



## MAC00-FC4

CANopen DS301/DSP402, M12 conn., IP67

MAC00 modules are control- and -interface modules for the MAC motor® series of integrated (all-in-one) servo motors with shaft power from 46 W to 4500 W.

Choose between a wide range of control modules

- Ethernet modules support all protocols: Profinet, EtherNet/IP, EtherCAT, SERCOS, Powerlink and ModbusTCP/UDP
- Ethernet modules have built-in Switch for easy daisy-chaining of cables from motor-to-motor
- Wireless modules: WLAN or BlueTooth
- CANopen, Devicenet or Profibus or ePLC modules
- Serial communication modules, RS232 and/or RS485

Unique Ethernet functionality: use MacTalk® (PC software) to change freely between all the different Ethernet protocols, you don t need several different types on stock ONE is enough.



### General information

<b>Description</b>	CANopen DS301/DSP402, M12 conn., IP67, CAN-Open DS-301, M12 conn., IP67		
<b>Manufacture</b>	JVL	<b>For motor type</b>	MAC
<b>Color</b>	Black	<b>Protection house</b>	IP67
<b>Software</b>	MacTalk	<b>Interface</b>	RS232
<b>Connectivity - Busses</b>	CANopen		
<b>Control voltage (CVI/O+) [V]</b>	12-28	<b>Main supply [V]</b>	12-48
<b>Expansion connector</b>	Generation 1		
<b>Integrated PLC</b>	No	<b>PLC no. of DI</b>	0-3 See module
<b>PLC no. of AIN</b>	0-1 See module	<b>PLC no. of DO</b>	0-2 See module
<b>Multifunction IOs</b>		<b>PLC no. of DIO</b>	n/a



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**Mechanical information**

**Customer Sealing**

**Datasheet - pdf**

ld0061gb.pdf



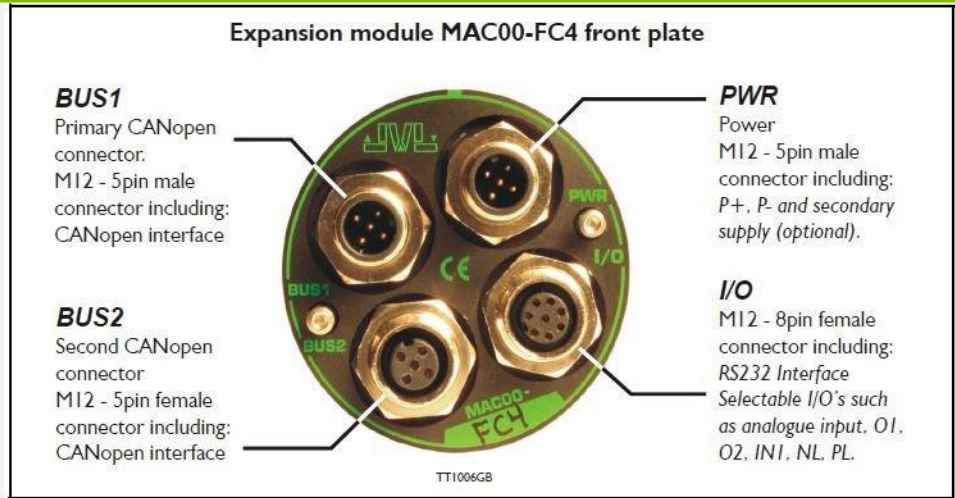
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### Connector information

Expansion connector      Generation 1

#### Picture connectors



<b>Connector 1 label</b>	PWR	<b>Connector 1</b>	M12 5-pin male A-coded
<b>Connector 2 label</b>	IO	<b>Connector 2</b>	M12 8-pin female A-coded
<b>Connector 3 label</b>	BUS2	<b>Connector 3</b>	M12 5-pin female A-coded CAN
<b>Connector 4 label</b>	BUS1	<b>Connector 4</b>	M12 5-pin male A-coded CAN
<b>Connector 2 RS232</b>	Yes	<b>Connector 2 RS485</b>	n/a
<b>Connector 3 RS232</b>	n/a	<b>Connector 3 RS485</b>	n/a
<b>Connector 4 RS232</b>	n/a	<b>Connector 4 RS485</b>	n/a

