-in)

		100BaseFX			
		Multi-Mode		Single-Mode	
Fiber Cable Type		OM1	50/125 µm	0.050	
			800 MHz x km	G.652	
Typical Distance		4 km	5 km	40 km	
Wavelength	Typical (nm)	1300		1310	
	TX Range (nm)	1260 to 1360		1280 to 1340	
	RX Range (nm)	1100 to 1600		1100 to 1600	
Optical Power	TX Range (dBm)	-10 to -20		0 to -5	
	RX Range (dBm)	-3 to -32		-3 to -34	
	Link Budget (dB)	12		29	
	Dispersion Penalty (dB)	3		1	

attenuator to prevent damage caused by excessive optical power. Note: Compute the "typical distance" of a specific fiber transceiver as follows: Link budget (dB) > dispersion penalty (dB) + total link loss (dB).

Ethernet Software Features

Industrial Protocols	Modbus TCP Client (Master), Modbus TCP Server (Slave)
Configuration Options	Web Console (HTTP/HTTPS), Device Search Utility (DSU), MGate Manager, Telnet Console
Management	ARP, DHCP Client, DNS, HTTP, HTTPS, SMTP, SNMP Trap, SNMPv1/v2c/v3, TCP/IP, Telnet, UDP, NTP Client
MIB	RFC1213, RFC1317
Time Management	NTP Client
Serial Interface	
No. of Ports	MGate MB3170 Series: 1 MGate MB3270 Series: 2
Connector	MGate MB3170/MB3170I: DB9 male for RS-232 and terminal block for RS-422/485 MGate MB3270/MB3270I: 2 x DB9 male
Serial Standards	RS-232/422/485 (software selectable)
Baudrate	50 bps to 921.6 kbps
Data Bits	7,8
Parity	None, Even, Odd, Space, Mark



