

## Models

Model	Control <sup>(*)</sup>	Fieldbus	Peak current (A)	Nominal current (A)	Nominal voltage (Vdc)
SMD1104LUM	SD / SA	-	8.5	6	65
SMD1104LIM	SD / D / SA / M	Modbus RTU	8.5	6	65
SMD1104LIC	SD / D / SA / M	CANopen	8.5	6	65
SMD1104LIP	SD / D / SA / M	Profibus DP	8.5	6	65

### Notes:

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



Electrical characteristics		U.M.	SMD1104Lxx
Output current	Nominal current (sinusoidal)	A <sub>RMS</sub>	6
	Peak current (A)	A <sub>RMS</sub>	8.5
	BOOST current	A <sub>RMS</sub>	8.5
Power Supply	Voltage range	VDC	+24 .. 85
	Nominal voltage	VDC	+65
	RMS current	A <sub>RMS</sub>	2
	Peak current	A <sub>RMS</sub>	6
Logic Supply	Voltage range	VDC	+24 .. 85
	Current	A	0,6
Auxiliary supply (Input/Output stage)	Voltage range	VDC	+24
	Current	A	2,8 max
Current control	Type		Bipolar 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		7 <sup>a</sup> +3 <sup>b</sup> (see notes a, b)
	Type		PNP TTL compatible up to + 30 Vdc (NPN upon request)
	"High" / "Low" threshold	VDC	+12V default 2,2V threshold configurable through StepControl
General purpose digital outputs	Number		1+3 <sup>b</sup> (see notes a,b)
	Type		PNP + 24 VDC
	Current	mA	100 each
	Protection		Temperature, short-circuit
Service digital inputs	Number		6 <sup>a</sup> (see note a)
	Type		PNP TTL compatible up to + 30 Vdc (NPN upon request)
	Absorbed current	mA	8
	"High" / "Low" threshold	VDC	+12V default 2,2V threshold configurable through StepControl
	Notes		High speed inputs
Analog input	Number		3 <sup>b</sup> (see note b)
	Resolution	bit	12
	Range	Vdc	0 .. +10

### Notes:

<sup>a</sup> The general purpose inputs share the same pin-out with the service inputs.

<sup>b</sup> Available only for SMD11.04Lxx-02xx versions. Two digital inputs and two analog inputs share the same pin-out.



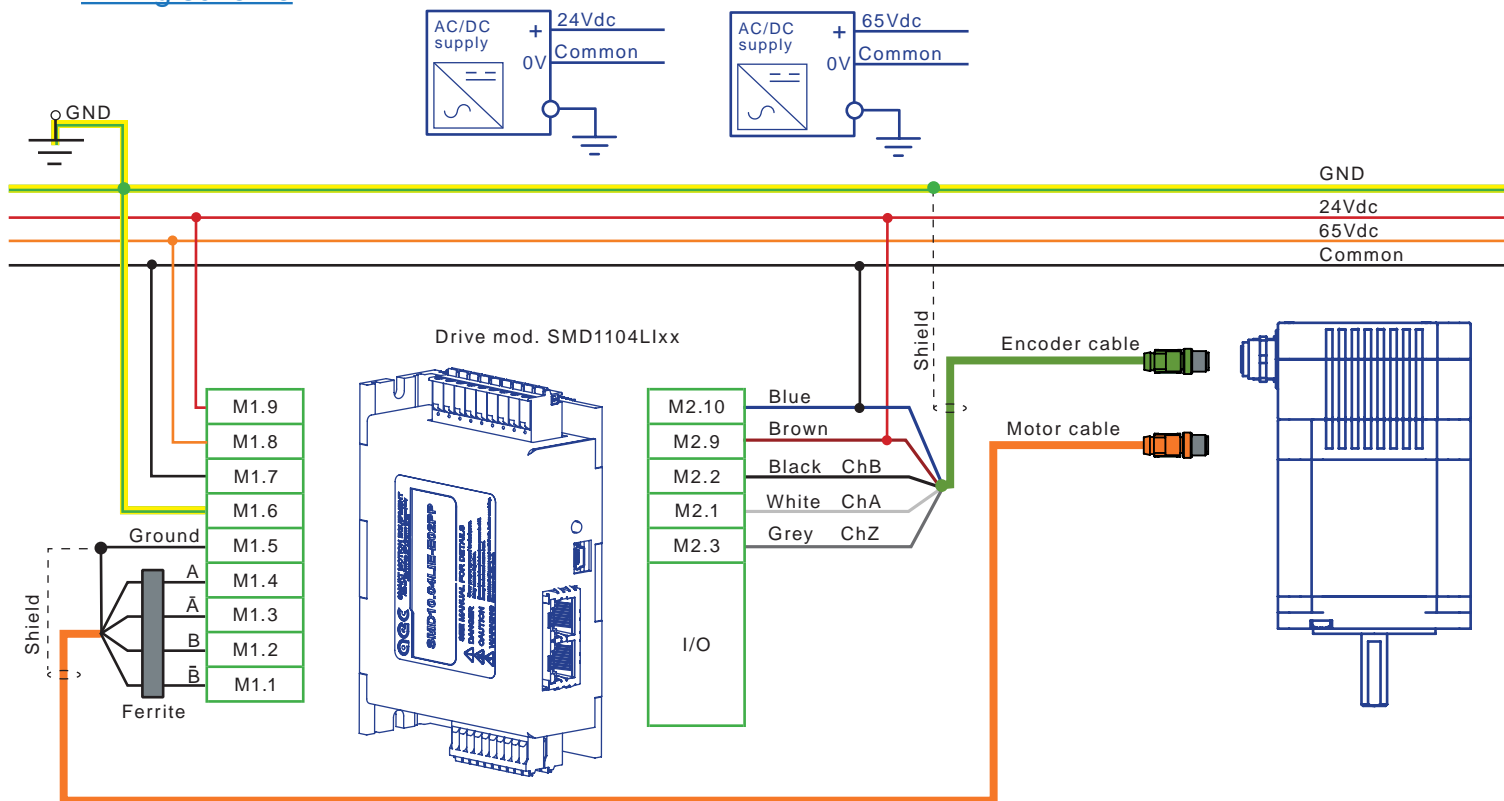
**Digital inputs and service inputs share the same input pins.**



