

# SMD5206

## Stepper Motor Drive



### Models

Model	Control(*)	Fieldbus	Peak current	Nominal current
SMD5206xUM	SD / D / SA	-	max 8,5A	max. 8A
SMD5206xIM	SD / D / SA / M	Modbus RTU		
SMD5206xIC	SD / D / SA / M	CANopen		
SMD5206xIP	SD / D / SA / M	Profibus DP		
SMD5206xIE	SD / D / SA / M	Modbus TCP		
SMD5206xIT	SD / D / SA / M	EtherCAT		
SMD5206xIN	SD / D / SA / M	Profinet		

\* SD = Step/Dir; D = Direct; SA = Stand-Alone; M = Mixed



Electrical characteristics		U.M.	SMD5206Lxx	SMD5206Hxx
Power Supply (HVdc)	Voltage range	Vdc	+24 .. 85	+24 .. 135
	Nominal voltage	Vdc	+65	+120
	Peak current	A	motor current +10%	
Logic Supply (LVdc)	Voltage range	Vdc	+24 .. 85	+24 .. 135
	Current	A	0,7	
Output current	Nominal current (sinusoidal)	A <sub>RMS</sub>	configurable via software max. 8A	
	Peak current	A	max 8,5A	
	BOOST current	A	max 8,5A	
Auxiliary supply (Output stage)	Voltage range	Vdc	+24Vdc +/- 10%	
	Current	A	1	
Current control	Type		Bipolare PWM	
	Frequency	KHz	20 (50 µs)	
	PWM outputs		Dual MOSFET H-bridges, 20 KHz center-weighted PWM field oriented space-vector modulation	
General purpose digital inputs	Number		8 + 8	
	Type		PNP TTL compatible until + 30 Vdc	
	"High" / "Low" level threshold	Vdc	+12V default 2,2V threshold configurable through StepControl	
General purpose digital outputs	Number		8	
	Type		PNP + 24 VDC	
	Current	mA	100 each channe	
	Protection		Temperature, short-circuit	
Service digital inputs	Number		8	
	Type		PNP TTL compatible until + 30 Vdc	
	Absorbed current	mA	8	
	"High" / "Low" level threshold	Vdc	+12V default 2,5V threshold if connected in differential	
	Characteristics		High speed inputs (max 70KHz, D.C. 50%)	
Analog input	Number		1	
	Resolution	bit	12	
	Range	Vdc	0 .. +10	
Analog output	Number		1	
	Resolution	bit	10	
	Range	Vdc	0 .. +10	



