M12 Connection Cables for MAC motor Expansion Modules and the QuickStep motors

In order to ease installation of the MAC and QuickStep motors with M12 connectors, JVL has developed a series of ready-made cables and adaptors etc.

In the table on the following center spread we have listed all items available and indicated which cables that should be used with which expansion module.

In the last columns cables for the QuickStep motors ar given.

All the cables and other items for easy installation can normally be delivered from stock.

Special length's of cables can be made to order.

It is recommended to use the protection caps for expansion module sockets not in use.

All the M12 connectors fulfil IP67 requirements.

If desired you can make most of your own flexible or robot cables by means of the 5- and 8-pin male and female connectors.

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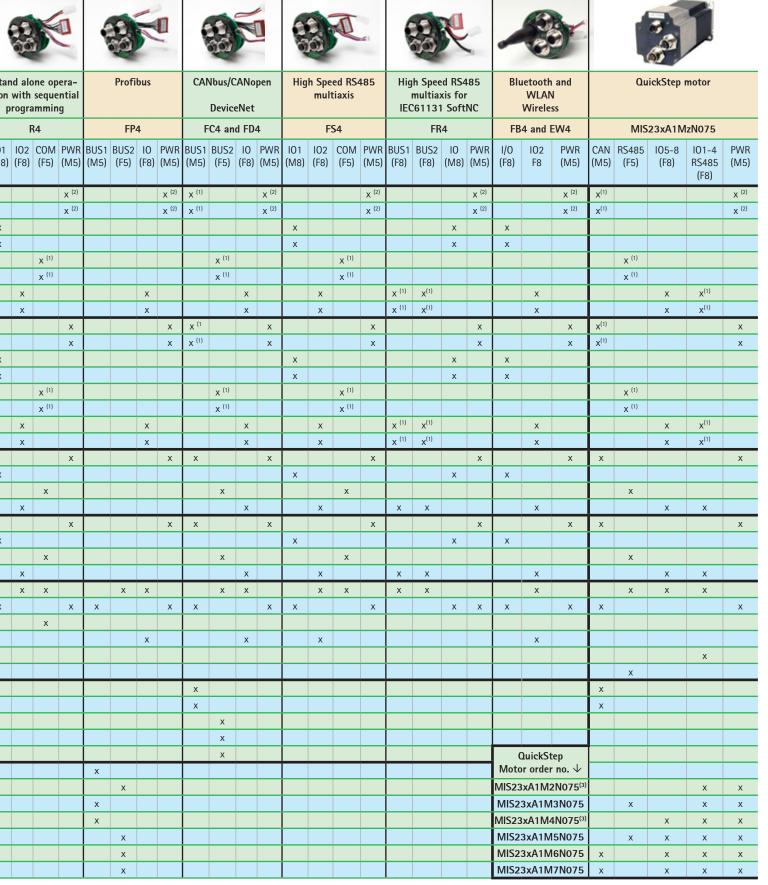# M12 connector overview for MAC motor expansion modules MAC00-X4 and QuickStep motors.