Five ControlDTK/DSR, RTS Togle (RS-232 enly), RTS/CTSR5485 Data Direction ControlADDC® (automatic data direction control)Pull High/Low Resistor for RS-4851 kilo-chm, 150 kilo-chmsTerminator for RS-4851 colomsIsolationMata MB37707-21 k/l imodels) Motan MB37707-25 k/l imodels) Motan MB37707-55 C: 2 k/l (imodels) Motan MB37707-55 C: 2 k/l (imodels)Seriel SignalTx, rk, rk, rk, rk, ONDR-48-20Date, Date, OADR-48-20Date, Date, OADR-48-20Motan RTU/ASCII Mater, Motan RTU/ASCII Signal FIMax No. OS Gere Connector12 kl 4 VOCNore ConnectorPinetimial blockR-2002Pinetimial blockR-2003Mater MB3770M-MSC/MB3770K-MSC/MB3770K-MSC/MB3770K-MSC/MB3770K-MSC/MB3	Stop Bits	1,2
Ide High/Law Resistor for RS-485 iklia-ohm, 150 klia-ohms Torminator for RS-485 i20 ohms Isolation MGate MB3170F: 2 kV (I models) MGate MB3170F-85C: 2	Flow Control	DTR/DSR, RTS Toggle (RS-232 only), RTS/CTS
Terminator for RS-485 100 hms isolation 100 hms isolation Migate MB31701: 2 kV (I models) Migate MB31701-KSC: M	RS-485 Data Direction Control	ADDC® (automatic data direction control)
Iselation Gate MB31701: 2 kV (I models) Maske MB31701: 2 kV (I models) Maske MB31701: 5 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Maske MB31701: 5 kC: 2 kV (I models) Srial Signals F R5-422 Tx+, Tx+, Rx+, GND R5-4524 Tx+, Tx+, Rx+, GND R5-4524 Tx+, Tx+, Rx+, GND Srial Software Foatures F Industrial Protocols Modus RTU/ASCII Master, Modus RTU/ASCII Slave Modus (I ransparent) S Max. No. of Client Connections 2 Input Voltage 12 to 4 VOC Input Voltage Serial Software MB3170/MB3270: 435 mA f 12 VDC Moder MB3170/MB3270: 435 mA f 12 VDC Maske MB3170/MB3170: M-SC/MB3170: M-S	Pull High/Low Resistor for RS-485	1 kilo-ohm, 150 kilo-ohms
Rate MB3170H-SC: 2V (I models) MGate MB3270H-T: 2V (I models) MGate MG3270HGATE MGATE MG	Terminator for RS-485	120 ohms
RS-232TxD, RxD, RTS, CTS, DTR, DSR, DCD, GNDRS-422Tx+, Tx-, Rx+, Rx-, GNDRS-485-2wData+, Data-, GNDRS-486-4wTx+, Tx-, Rx+, Rx-, GNDSerial Software FeaturesModbus RTU/ASCII Master, Modbus RTU/ASCII SlaveIndustrial ProtocolsModbus RTU/ASCII Master, Modbus RTU/ASCII SlaveModbus (Transparent)12Max. No. of Client Connections32Power Parameters12 to 48 VDCInput Voltage12 to 48 VDCInput GurrentMGate MB3170/MB3270: 435 mA @ 12 VDC MGate MB3170/MB3170-S-SC: 655 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-S-SC: 655 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 655 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 655 mA @ 12 VDCPower ConnectorPointerninal blockRelaysPointerninal blockPhysical CharacteristicsPointerninal blockPhysical CharacteristicsPisointerninal blockPosingPisointerningPosingPisointerningPosingPisointerningPosingPisoin	Isolation	MGate MB3170I-T: 2 kV (I models) MGate MB3170I-M-SC: 2 kV (I models) MGate MB3170I-M-SC-T: 2 kV (I models) MGate MB3170I-S-SC: 2 kV (I models) MGate MB3170I-S-SC-T: 2 kV (I models) MGate MB3270I: 2 kV (I models)
RS-422 Tx+, Tx-, Rx+, Rx-, GND RS-485-2w Dat+, Dat+, GND RS-485-4w Tx+, Tx-, Rx+, Rx-, GND RS-485-4w Modus RTU/ASCII Master, Modbus RTU/ASCII Slave Serial Software Features Modus RTU/ASCII Master, Modbus RTU/ASCII Slave Industrial Protocols 02 Max. No. of Client Connections 02 Power Parameters 12 Input Voltage 12 to 48 VDC Input Voltage 12 to 48 VDC Power Connector 7.pin terminal block Power Connector Pointerminal Protocol State MB3170/MB3270-45.C/MB3170-HS-SC/MB3170-HS-SC/MB3170-HS-SC/MB3170-HS-SC/MB3170-HS-SC/MB3170-MS	Serial Signals	
RS-485-2w Data+, Data-, GND RS-485-2w Data+, Data-, GND RS-485-4w Tx+, Tx-, Rx+, Rx-, GND Serial Software Features Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave Industrial Protocols Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave Modbus (Transparent) 32 Max. No. of Client Connections 32 Power Parameters 12 to 48 VDC Input Voltage 12 to 48 VDC Input Current MGBate MB3170/MB3270: 35 mA @ 12 VDC MGate MB32701/MB3170-S-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB32701/MB3170-S-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB32701/MB3170-S-SC: 6/MB3170I-S-SC: 555 mA @ 12 VDC Power Connector 7-pin terminal block Relays 1 Voltare Cornent Rating Resistve load: 1 A @ 30 VDC Physical Characteristics 1 Physical Characteristics Pastic Inpunsions (with cars) 92 x 92.x 124.5 mm (1.14 x 3.51 x 4.90 in) Dimensions (without ears) 92 x 92.x 118.5 mm (1.14 x 3.51 x 4.67 in) <td>RS-232</td> <td>TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND</td>	RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-485-4w TA-, TA-, RA-, GND RS-485-4w TA-, TA-, RA-, GND Serial Software Features Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave Industrial Protocols Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave Modbus (Transparent) Industrial Protocols Max. No. of Client Connections 32 Power Parameters Industrial Protocols Input Voltage 12 to 48 VDC Input Voltage MGate MB3170/MB3270: 435 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB32701/MB3170-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB32701/MB3170-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB32701/MB3170-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC Power Connector -pin terminal block Relays - Contact Current Rating Resitve load: 1 A @ 30 VDC Physical Characteristics - Housing Plastice IP Rating Plastice Dimensions (without ears) 20 × 89.2 × 118.5 mm (1.14 × 3.51 × 4.90 in) Dimensions (without ears) 20 × 89.2 × 118.5 mm (1.14 × 3.51 × 4.67 in)	RS-422	Tx+, Tx-, Rx+, Rx-, GND
Serial Software Features Industrial Protocols Modbus RTU/ASCII Master, Modbus RTU/ASCII Slave Modbus (Transparent) 32 Max. No. of Client Connections 32 Max. No. of Server Connections 32 Power Parameters 32 Input Voltage 12 to 48 VDC Input Current Magate MB3170/MB3270: 435 m.4 012 VDC Magate MB3170/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 m.A @ 12 VDC Magate MB3270/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 m.A @ 12 VDC Power Connector 7-pin terminal block Relays 5 Yout Current Rating Resistive load: 1 A @ 30 VDC Physical Characteristics Plasic Housing Plasic IP Rating Plasic IP Rating 9×89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in) Dimensions (without ears) 29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)	RS-485-2w	Data+, Data-, GND
Industrial ProtocolsModbus RTU/ASCII Master, Modbus RTU/ASCII SlaveModbus (Transparent)32Max. No. of Client Connections32Max. No. of Server Connections32Power Parameters12 to 48 VDCInput Voltage12 to 48 VDCInput CurrentMGate MB3170/MB3270: 435 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170I-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170I-M-SC/MB3170I-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170I-M-SC/MB3170I-M-SC/MB3170I-M-SC/MB3170I-M-SCPower Connector7-pin terminal blockRelaysEstive load: 1 A @ 30 VDCPhysical CharacteristicsPlasticeHousingPlasticeIn PatingPlasticeIP RatingP30Dimensions (with ears)29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.90 in)Dimensions (without ears)29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)WeightMGate MB3170 Series: 360 g (0.79 lb)	RS-485-4w	Tx+, Tx-, Rx+, Rx-, GND
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Input Current MGate MB3170/MB3270: 435 mA @ 12 VDC MGate MB3170/MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270//MB3170-M-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC Power Connector 7-pin terminal block Relays 7-pin terminal block Contact Current Rating Reistive load: 1 A @ 30 VDC Physical Characteristics Plastice load: 1 A @ 30 VDC Housing Plastice IP Rating IP30 Dimensions (with ears) 29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in) Dimensions (without ears) MGate MB3170 Series: 360 g (0.79 lb)	Power Parameters	
MGate MB3170I/MB3170-S-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC MGate MB3270I/MB3170-M-SC/MB3170I	Input Voltage	12 to 48 VDC
Relays Contact Current Rating Resistive load: 1 A @ 30 VDC Physical Characteristics Housing Plastic IP Rating Plastic Dimensions (with ears) 29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in) Weight Modate MB3170 Series: 360 g (0.79 lb)	Input Current	MGate MB3170I/MB3170-S-SC/MB3170I-M-SC/MB3170I-S-SC: 555 mA @ 12 VDC
Contact Current RatingResistive load: 1 A @ 30 VDCPhysical CharacteristicsHousingPlasticIP RatingPlasticDimensions (with ears)29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)Dimensions (without ears)29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)WeightMGate MB3170 Series: 360 g (0.79 lb)	Power Connector	7-pin terminal block
Physical Characteristics Housing Plastic IP Rating IP30 Dimensions (with ears) 29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in) Dimensions (without ears) 29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in) Weight MGate MB3170 Series: 360 g (0.79 lb)	Relays	
HousingPlasticIP RatingIP30Dimensions (with ears)29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)Dimensions (without ears)29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)WeightMGate MB3170 Series: 360 g (0.79 lb)	Contact Current Rating	Resistive load: 1 A @ 30 VDC
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Dimensions (with ears) 29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in) Dimensions (without ears) 29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in) Weight MGate MB3170 Series: 360 g (0.79 lb)	Housing	Plastic
Dimensions (without ears) 29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in) Weight MGate MB3170 Series: 360 g (0.79 lb)	IP Rating	IP30
Weight MGate MB3170 Series: 360 g (0.79 lb)	Dimensions (with ears)	29 x 89.2 x 124.5 mm (1.14 x 3.51 x 4.90 in)
	Dimensions (without ears)	29 x 89.2 x 118.5 mm (1.14 x 3.51 x 4.67 in)
	Weight	