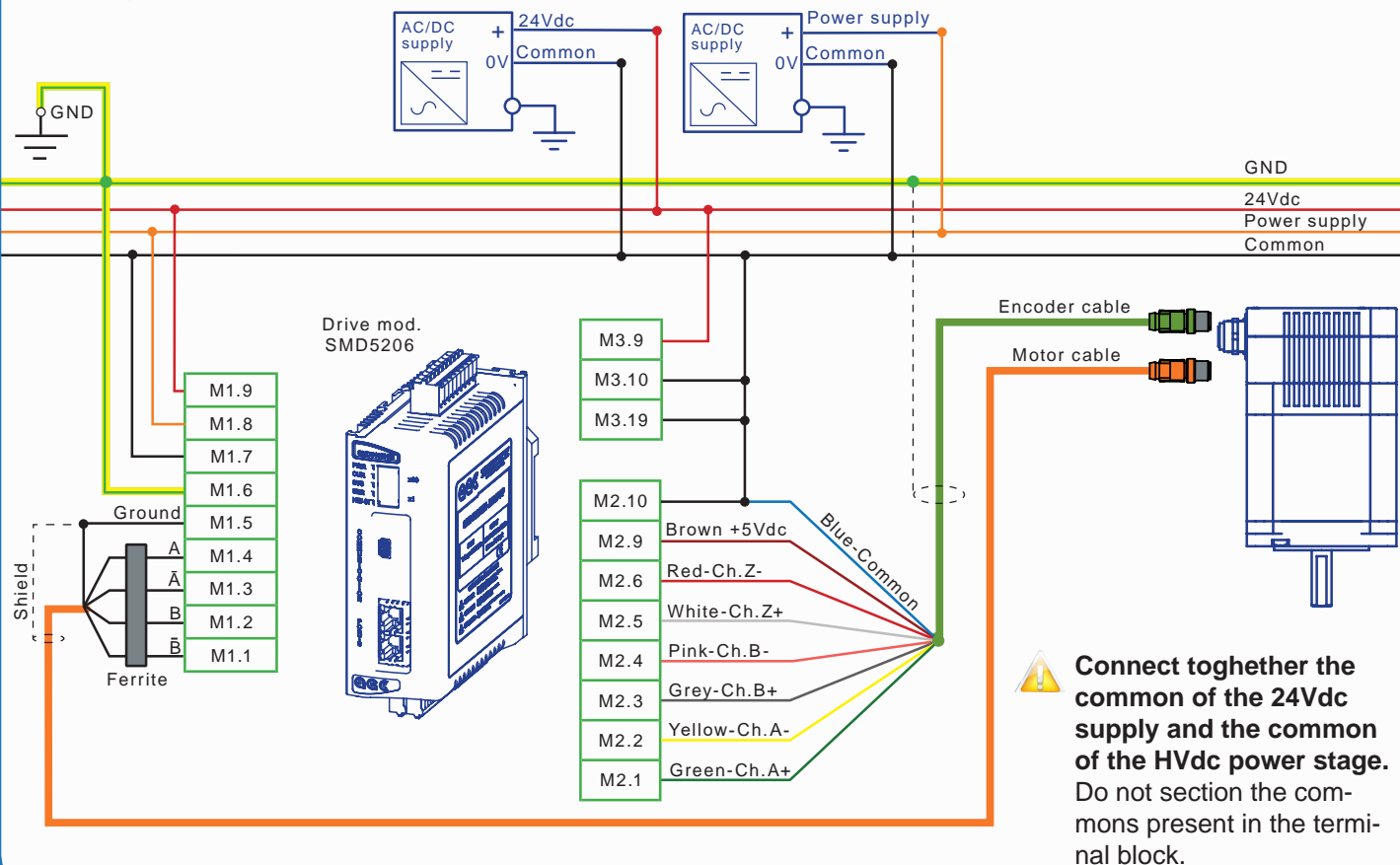
**-The SMD5206 must be supplied only with DC current, at the voltage specified in the "Electrical characteristics" table.**

**It is advisable to use a transformer and a converter mod. AL1120 or AL2620.**

# SMD5206

## Stepper Motor Drive

### Wiring scheme

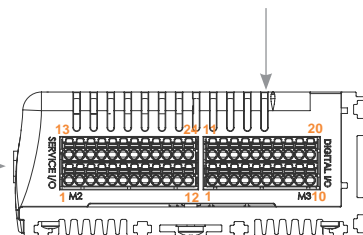
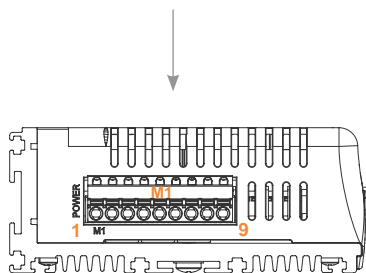


### Terminal blocks

Pin	Signal name	Description
1	Phase B-	Motor Phase B-
2	Phase B	Motor Phase B
3	Phase A-	Motor Phase A-
4	Phase A	Motor Phase A
5	Ground	Ground
6	Ground	Ground
7	Common	DC supply common reference
8	Power supply	Power stage DC supply input
9	Logic supply	Logic stage DC supply input/output

