FESTO

CMMP-AS-xx-M3 FAQ IO Control Quick Guide

CONTROLLER:	**CMMP-AS-M3**
CONTROLLER FIRMWARE:	**LATEST**
FCT VERSION:	**V1.2.1.3**
FCT PLUGIN VERSION:	**LATEST**
CONTROL METHOD:	**IO (Inputs/Outputs) Control**

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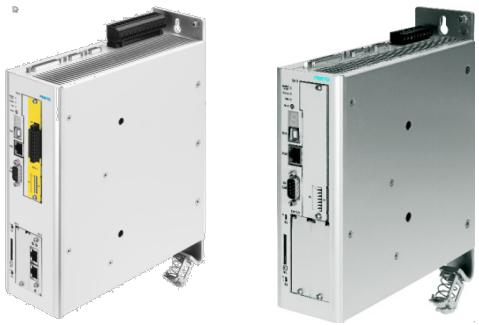
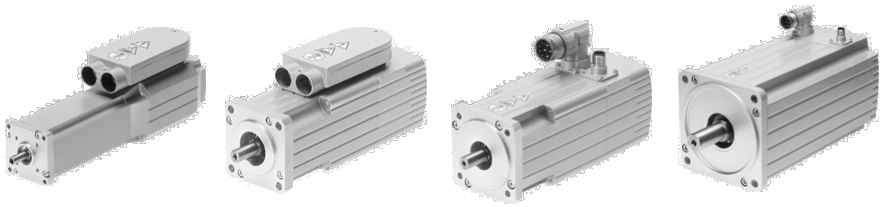
Application Description:

This document attempts to provide a more convenient literature guide on how to startup the controller listed above.





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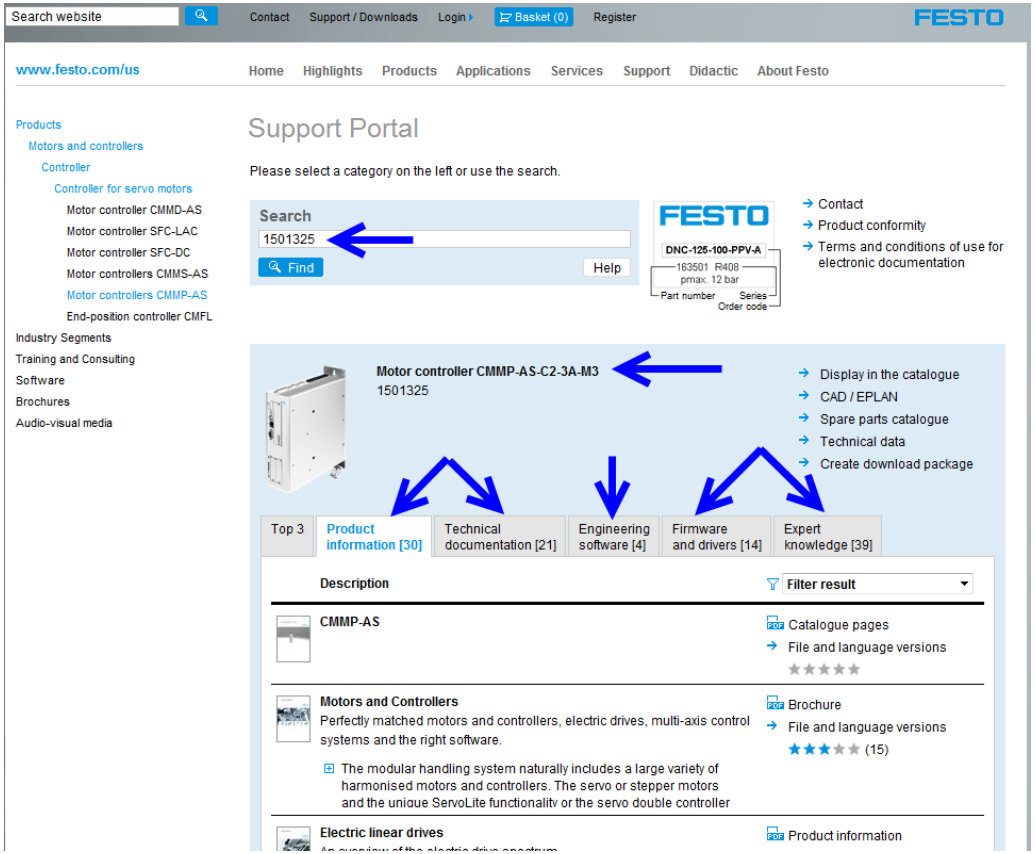
Important Notes