**The SMD1104 must be supplied only with DC current, at the voltage specified in the "Models" table. It is advisable to use a transformer and a converter mod. AL1120 or AL2620.**

# SMD1104Lix Stepping Motor Drive

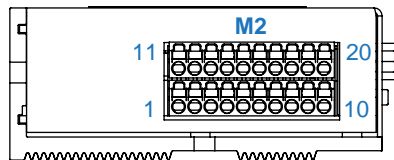
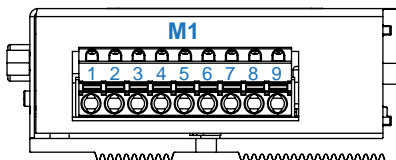
## Wiring scheme



Connect together the commons of power supply and signals present in the terminal blocks.

## Terminal blocks

M1		
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



M2		
Pin	Signal name	Description
1	Motor encoder A / Inp5	Motor enc. Channel A / Digital input 5
2	Motor encoder B / Inp6	Motor enc. Channel B / Digital input 6
3	Motor encoder Z / TOP / Inp7	Motor enc. Channel Z / TOP input / Digital input 7
4	Aux encoder A / FLS / Inp8	Aux enc. Channel A / Forward Limit Switch / Digital input 8
5	Aux encoder B / BLS / Inp9	Aux enc. Channel B / Backward Limit Switch / Digital input 9
6	Aux encoder Z / Inp0	Aux enc. Channel Z / Digital input 0
7	Digital input 1	Digital input 1
8	Digital output 0	Digital output 0
9	Service Power input (+24V <sub>DC</sub> )	+24V <sub>DC</sub> auxiliary power input
10	Common ground	Inputs/outputs common
11	Digital output 1	Digital output 1
12	Analog common ground	Analog inputs common ground
13	Analogue input	Analogue input
14	Ana. inp. 1 / Out 2	Analogue input 1 / Digital output 2
15	Ana. inp. 2 / Out 3	Analogue input 2 Digital output 3
16	+5 VDC out (max 100mA)	+5 VDC output (max 100 mA)
17	Digital input 2	Digital input 2
18	Digital input 3	Digital input 3
19	Digital input 4	Digital input 4
20	Common ground	Inputs/outputs common