		Shield connected to connector housing	Pulse/direction, RS232, RS485, USB ±10V				Sto... tio...
Expansion module type no.			B4				
Cable order no. / Connectors / Cable Description			IO (M8)	COM1 (F8)	COM2 (F5)	PWR (M5)	IO (M...
WI1000-M12F5V05N	M12, 5 pin female Cable 5m, Power	x				x [2]	
WI1000-M12F5V20N	M12, 5 pin female Cable 20m, Power	x				x [2]	
WI1000-M12F8V05N	M12, 8 pin female Cable 5m, Basic I/O	x	x				x
WI1000-M12F8V20N	M12, 8 pin female Cable 20m, Basic I/O	x	x				x
WI1000-M12M5V05N	M12, 5 pin male Cable 5m, Communication	x		x [1]			
WI1000-M12M5V20N	M12, 5 pin male Cable 20m, Communication	x		x [1]			
WI1000-M12M8V05N	M12, 8 pin male Cable 5m, Extended I/O	x	x [1]				
WI1000-M12M8V20N	M12, 8 pin male Cable 20m, Extended I/O	x	x [1]				
WI1000-M12F5T05N	M12, 5 pin female Cable 5m, Power	x			x		
WI1000-M12F5T20N	M12, 5 pin female Cable 20m, Power	x			x		
WI1000-M12F8T05N	M12, 8 pin female Cable 5m, Basic I/O	x	x				x
WI1000-M12F8T20N	M12, 8 pin female Cable 20m, Basic I/O	x	x				x
WI1000-M12M5T05N	M12, 5 pin male Cable 5m, Communication	x		x [1]			
WI1000-M12M5T20N	M12, 5 pin male Cable 20m, Communication	x		x [1]			
WI1000-M12M8T05N	M12, 8 pin male Cable 5m, Extended I/O	x	x [1]				
WI1000-M12M8T20N	M12, 8 pin male Cable 20m, Extended I/O	x	x [1]				
WI1008-M12F5SS1	M12 5 pin female 0', solder terminal					x	
WI1008-M12F8SS1	M12 8 pin female 0', solder terminal		x				x
WI1008-M12M5SS1	M12 5 pin male 0', solder terminal				x		
WI1008-M12M8SS1	M12 8 pin male 0', solder terminal			x			
WI1008-M12F5TG1	M12 female 5 pin springcon for Ø4-8 cable	x			x		
WI1008-M12F8TC1	M12 female 8 pin, screw, for Ø4-8 cable	x	x				x
WI1008-M12M5TG1	M12 male 5 pin springcon for Ø4-8 cable	x		x			
WI1008-M12M8TC1	M12 male 8 pin, screw, for Ø4-8 cable	x	x				
WI1000-M12FCAP1	IP67 protection cap for M12 female		x	x			
WI1000-M12MCAP1	IP67 protection cap for M12 male		x		x		x
RS232-M12-1-5-5	RS232 M12 5 pin male for MAC00-R4.			x			
RS232-M12-1-5-8	RS232 M12 8 pin male 5m for FC4,FD4,FP4,B4		x				
RS485-M12-1-5-8	RS485 M12 8 pin male 5m		x				
RS485-M12-1-5-5	RS485 M12 5 pin male 5m			x			
WI1006-M12F5S05R	M12 cable, 5m, 5 pin female CANopen/DeviceNet	x					
WI1006-M12F5S15R	M12 cable, 15m, 5 pin female CANopen/DeviceNet	x					
WI1006-M12M5S05R	M12 cable, 5m, 5 pin male CANopen/DeviceNet	x					
WI1006-M12M5S15R	M12 cable, 15m, 5 pin male CANopen/DeviceNet	x					
WI1008-M12M5STR4	M12 5 pin male terminating resistor CANopen/DeviceNet						
WI1028-M12F5VG1	M12 connector profi 5 pin female, screw, B-coded	x					
WI1028-M12M5VG1	M12 connector profi 5 pin male, screw, B-coded	x					
WI1026-M12F5S05R	M12 cable 5m, 5 p. female B coded profibus	x					
WI1026-M12F5S15R	M12 cable 15m. 5 p. female B coded profibus	x					
WI1026-M12M5S05R	M12 cable 5m. 5 pin male B coded profibus	x					
WI1026-M12M5S15R	M12 cable 15m. 5 pin male B coded profibus	x					
WI1028-M12M4STR3	M12 4 pin male B code terminating Resistor Profi						

M5 = 5-pole male connector, F5 = 5-pole female connector. M8 = 8-pole male connector, F8 = 8-pole female connector. Al...
Note 1: Standard cable can be used for RS485, CANopen and DeviceNet but only in low noise environments for point-to-po...
Note 2: For very noisy environments it is recommended to use double shielded power cable and shielded connector.
Note 3: Only for orders > 50 pcs.
Note 4: Can also be delivered without shield connected to connector housing. Order A-type. eg. WI1000-M12F8**A**20N
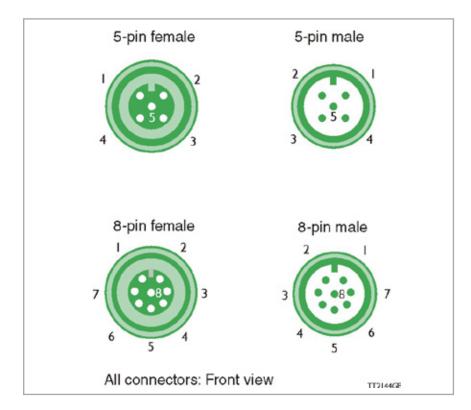See also user manual for each module type for detailed cable information.