- ❑ All of the technical documents required for your controller can be found at the Festo Support/Downloads web page: http://www.festo.com/net/en-us_us/SupportPortal Simply type in your Drive/Controller Part# or Type code in the search box, then all the tabs below will provide all the information.
- ❑ Assure the CMMP-AS is correctly Wired & Grounded as described in this guide/user manuals
- ❑ Perform a FW (Firmware) update
- ❑ Perform an update of the FCT plugin to match the FW (Firmware)



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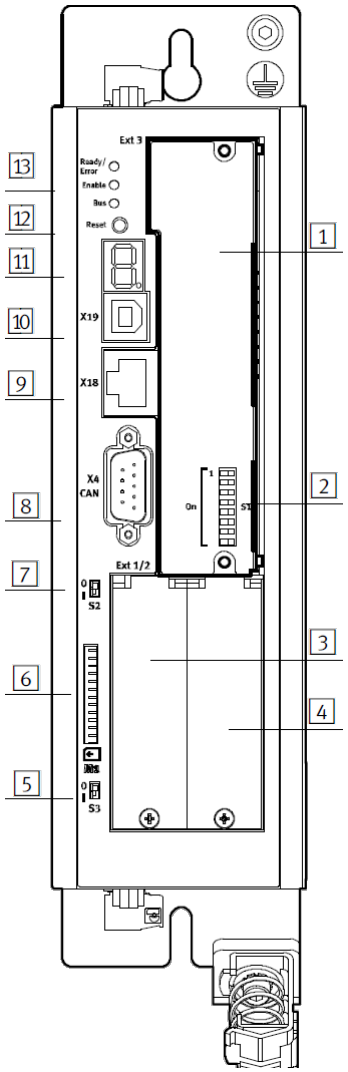
CMMP-AS-xx-M3 Device View - Front

1. Slot for switch or safety module [Ext3]
2. Fieldbus settings [S1]
3. Slot for extension modules [Ext1]
4. Slot for extension modules [Ext2]
5. Activation of firmware download [S3]
6. SD-/MMC card slot [M1]
7. Activation of CANopen terminating resistor [S2]
8. CANopen interface [X4]
9. Ethernet interface [X18]
10. USB interface [X19]
11. 7-segment display
12. Reset button
13. LEDs



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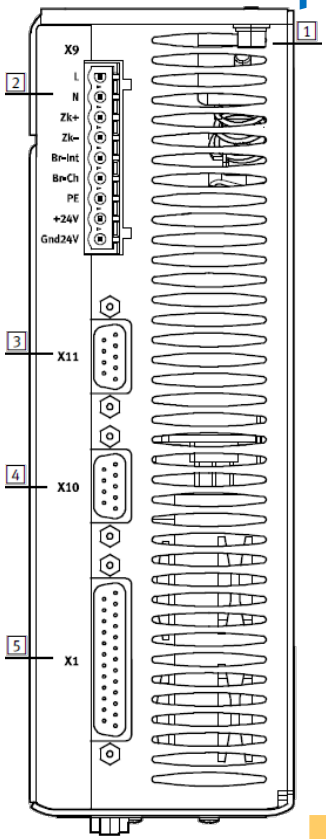
CMMP-AS-xx-M3 Device View – Top & Bottom

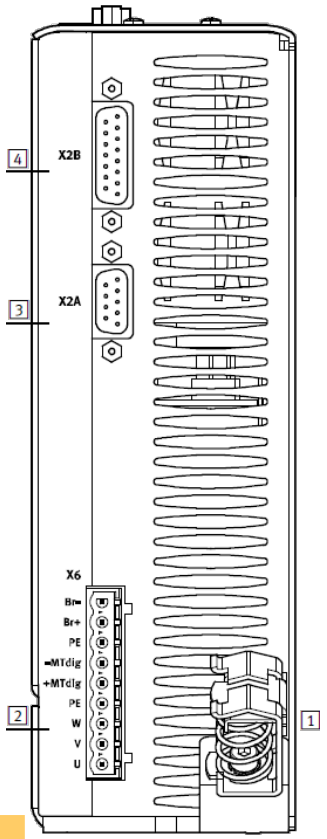
Top

1. PE connection
2. Power supply [X9]
3. Incremental encoder output [X11]
4. Incremental encoder input [X10]
5. I/O communication [X1]