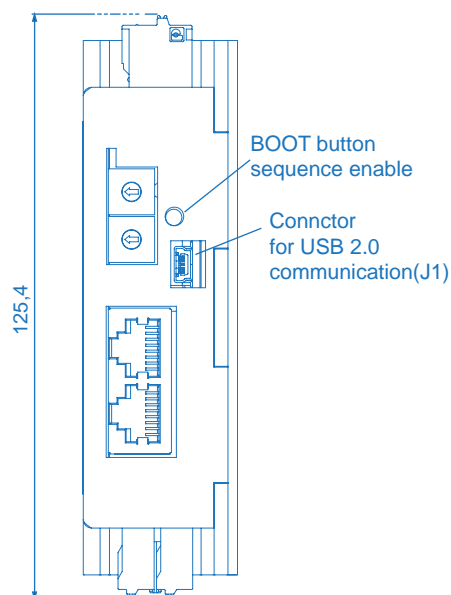
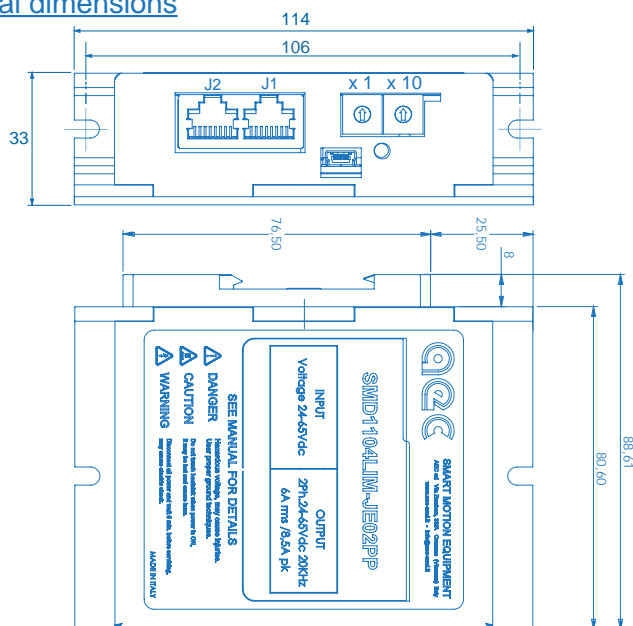
only SMD1104xxx-xE02xx versions



**Attention!!! Before connecting or disconnecting the terminal blocks and the connectors, make sure that the voltage is switched off, and that the capacitors of the supply stage are discharged.**

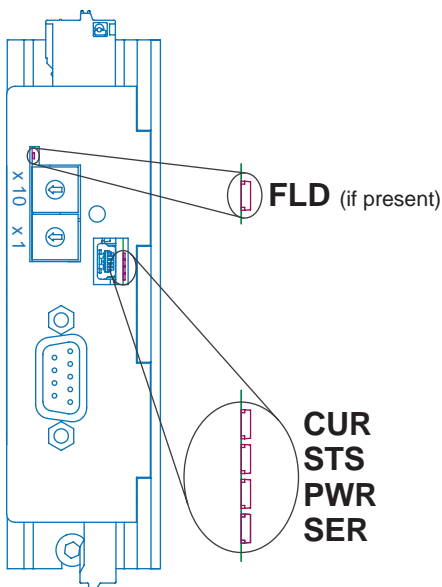
***The insertion of a contact while the drive is enabled causes the distruction of the contact itself.***

## 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	No Modbus serial communication in progress.
	Orange (blinking)	Modbus serial communication in progress through USB port.
<b>FLD</b> (Fieldbus)		See the manual of the protocol.

## Protocol connector (if present)

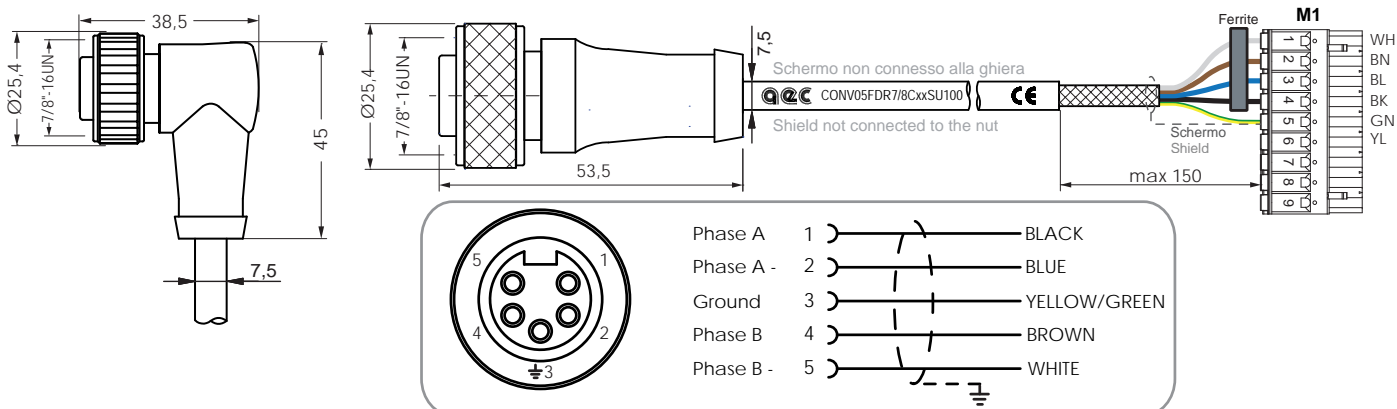
MODBUS RTU (SMD1104LIM-xxx)			
DB9 Female	Pin	Description	
	1	Shield	
	2	Data TX (RS-232)	
	3	Data RX (RS-232)	
	4	Not connected	
	5	Common	
	6	Not connected	
	7	Data + (RS-485)	
	8	Data - (RS-485)	
	9	Common	
RJ45 Female	Pin	Description	
	1	Shield	
	2	Data TX (RS-232)	
	3	Data RX (RS-232)	
	4	Not connected	
	5	Common	
	6	Not connected	
	7	Data + (RS-485)	
	8	Data - (RS-485)	

