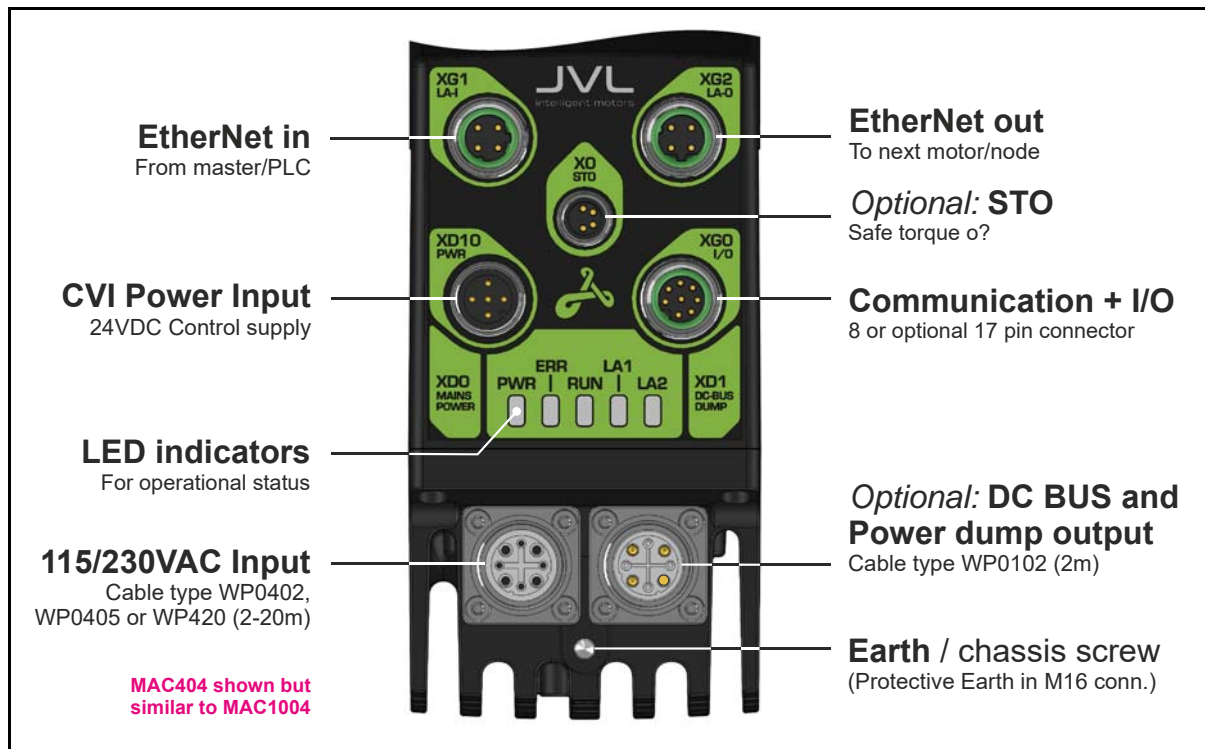


2.1

Connector overview

Only MAC404 and 1004



2.1.1 Connector description including options.

The MAC motors offers robust M8, M12 and M16 connectors which makes it ideal for automation applications and use in a harsh environment. The connectors offer solid mechanical protection and are easy operate.

This chapter covers a MAC with all connector options, such as STO (safe torque off), extended I/O connector and optional M16 connector for external DC bus and/or power dump.

Following tables gives the relevant information about each connector and the pins, wire colours and a short description of the signals available.

The connector layout:

"PWR" (XD10) - Power input. M12 - 5pin male connector				
Signal name	Description	Pin no.	JVL Cable W11000-M12F5TxxN	Isolation group
-	Not used	1	Brown	1
-	Not used	2	White	1
P-	Main supply ground. Connect with pin 5 *	3	Blue	1
CVI	Control and user output supply +7-30VDC. DO NOT connect >30V to this terminal!	4	Black	1
P-	Main supply ground. Connect with pin 3 *	5	Grey	1

Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.



Please notice: When connecting the a cable to one of the M12 connectors it must be tightened with 0.6 Nm to prevent ingress of fluids and/or particles in the connector which can cause malfunction.

(Continued next page)

2.1

Connector overview

Only MAC404 and I004

“LA-I” (XG1) Ethernet In connector - M12 - 4pin female connector “D” coded				
Signal name	Description	Pin no.	JVL Cable W11046-M12 M4TM4TxxT	Isolation group (See note)
Tx0_P	Ethernet Transmit channel 0 - positive terminal	1	-	2
Rx0_P	Ethernet Receive channel 0 - positive terminal	2	-	2
Tx0_N	Ethernet Transmit channel 0 - negative terminal	3	-	2
Rx0_N	Ethernet Receive channel 0 - negative terminal	4	-	2
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

“LA-O” (XG2) Ethernet Out connector M12 - 4 pin female connector “D” coded				
Signal name	Description	Pin no.	JVL Cable W11046-M12 M4TM4TxxT	Isolation group (see note)
Tx1_P	Ethernet Transmit channel 1 - positive terminal	1	-	3
Rx1_P	Ethernet Receive channel 1 - positive terminal	2	-	3
Tx1_N	Ethernet Transmit channel 1 - negative terminal	3	-	3
Rx1_N	Ethernet Receive channel 1 - negative terminal	4	-	3
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

“MAINS POWER” (XD0) connector M16 - 4 pin male connector				
Signal name	Description	Pin no.	JVL Cable WP0402	Isolation group (see note)
Neutral	Neutral used for 115 or 230VAC phase input	A	Blue	4
L1	115VAC supply input	B	Red	4
L2	230VAC supply input	C	Brown	4
PE (Earth)	Protective earth terminal	Earth	Green/Yellow	4
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

2.1.2 Connector option STO

If the motor is called MACxxxxx-xRxxxxx it contain the STO function and have the M8 STO connector included. The table below describes the connections.