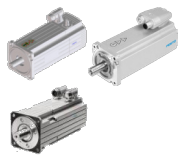
Bottom

1. Spring-loaded terminal connection for the outer shield of the motor cable
2. Motor connection [X6]
3. Connection for the resolver [X2A]
4. Connection for the encoder [X2B]



NOTE: **The CMMP-AS can control a variety of motors (Festo models shown here). The only difference is the type of feedback and the connection port. The motor cable (output) remains the same**

PORT	MOTOR	TYPE OF FEEDBACK
X2B	EMMS-AS EMME-AS	ANALOG INCREMENTAL ENCODER INCREMENTAL ENCODER WITH SERIAL INTERFACE (ENDAT) DIGITAL INCREMENTAL ENCODER
X2A	MTR-AC	RESOLVER



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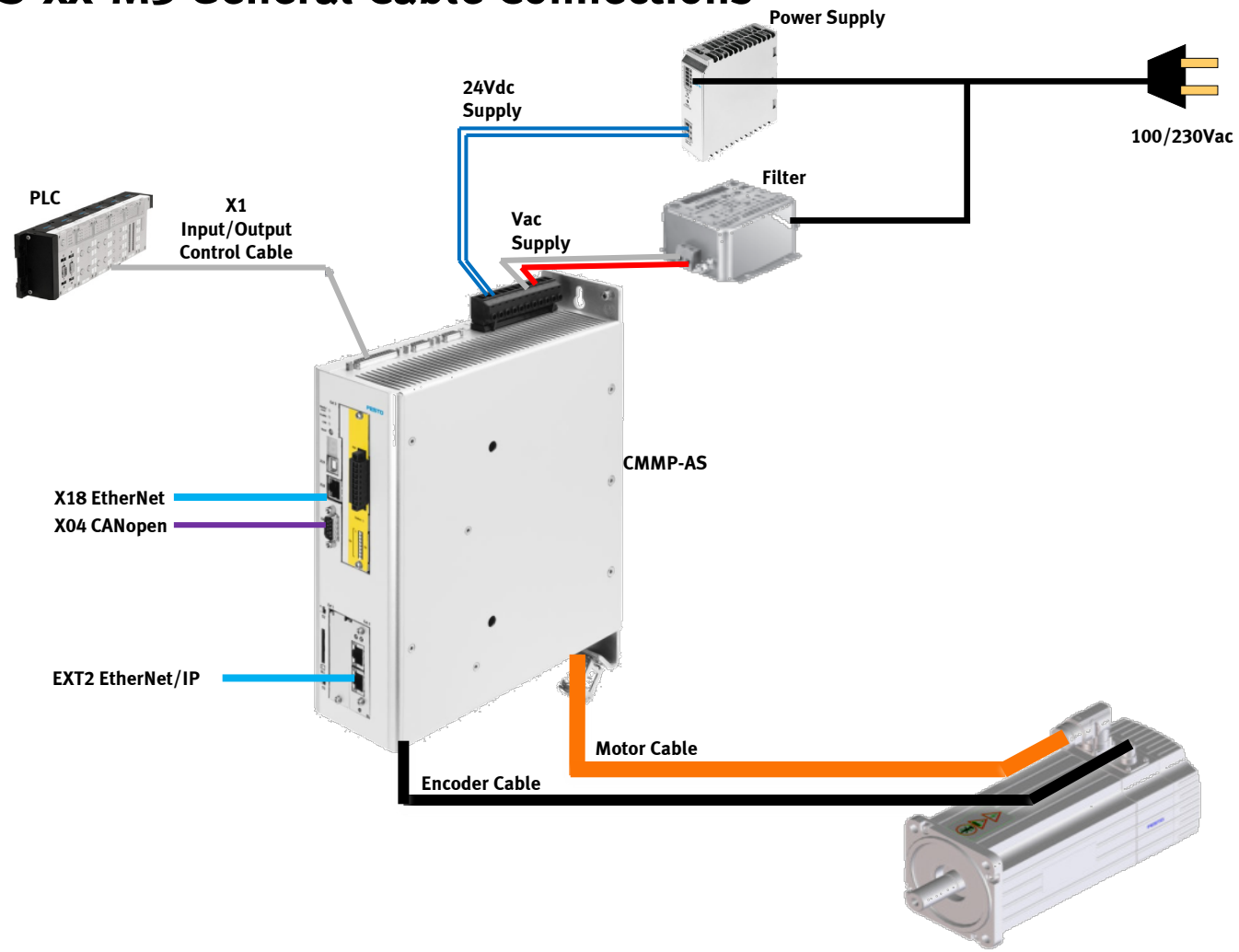
CMMP-AS-xx-M3 General Cable Connections