Environmental Linnis	
Operating Temperature	MGate MB3170: 0 to 60° C (32 to 140° F) MGate MB3170-T: -40 to 75° C (-40 to 167° F) MGate MB3170-M-SC: 0 to 60° C (32 to 140° F) MGate MB3170-M-SC: 1 -40 to 75° C (-40 to 167° F) MGate MB3170-M-ST: 0 to 60° C (32 to 140° F) MGate MB3170-M-ST-T: -40 to 75° C (-40 to 167° F) MGate MB3170-S-SC: 0 to 60° C (32 to 140° F) MGate MB3170-S-SC-T: -40 to 75° C (-40 to 167° F) MGate MB3170-S-SC-T: -40 to 75° C (-40 to 167° F) MGate MB3170-M-SC: 0 to 60° C (32 to 140° F) MGate MB3170-M-SC: 0 to 60° C (32 to 140° F) MGate MB3170-M-SC: 0 to 60° C (32 to 140° F) MGate MB3170-S-SC-T: -40 to 75° C (-40 to 167° F) MGate MB3170-S-SC-T: -40 to 75° C (-40 to 167° F) MGate MB3170-S-SC-T: -40 to 75° C (-40 to 167° F) MGate MB3270: 0 to 60° C (32 to 140° F) MGate MB3270: 0 to 60° C (32 to 140° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F) MGate MB3270-T: -40 to 75° C (-40 to 167° F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
EMC	EN 55032/24
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 6 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 4 kV; Signal: 2 kV IEC 61000-4-5 Surge: Power: 2 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF IEC 61000-4-11 DIPs
Hazardous Locations	ATEX, Class I Division 2, IECEx
Maritime	DNV-GL
Freefall	IEC 60068-2-32
Shock	IEC 60068-2-27
Vibration	IEC 60068-2-6, IEC 60068-2-64
Safety	EN 60950-1, IEC 60950-1, IEC 62368-1, UL 62368-1
MTBF	
Time	MGate MB3170/MB3170I Series: 1,349,710 hrs MGate MB3170-M-SC/M-ST/S-SC Series: 1,175,887 hrs MGate MB3170I-M-SC Series: 768,343 hrs MGate MB3170I-S-SC Series: 763,707 hrs MGate MB3270/MB3270I Series: 1,236,384 hrs
Standards	Telcordia SR332
Warranty	
Warranty Period	5 years
Details	See www.moxa.com/warranty