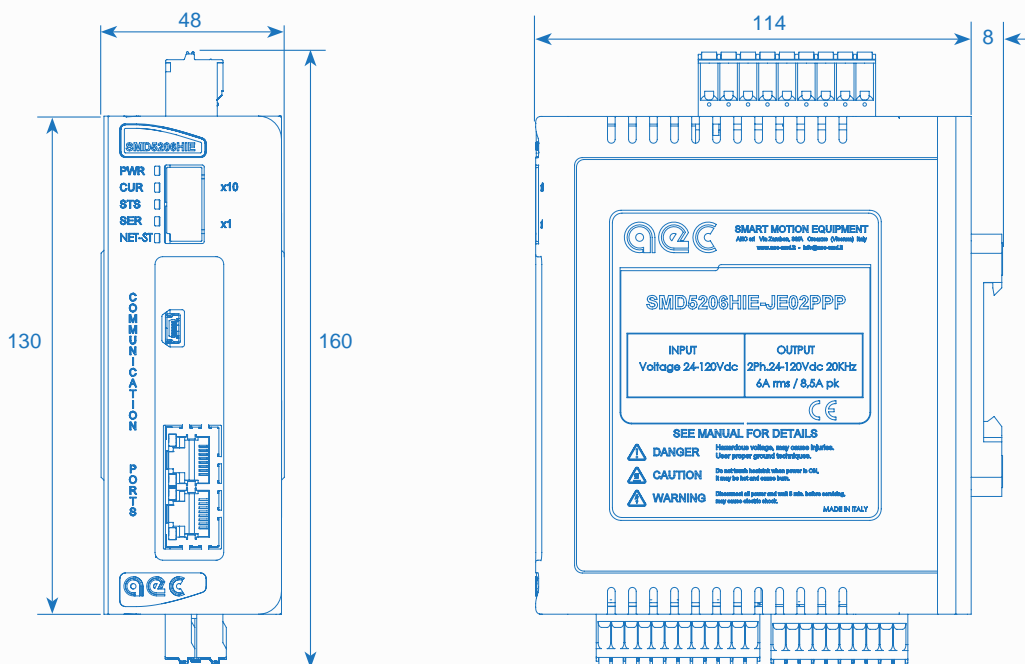
Pin	Signal name	Description
1	Motor encoder A+	Motor encoder channel A+
2	Motor encoder A-	Motor encoder channel A-
3	Motor encoder B+	Motor encoder channel B+
4	Motor encoder B-	Motor encoder channel B-
5	Motor encoder Z+	Motor encoder channel Z+
6	Motor encoder Z-	Motor encoder channel Z-
7	Forward Limit Switch	Forward Limit Switch
8	Backward Limit Switch	Backward Limit Switch
9	V External supply	5Vdc@100mA output, for the supply of the encoder
10	External Common	Isolated output "V External supply" common
11	Aux.encoder A+	Auxiliary encoder channel A+
12	Aux.encoder B+	Auxiliary encoder channel B+
13	Encoder output A+	Motor encoder channel A+ output
14	Encoder output A-	Motor encoder channel A- output
15	Encoder output B+	Motor encoder channel B+ output
16	Encoder output B-	Motor encoder channel B- output
17	Encoder output Z+	Motor encoder channel Z+ output
18	Encoder output Z-	Motor encoder channel Z- output
19	Aux.encoder Z+	Auxiliary encoder channel Z+
20	Aux.encoder Z-	Auxiliary encoder channel Z-
21	AN_Output 0	Analog output 0 (0-10Vdc)
22	Analog Common	Analog I/O common
23	Aux.encoder A-	Auxiliary encoder channel A-
24	Aux.encoder B-	Auxiliary encoder channel B-

Pin	Signal name	Description
1 <sup>a</sup>	Input/Output 0	General purpose input/output nr. 0
2 <sup>a</sup>	Input/Output 1	General purpose input/output nr. 1
3 <sup>a</sup>	Input/Output 2	General purpose input/output nr. 2
4 <sup>a</sup>	Input/Output 3	General purpose input/output nr. 3
5 <sup>a</sup>	Input/Output 4	General purpose input/output nr. 4
6 <sup>a</sup>	Input/Output 5	General purpose input/output nr. 5
7 <sup>a</sup>	Input/Output 6	General purpose input/output nr. 6
8 <sup>a</sup>	Input/Output 7	General purpose input/output nr. 7
9	Power input	Power input of the output stage
10	Common	Digital inputs common
11	Input 8	General purpose input nr. 8
12	Input 9	General purpose input nr. 9
13	Input 10	General purpose input nr. 10
14	Input 11	General purpose input nr. 11
15	Input 12	General purpose input nr. 12
16	Input 13	General purpose input nr. 13
17	Input 14	General purpose input nr. 14
18	Input 15	General purpose input nr. 15
19	Analog Common	Anlogue I/O common
20	AN_Input	Analog input (0-10Vdc)