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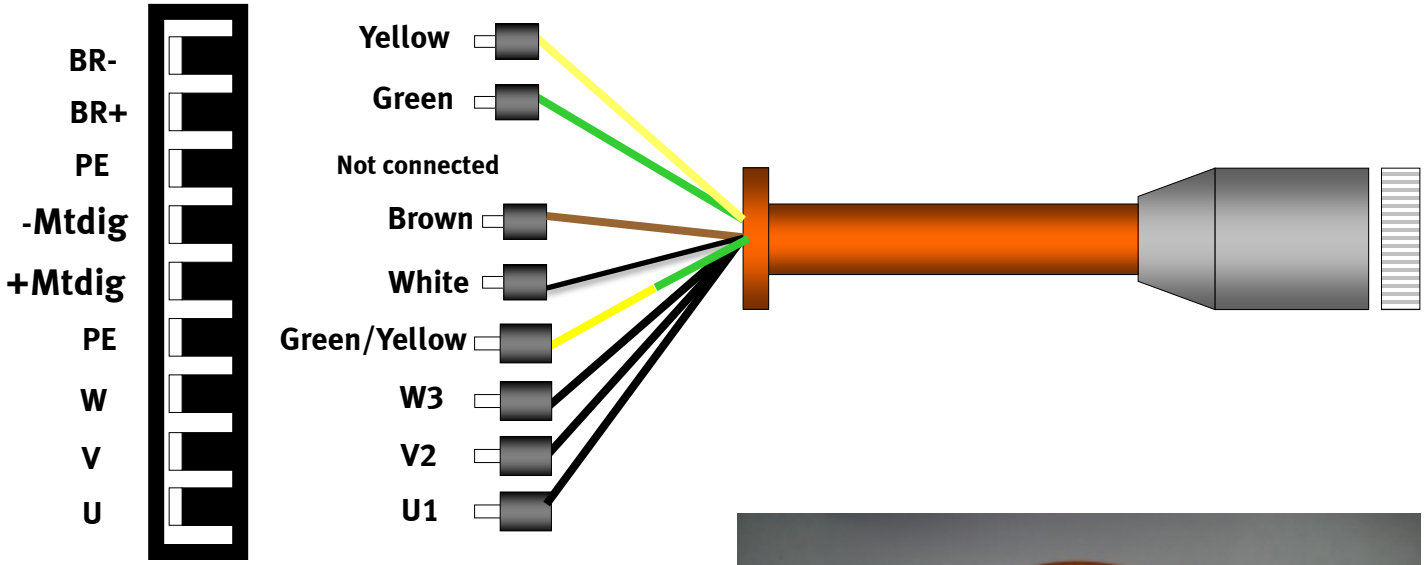
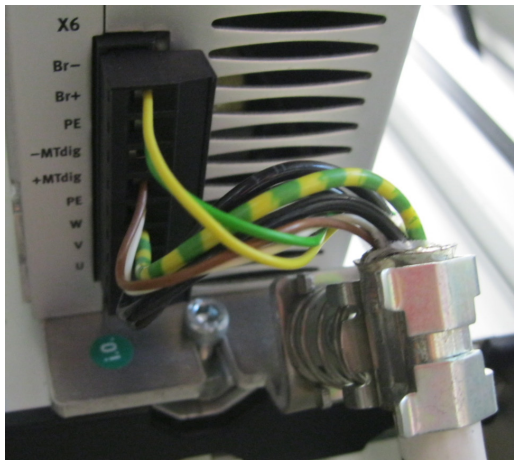
CMMP-AS-xx-M3 Motor Connection X6