CAN-OPEN (SMD1104LIC-xxx)			
DB9 Male	Pin	Description	
	1	Reserved	
	2	CAN L Line	
	3	CAN_GND	
	4	Reserved	
	5	CAN Shield	
	6	Reserved	
	7	CAN H Line	
	8	Reserved	
	9	Reserved	
RJ45 Female	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 (SMD1104LIP-Dxxx)			
DB9 Female	Pin	Description	
	1	Shield	
	2	Reserved	
	3	B Line red (positive)	
	4	Reserved	
	5	DGND (Digitale ground)	
	6	Out +5V	
	7	Reserved	
	8	A Line green (negative)	
	9	Reserved	

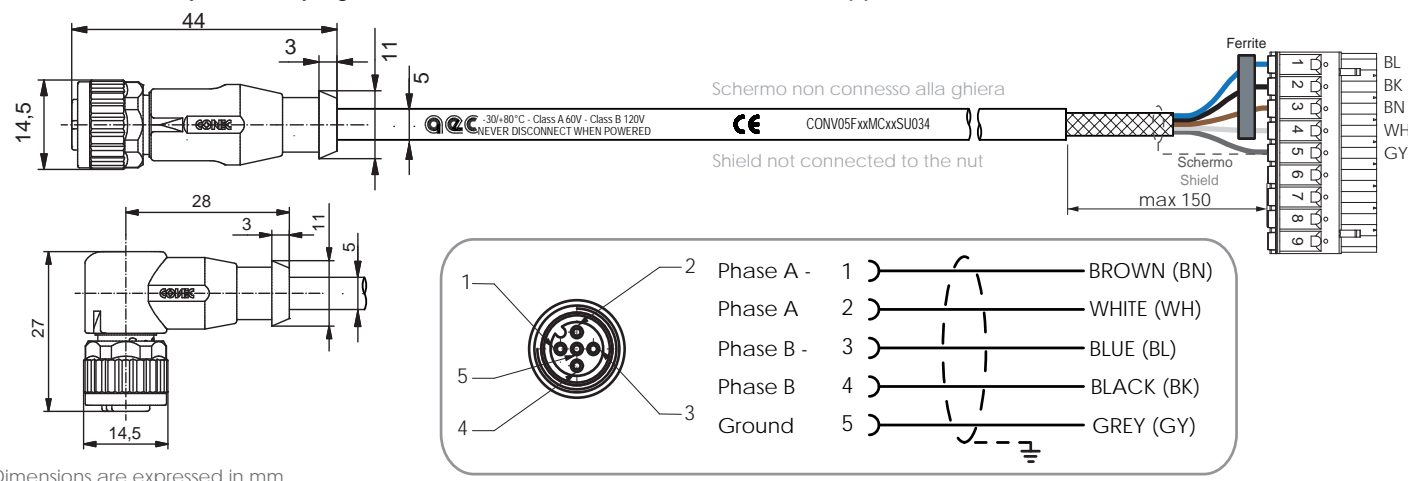
## 7/8" MOTOR CONNECTION CABLE: CONV05FDR7/8Cxxx

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



## M12 MOTOR CONNECTION CABLE: CONV05FxxM12Cxxx

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



## M12 PUSH PULL ENOCDER CONNECTION CABLE: CONV05MxxM12Cxxx

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