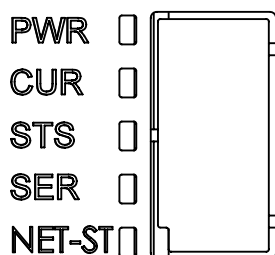
**N.B. : The limit switch inputs are referred to the common of digital inputs M3.10**

## Mechanical dimensions



Dimensions are expressed in mm

## Status LED indicators



LED name	Color	Description
<b>PWR</b> (Power supply)	Off	The drive is not supplied.
	Green	The logic stage of the drive is supplied.
<b>CUR</b> (Current to the motor)	Off	No current to the motor.
	Green	Nominal current to the motor.
	Orange	Reduced current to the motor.
	Red	BOOST current during the ramps.
<b>STS</b> (Drive status)	Off	Logic stage error.
	Green	Drive is OK.
	Orange	Overtemperature alarm.
	Red (fixed)	Active alarm (check the alarm type with StepControl).
	Red (blinking)	Power stage overvoltage or undervoltage alarm.
<b>SER</b> (Communication)	Off	Modbus serial communication in progress through USB port.
	Orange (blinking)	Communication in progress through USB port.
<b>NET-ST</b> (Fieldbus)		See the manual of the protocol.

## Bus connectors

MODBUS RTU (SMD5206xIM-xxx)		
	Pin	Description
	1	Shield
	2	Data TX (RS-232)
	3	Data RX (RS-232)
	4	Not connected
	5	Common
	6	Not connected
	7	Data + (RS-485)
	8	Data - (RS-485)

CAN-OPEN (SMD5206xC-xxx)		
	Pin	Description
	1	CAN H line
	2	CAN L line
	3	CAN_GND
	4	Reserved
	5	Reserved
	6	CAN Shield
	7	CAN_GND
	8	Reserved

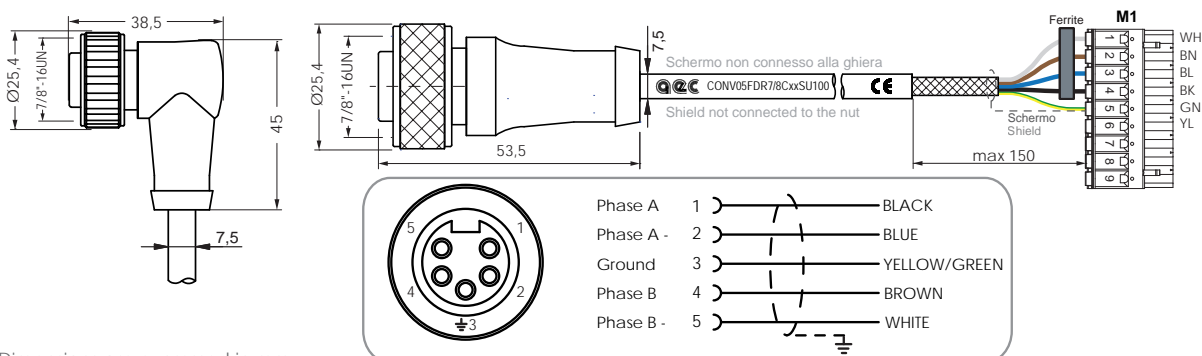
PROFIBUS (SMD5206xIP-Dxxx)		
DB9 Femmina	Pin	Description
	1	Shield
	2	Reserved
	3	B Line red (positive)
	4	Reserved
	5	DGND (digital mass)
	6	Out +5V
	7	Reserved
	8	A Line green (negative)
	9	Reserved

**CAUTION:** If the mode 8 of the drive is in use (it is possible to verify it with StepControl, register "Rcanmodeoperation"), it is necessary to set the maximum step resolution, in order to have a smooth and noiseless movement.