BR- BR+	BRAKE SIGNAL
PE	
-MTdig +MTdig	TEMPERATURE SIGNAL
PE	
W V U	AC SERVO MOTOR



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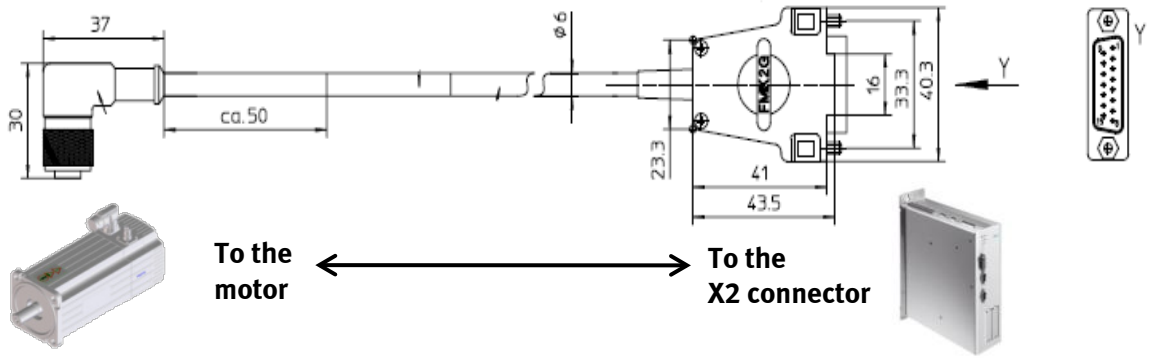
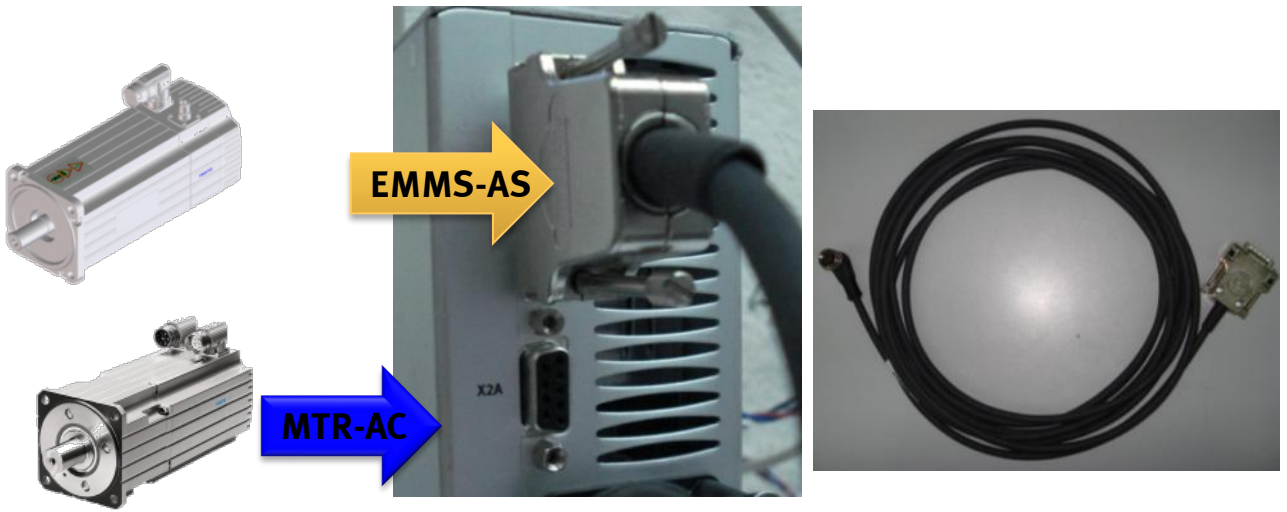
CMMP-AS-xx-M3 Encoder Connection X2