“STO” (X0) connector M8 - 4 pin male connector				
Signal name	Description	Pin no.	JVL Cable W11010-M08M4TxxP	Isolation group (see note)
STOA	STO channel A	1	Brown	1
GND	Ground for the STO signals	2	Inner screen	1
STOB	STO channel B	3	Black	1
24V out	DO NOT CONNECT !	4	(do not exist)	1
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

2.1

Connector overview

Only MAC404 and I004

2.1.3

Connector option I/O - 8 pin connector

If the motor is called MACxxxxx-xxxxDxx or MACxxxxx-xxxxQxx it contain the basic I/O connector with RS485 communication in a small portion of I/O's in a 8 pin M12 connector. The table below describes the connections.

"I/O" (XG0) - RS485 + I/O connector - M12 - 8pin female connector.				
Signal name	Description	Pin no.	JVL Cable WI1000-M12 M8TxxN	Isolation group (See note)
IN1	Digital input 1 (24V) or analogue input 0-5V	1	White	1
IN2	Digital input 2 (24V) or analogue input 0-5V	2	Brown	1
OUT1	Digital output max. 300mA. Supplied from CVO.	3	Green	1
GND	Ground intended to be used together with the other signals in this connector	4	Yellow	1
RS485: B0-	RS485 MacTalk interface. Leave open if unused	5	Grey	1
RS485: A0+	RS485 MacTalk interface. Leave open if unused	6	Pink	1
IN3	Digital input 3 (24V) or analogue input 0-5V	7	Blue	1
CVO	Supply output. Connected internally to the CVI terminal in the PWR connector. Max 700 mA. DO NOT connect >30V to this terminal!	8	Red	1

Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.

2.1.4

Connector option I/O - 17 pin connector

If the motor is called MACxxxxx-xxxxExx it contain the extended I/O connector with RS485 communication in a 17 pin M12 connector. The table below describes the connections.

"I/O" (XG0) RS485 + I/O connector - M12 - 17pin female connector				
Signal name	Description	Pin no.	JVL Cable WI1009M12 M17TxxN	Isolation group (see note)
IO1	I/O channel 1. Can be used as input or output 350mA	1	Brown	1
GND	Ground intended to be used together with the other signals in this connector	2	Blue	1
IO2	I/O channel 2. Can be used as input or output 350mA	3	White	1
IO3	I/O channel 3. Can be used as input or output 350mA	4	Green	1
RS422: B1-	RS422 I/O terminal B-	5	Pink	1
IO4	I/O channel 4. Can be used as input or output 350mA	6	Yellow	1
RS422: A1-	RS422 I/O terminal A-	7	Black	1
RS422: B1+	RS422 I/O terminal B+	8	Grey	1
CVO	Supply output. Connected internally to the CVI terminal in the PWR connector. DO NOT connect >30V to this terminal!	9	Red	1
RS422: A1+	RS422 I/O terminal A+	10	Violet	1
IO5	I/O channel 5. Can be used as input or output 350mA	11	Grey/pink	1
IO6	I/O channel 6. Can be used as input or output 350mA	12	Red/blue	1
IO7	I/O channel 7. Can be used as input or output 350mA	13	White/Green	1
IO8	I/O channel 8. Can be used as input or output 350mA	14	Brown/Green	1
RS485: B0-	RS485 MacTalk interface. Leave open if unused	15	White/Yellow	1
GND	Ground intended to be used together with the other signals in this connector	16	Yellow/brown	1
RS485: A0+	RS485 MacTalk interface. Leave open if unused	17	White/grey	1

Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.

2.1

Connector overview

Only MAC404 and I004

2.1.5 Connector option DC-BUS/DUMP

If the motor is called MACxxxxx-xxxxxx8 it contain the extra and optional connector for external DC bus and power dump resistor. The table below describes the connections.

"DC-BUS/DUMP" (XD1) connector M16 - 4 pin female connector				
Signal name	Description	Pin no.	JVL Cable WP0402	Isolation group (see note)
BO	Internal DC bus output	A	White	4
PD	Output to external power dump resistor	B	Yellow	4
CM	DC bus common (high voltage ground)	C	Brown	4
PE (Earth)	Protective earth terminal	Earth	Green/Yellow	4
Connector housing/metal is connected to earth and at JVL supplied cables also to the cable screen.				

Note:

The term "Isolation group" in all the tables, indicate which terminals/circuits that a galvanic connected to each other. In other words group 1, 2, 3 and 4 are all fully independently isolated from each other. Group 5 correspond to the housing of the motor which may also be connected to earth via the DC or AC input supply. Group 5 is isolated from all electrical circuitry inside the motor.