For information on slot arrangement, refer to the protocol manual.

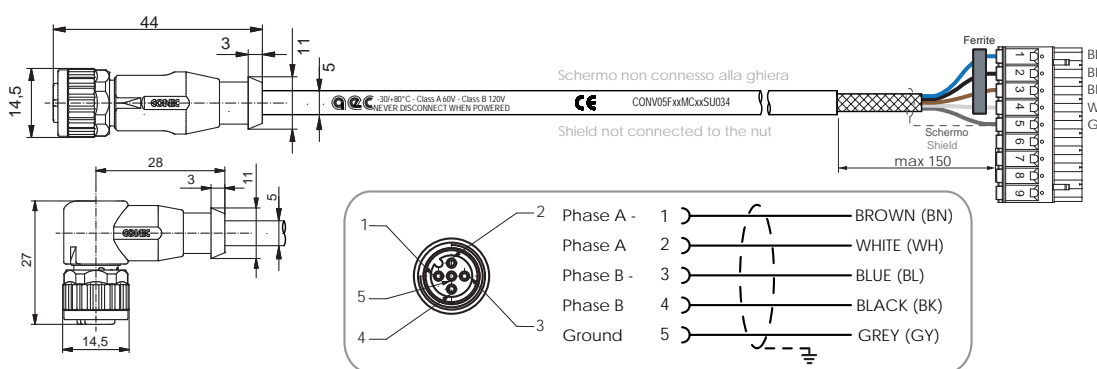
### 7/8" MOTOR CONNECTION CABLE: CONV05FDR7/8Cxxx

Shielded dynamic laying cables with 7/8" female connector, for stepper motors series M86SHxx and M110SHxx.



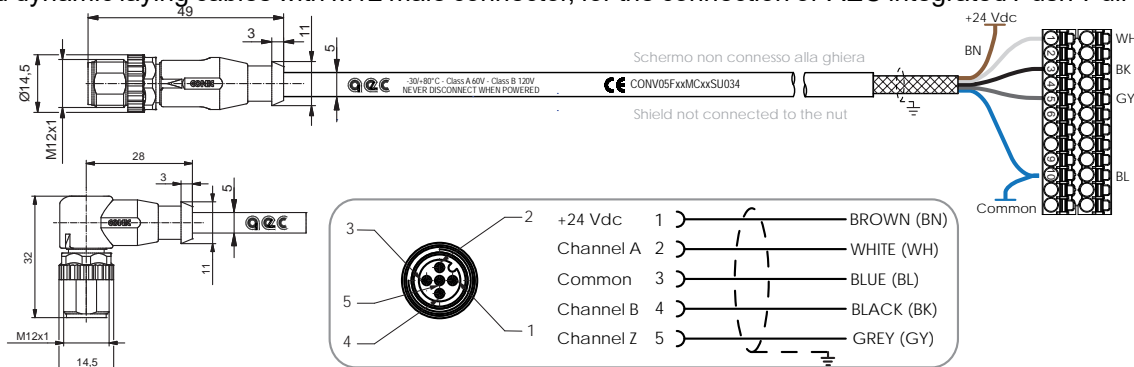
### M12 MOTOR CONNECTION CABLE: CONV05FxxM12Cxxx

Shielded dynamic laying cables with M12 female connector, for stepper motors series M42SHxx, M57SHxx and M60SHxx.



### M12 PUSH-PULL ENCODER CONNECTION CABLE: CONV05MxxM12Cxxx

Shielded dynamic laying cables with M12 male connector, for the connection of AEC integrated Push-Pull encoders.



### M12 LINE DRIVER ENCODER CONNECTION CABLE: CONV05MxxM12Cxxx

Shielded dynamic laying cables with M12 female connector, for the connection of AEC integrated Line Driver encoders