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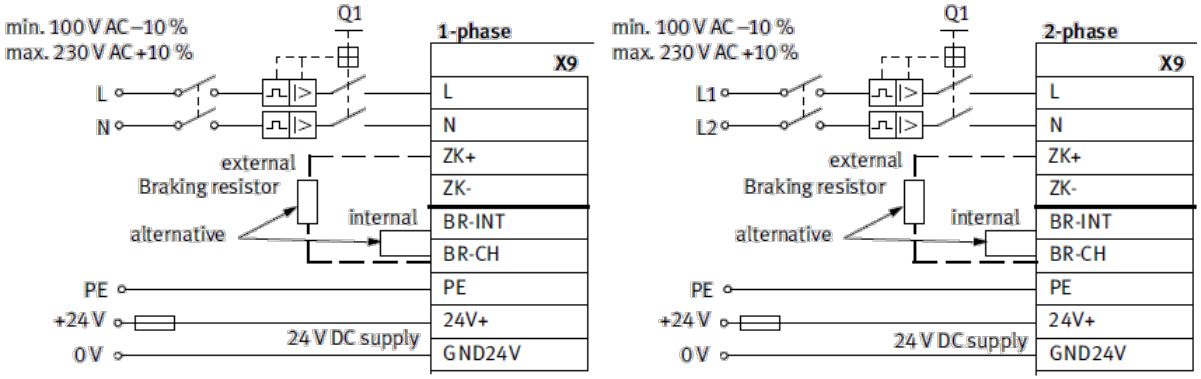
CMMP-AS-xx-M3 Power Supply Connection X9 (1 or 2 Phase)

NOTE ON THE BRAKING RESISTOR:

If no external braking resistor is used, confirm the installation of a jumper between **BR-INT** and **BR-CH** so that the intermediary circuit functions as a rapid discharge. (*See the manual for further information*)



CMMP-AS-3A-M3			
Pin #	**Designation**	**Value**	**Specification**
1	L	100 ... 230 VAC ±10%	Mains phase
2	N	50...60 Hz	Mains neutral conductor
3	ZK +	‹ 440 VDC	Positive intermediate circuit voltage
4	ZK -	GND_ZK	Negative intermediate circuit voltage
5	BR-INT	‹ 460 VDC	Internal braking resistor connection (bridge to BR-CH when using the internal resistor)
6	BR-CH	‹ 460 VDC	Brake chopper connection for internal braking resistance to BR-INT and external braking resistor to ZK+
7	PE	PE	Protective conductor from mains grid
8	+24V	+24 V [+6% -10%] / 2.5 A	24 V supply for control unit + stopping brake + I/O
9	GND24V	GND24	0 V supply reference potential

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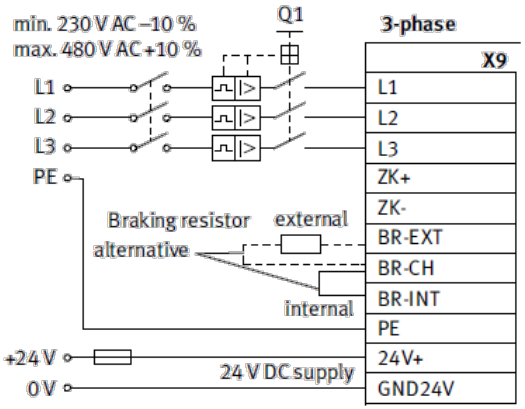
CMMP-AS-xx-M3 Power Supply Connection X9 (3 Phase)



NOTE ON THE BRAKING RESISTOR:
If no external braking resistor is used, confirm the installation of a jumper between **BR-INT** and **BR-CH** so that the intermediary circuit functions as a rapid discharge.
(*See the manual for further information*)

CMMP-AS-11A-M3			
Pin #	**Designation**	**Value**	**Specification**
1	L1	230...480 VAC ±10% 50...60 Hz	Mains phase 1
2	L2		Mains phase 2
3	L3		Mains phase 3
4	ZK +	< 700 VDC	Alternative supply: Positive intermediate circuit voltage
5	ZK -	GND_ZK	Alternative supply: Negative intermediate circuit voltage
6	BR-EXT	< 800 VDC	Connection of the external braking resistor
7	BR-CH	< 800 VDC	Brake chopper connection for - internal barking resistor with respect to BR-INT - external barking resistor with respect to BR-EXT
8	BR-INT	< 800 VDC	Internal braking resistor connection (bridge to BR-CH when using the internal resistor)
9	PE	PE	Mains grid protective earth connection
10	+24V	+24 V [+6% -10%] / 2.5 A	Supply for control unit (1 A) and holding brake (2 A)
11	GND24V	GND24	Supply reference potential