Connector / cable compatibility matrix

Column groups (product → connectors):

- **R4** — Stand alone operation with sequential programming: IO1 (F8), IO2 (F8), COM (F5), PWR (M5)
- **FP4** — Profibus: BUS1 (M5), BUS2 (F5), IO (F8), PWR (M5)
- **FC4 and FD4** — CANbus/CANopen, DeviceNet: BUS1 (M5), BUS2 (F5), IO (F8), PWR (M5)
- **FS4** — High Speed RS485 multiaxis: IO1 (M8), IO2 (F8), COM (F5), PWR (M5)
- **FR4** — High Speed RS485 multiaxis for IEC61131 SoftNC: BUS1 (F8), BUS2 (F8), IO (M8), PWR (M5)
- **FB4 and EW4** — Bluetooth and WLAN Wireless: I/O (F8), IO2 (F8), PWR (M5)
- **MIS23xA1MzN075** — QuickStep motor: CAN (M5), RS485 (F5), IO5-8 (F8), IO1-4 RS485 (F8), PWR (M5)

R4 IO1	R4 IO2	R4 COM	R4 PWR	FP4 BUS1	FP4 BUS2	FP4 IO	FP4 PWR	FCD BUS1	FCD BUS2	FCD IO	FCD PWR	FS4 IO1	FS4 IO2	FS4 COM	FS4 PWR	FR4 BUS1	FR4 BUS2	FR4 IO	FR4 PWR	FB I/O	FB IO2	FB PWR	MIS CAN	MIS RS485	MIS IO5-8	MIS IO1-4	MIS PWR
			x [2]				x [2]	x [1]			x [2]				x [2]				x [2]			x [2]	x [1]				x [2]
			x [2]				x [2]	x [1]			x [2]				x [2]				x [2]			x [2]	x [1]				x [2]
x												x						x		x							
x												x						x		x							
		x [1]							x [1]					x [1]											x [1]		
		x [1]							x [1]					x [1]											x [1]		
	x					x				x			x			x [1]	x [1]				x				x	x [1]	
	x					x				x			x			x [1]	x [1]				x				x	x [1]	
			x				x	x [1]			x				x				x			x	x [1]				x
			x				x	x [1]			x				x				x			x	x [1]				x
x												x						x		x							
x												x						x		x							
		x [1]							x [1]					x [1]											x [1]		
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	x					x				x			x			x [1]	x [1]				x				x	x [1]	
			x				x	x			x				x				x			x	x				x
		x							x					x										x			
x												x				x	x			x					x	x	
			x	x			x	x			x	x			x				x	x	x	x	x				x
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QuickStep Motor order numbers

QuickStep Motor order no. ↓	CAN (M5)	RS485 (F5)	IO5-8 (F8)	IO1-4 RS485 (F8)	PWR (M5)
MIS23xA1M2N075 [3]				x	x
MIS23xA1M3N075		x		x	x
MIS23xA1M4N075 [3]			x	x	x
MIS23xA1M5N075		x	x	x	x
MIS23xA1M6N075	x		x	x	x
MIS23xA1M7N075	x		x	x	x

ll standard cables use foil shield and are not twisted pair. It is not recommended for bending applications

int or small networks. We strongly recommend twisted pair and double shielded cable. Shield should be connected to connector housing.

M12 connectors

5-pin female   5-pin male

8-pin female   8-pin male

All connectors: Front view

TT2144GF

Color code for standard cables

5-pole connector

Pin no.	Color
1	Brown
2	White
3	Blue
4	Black
5	Grey

8-pole connector

Pin no.	Color
1	White
2	Brown
3	Green
4	Yellow
5	Grey
6	Pink
7	Blue
8	Red

Color code for DeviceNet cables

Pin no.	Description	Color
1	Drain	Colorless
2	V+	Red
3	V-/CAN_GND	Black
4	CAN_H	White
5	CAN_L	Blue

Color code for CANopen cables

Pin no.	Description	Color
3	CAN_GND	Black
4	CAN_H	White
5	CAN_L	Blue

Color code for ProfiBus cables

Pin no.	Description	Color
1		
2	A	Green
3		
4	B	Red
5	Shield	Shield

Recommended cable for making your own cables:

4-lead RS485 cable with double shield. Order no.: WH0039-N2x2x0.3+2xSC	
2-lead CANopen cable. Order no.: WH0038-N2x0.75-CAN	
2-lead Profibus cable Order no.: WH0040-2Nx0.34-PROFI	