#### Picture CN1

"PWR" - Power input. M12 - 5-pin male connector				
Signal name	Description	Pin no.	JVL Cable W11000M12 F5T05N	Isolation group
P+	Main supply +12-48VDC. Connect with pin 2 * / **	1	Brown	1
P+	Main supply +12-48VDC. Connect with pin 1 * / **	2	White	1
P-	Main supply ground. Connect with pin 5 *	3	Blue	1
CV	Control voltage +12-48VDC / 12-30VDC **	4	Black	1
P-	Main supply ground. Connect with pin 3 *	5	Grey	1

\* Note: P+ and P- is each available at 2 terminals. Make sure that both terminals are connected in order to split the supply current in 2 terminals and thereby avoid an overload of the connector.  
\*\* Note: When using MAC400 to 3000 the P+ and CV terminal can maximum be supplied by 12-30VDC.

#### Picture CN2

"IO" - I/Os and RS232 interface. M12 - 8-pin female connector.					
Signal name	Description	Function	Pin no.	JVL Cable W11000-M12 M8T05N	Isolation group
IOC	I/O terminal C.	SW3 DIP 5 = OFF : PL Input SW3 DIP 5 = ON : O1 output	1	White	3
Tx	RS232 interface - transmit output Important! DIP1 must be turned ON. If addressing is used it must be turned ON at minimum one of the connected motors.		2	Brown	1
Rx	RS232 interface - receive input		3	Green	1
GND	RS232 Ground - also used with analogue input		4	Yellow	1
IOA	I/O terminal A.	SW3 DIP 2 = ON and DIP3 = OFF AIN (Analogue input) SW3 DIP2 = OFF and DIP 3 = ON O2 (output 2) (AIN is the analogue input. Remember to use the GND terminal with AIN).	5	Grey	3 (1 when used as AIN)
IOB	I/O terminal B.	SW3 DIP 4 = OFF : IN1 (input 1) SW3 DIP 4 = ON : O1 (output 1)	6	Pink	3
IO-	I/O ground to be used with IN1, NL, PL, O1, O2		7	Blue	3
IOD	I/O terminal D.	SW3 DIP 6 = OFF : NL (negative limit input) SW3 DIP 6 = ON : O4 (output supply)	8	Red	3



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**Connector information**

**Picture CN3**

"BUS2" - CANopen® interface. M12 - 5-pin female connector				
Signal name	Description	Pin no.	Cable: W11006-M12M5SxxR	Isolation group
CAN_SHLD	Shield for the CAN interface - internally connected to the motor housing	1	Bare	2
CAN_V+	Reserved for future purpose - do not connect	2	Red	2
CAN_GND	CAN interface ground	3	Black	2
CAN_H	CAN interface. Positive signal line	4	White	2
CAN_L	CAN interface. Negative signal line	5	Blue	2

**Picture CN4**

"BUS1" - CAN-open interface. M12 - 5-pin male connector				
Signal name	Description	Pin no.	Cable: W11006-M12F5SxxR	Isolation group
CAN_SHLD	Shield for the CAN interface - internally connected to the motor housing	1	Bare	2
CAN_V+	Reserved for future purpose - do not connect	2	Red	2
CAN_GND	CAN interface ground	3	Black	2
CAN_H	CAN interface. Positive signal line	4	White	2
CAN_L	CAN interface. Negative signal line	5	Blue	2



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**Electrical information**

<b>Control voltage (CVI/O+)</b> [V]	12-28	<b>Control Voltage (CVI) Min-Max</b> [V]	
<b>Max current CVI</b> [A]			
<b>Main supply</b> [V]	12-48	<b>Main supply Min-Max</b> [V]	10-50
<b>Max current (P+)</b> [A]		<b>P- isolated from Earth</b>	No
		<b>PLC no. of DI</b>	0-3 See module
<b>Dig. Input impedans</b>	10kohm	<b>PLC no. of DO</b>	0-2 See module
<b>PLC DO max current</b> [mA]	25mA - PNP	<b>PLC no. of DIO</b>	n/a
		<b>PLC no. of AIN</b>	0-1 See module
<b>PLC AIN voltage</b> [VDC]	-10 to +10	<b>PLC AIN Min-Max</b> [VDC]	-10 to +32
<b>PLC AIN Max Tol.</b> [%]	5.0	<b>Multifunction IOs</b>	
<b>PLC MF low level</b> [VDC]		<b>PLC MF high level</b> [VDC]	
<b>PLC MF Max level</b> [VDC]		<b>MTBF 30%</b> [Year]	
<b>MTBF 100%</b> [Year]			