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CMMP-AS-xx-M3 Input/Output Connection X1

PIN #	COLOR	DESIGNATION	DESCRIPTION
1	PINK	AGND	Shield for Analog signals
2	WHITE	AIN0	Set point input 0, differential, 30V maximum
3	GREEN	AIN1	Set point input 1, single ended, 30V max (or DIN 12)
4	GREY	+VREF	Reference output for set point potentiometer
5	BLACK	AMON1	Analog monitor output 1
6	BROWN/BLACK	GND24	Reference potential for digital I/O's
7	WHITE/GREEN	DIN1	Record Select bit 1
8	WHITE/YELLOW	DIN3	Record Select bit 3
9	WHITE/GREY	DIN5	Controller Enable
10	WHITE/PINK	DIN7	Limit switch 1
11	WHITE/BLUE	DIN9	High speed input
12	WHITE/RED	DOUT1	Output freely programmable
13	WHITE/BLACK	DOUT3	Output freely programmable (or DIN 11)
14	RED & VIOLET - TWO SEPARATE WIRES	AGND	Reference potential for analog signals
15	BROWN	#AIN0	AIN0 differential input
16	YELLOW	AIN2	Set point input 1, single ended, 30V max (or DIN 13)
17	BLUE	AMON0	Analog monitor output 0
18	GREY/PINK	+24VDC	24Vdc **OUTPUT from controller**
19	RED/BLUE	DIN0	Record select bit 0
20	BROWN/GREEN	DIN2	Record select bit 2
21	BROWN/YELLOW	DIN4	Power End Stage Enable
22	BROWN/GREY	DIN6	Limit switch 0
23	BROWN/PINK	DIN8	Start Task
24	BROWN/BLUE	DOUT0	Ready output
25	BROWN/RED	DOUT2	Output freely programmable (or DIN 10)

The IO (Inputs/Outputs) for the CMMP-AS-...-M3 are the same as the Classic CMMP-AS

The colors in the figure correspond to the cable color code for FESTO control signals

Type: NEBC-S1G25-K-2.5N-LE26
Part#: 552254

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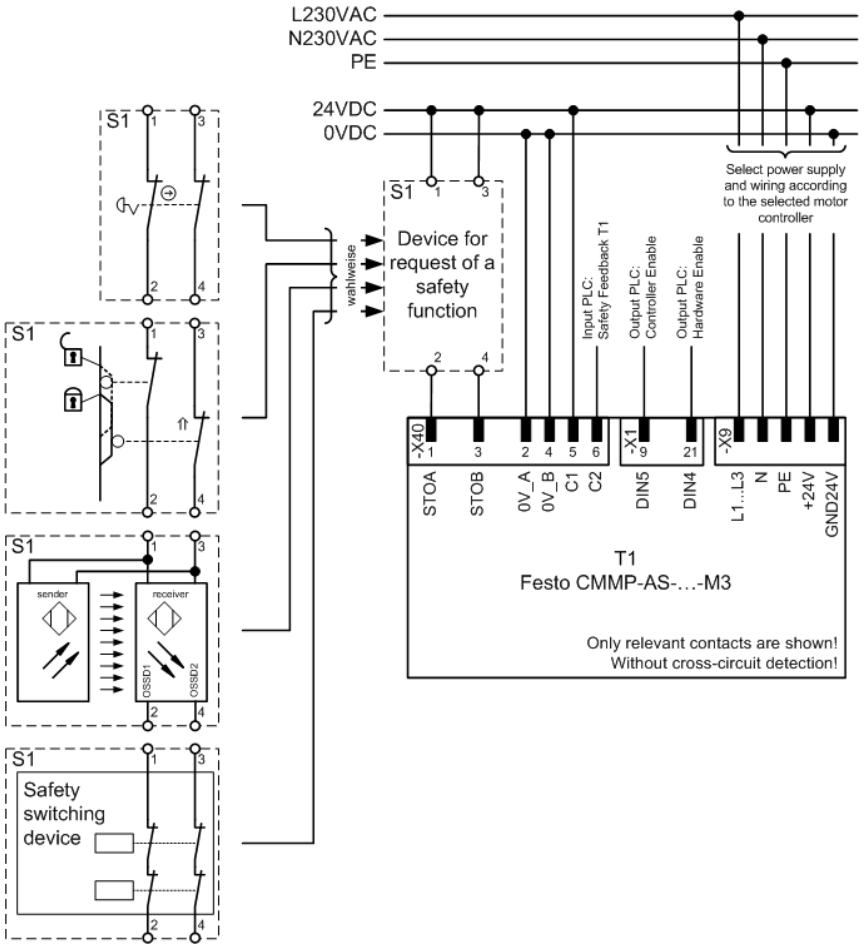
CMMP-AS-xx-M3 STO(Safe Torque Off) Connection EXT3