Package Contents

Do	vice
De	VICE

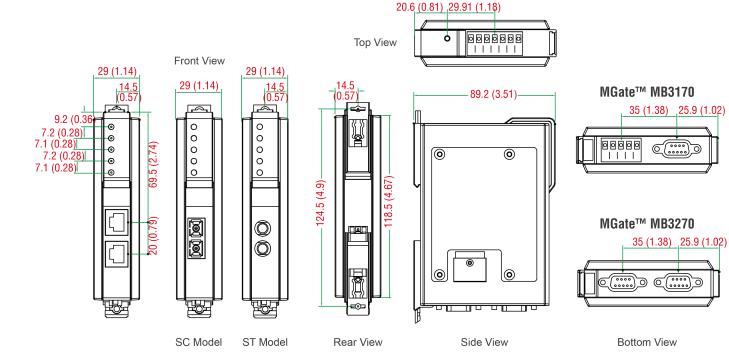
Documentation

1 x MGate MB3170/MB3270 Series gateway

1 x quick installation guide 1 x warranty card

Dimensions

Unit: mm (inch)



Ordering Information

Model Name	Ethernet	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temp.
MGate MB3170	2 x RJ45	1	RS-232/422/485	-	0 to 60°C
MGate MB3170I	2 x RJ45	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3270	2 x RJ45	2	RS-232/422/485	-	0 to 60°C
MGate MB3270I	2 x RJ45	2	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170-T	2 x RJ45	1	RS-232/422/485	-	-40 to 75°C
MGate MB3170I-T	2 x RJ45	1	RS-232/422/485	2 kV	-40 to 75°C
MGate MB3270-T	2 x RJ45	2	RS-232/422/485	-	-40 to 75°C
MGate MB3270I-T	2 x RJ45	2	RS-232/422/485	2 kV	-40 to 75°C
MGate MB3170-M-SC	1 x Multi-Mode SC	1	RS-232/422/485	-	0 to 60°C
MGate MB3170-M-ST	1 x Multi-Mode ST	1	RS-232/422/485	-	0 to 60°C
MGate MB3170-S-SC	1 x Single-Mode SC	1	RS-232/422/485	-	0 to 60°C
MGate MB3170I-M-SC	1 x Multi-Mode SC	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170I-S-SC	1 x Single-Mode SC	1	RS-232/422/485	2 kV	0 to 60°C
MGate MB3170-M-SC-T	1 x Multi-Mode SC	1	RS-232/422/485	-	-40 to 75°C
MGate MB3170-M-ST-T	1 x Multi-Mode ST	1	RS-232/422/485	-	-40 to 75°C
MGate MB3170-S-SC-T	1 x Single-Mode SC	1	RS-232/422/485	-	-40 to 75°C



Model Name	Ethernet	No. of Serial Ports	Serial Standards	Serial Isolation	Operating Temp.
MGate MB3170I-M-SC-T	1 x Multi-mode SC	1	RS-232/422/485	2 kV	-40 to 75°C
MGate MB3170I-S-SC-T	1 x Single-Mode SC	1	RS-232/422/485	2 kV	-40 to 75°C

Accessories (sold separately)

Cables	
CBL-F9M9-150	DB9 female to DB9 male serial cable, 1.5 m
CBL-F9M9-20	DB9 female to DB9 male serial cable, 20 cm
Connectors	
Mini DB9F-to-TB	DB9 female to terminal block connector
Power Cords	
CBL-PJTB-10	Non-locking barrel plug to bare-wire cable

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