The CMMP-AS-M3 motor controllers have an Ext3 Slot.
This slot can be "optionally" equipped with an CAMC-G-S1 module. This is used for additional safety.
Wire this according to the manual GDCP-CAMC-G-S1-EN (759286.pdf) and your application requirements.
This connector can be temporarily bypassed as shown below.

Plug	Pin	Designation
8	8	0V
	7	24V
	6	C2
	5	C1
	4	0V-B
	3	STO-B
	2	0V-A
1	1	STO-A

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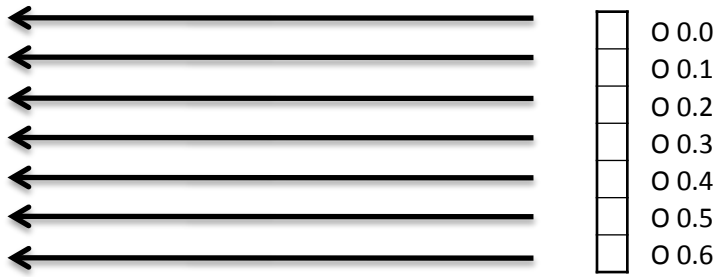
CMMP-AS-xx-M3 Example of Basic Connection for Digital I/O to a PLC

CMMP-AS ⟷ PLC

19	RED / BLUE	Din 0	POS Bit0	Position selection Bit0
7	GREEN / WHITE	Din 1	POS Bit1	Position selection Bit1
20	BROWN / GREEN	Din 2	POS Bit2	Position selection Bit2
8	YELLOW / WHITE	Din 3	POS Bit3	Position selection Bit3
21	BROWN / YELLOW	Din 4	FG_E	Enable output stage
9	GREY / WHITE	Din 5	FG_R	Enable control
23	BROWN / PINK	Din 8	Start	Input for initiating positioning function

PLC OUTPUTS

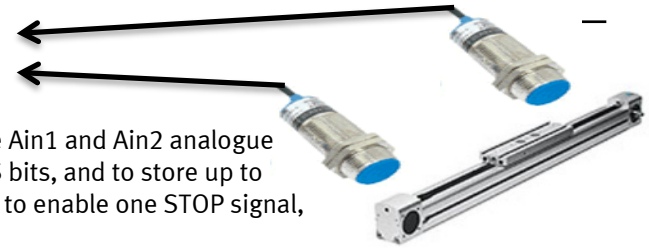


24	BROWN / BLUE	Dout 0	24 V / 100 mA (READY)	Output (system ready for operation)
12	RED / WHITE	Dout 1	24 V / 100 mA	Position Xact = Xdest
25	BROWN / RED	Dout 2	24 V / 100 mA	Acknowledge for Start Positioning
13	BLACK / WHITE	Dout 3	24 V / 100 mA	Alternative Target Reached

PLC INPUTS

22	BROWN / GREY	Din 6	END0	Input 0 limit sensor
10	WHITE / PINK	Din 7	END1	Input 1 limit sensor

External to sensors



Note: The CMMP-AS driver has the option of converting both the DOUT2 and 3 outputs and the Ain1 and Ain2 analogue signals to inputs Din 10 –Din 13, to have 8 POS bits addressed to the position instead of 4 POS bits, and to store up to 256 positions. Or 2 signals can be used to implement JOGGING movements JOG + and JOG -. Or to enable one STOP signal, etc. (*See the manual for further information*)