

dDrive
by Rossi

Rossi
Habasit Group



Product Datasheet

Rossi decentralized inverter

General technical data for 400 V devices



Size	A					B				C ⁷⁾	
Recommended motor rating ¹⁾ [kW]	0.55	0.75	1.1	1.5	2.2 LD ⁵⁾	2.2	3	4	5.5 LD ⁵⁾	5.5	7.5
Supply voltage	3x200 V AC -10%...480 V AC +10% 280 V DC -10%...680 V DC +10% ²⁾										
Grid frequency	50/60 Hz ± 6%										
Network configurations	TN / TT										
Line current [A]	1.4	1.9	2.6	3.3	3.9	4.6	6.2	7.9	9.3	10.8	13.8
Rated current output eff. [IN at 4 kHz]	1.7	2.3	3.1	4	4.8	5.6	7.5	9.5	11	13	16.5
Min. brake resistance [Ω]	100					50					
Overload for 60 sec. [%]	150				110	150			110	150	
Overload for 3 sec. [%]	200				150	200			150	200	
Switching frequency	Auto regardless of temperature, 2 kHz, 4 kHz, 6 kHz, 8 kHz, 12 kHz, 16 kHz (factory setting 4 kHz)										
Output frequency	0 Hz – 599 Hz										
Mains cycles of operation / restart	Unlimited ³⁾										
DIN EN 61800-5 touch current	< 3,5 mA ⁴⁾										
Protective function	Overvoltage and undervoltage, I ² t restriction, short-circuit, ground leak, motor and drive controller temperature, stall prevention, blocking detection										
Software functions	Torque control ⁶⁾ , multiple pumps, fixed frequencies, data record changeover, flying restart, motor current limit										
Housing	Two-part aluminum die-cast casing										
Dimensions [L x W x H] mm	233 x 153 x 120					270 x 189 x 140				307 x 223 x 181	
Weight including adapter plate [kg]	3.9					5.0				8.7	
Protection class [IP xy]	IP 65										
Cooling	Passive Cooling										
Ambient temperature	-40 °C...+50 °C										
Storage temperature	-40 °C...+85 °C										
Altitude of the installation location	Up to 1000m above sea level / over 1000m with reduced performance (1 % per 100 m) / above 2000 m see operating manual										
Relative air humidity	≤ 96 %, condensation not permitted.										
Vibration class (DIN EN 60721-3-3)	3M7 (3g)										
EMC (DIN-EN-61800-3)	C2										
Certificates and conformity											



Designation	Function
Digital inputs 1 – 3	Switching level low < 2 V / high > 18 V I _{max} (at 24 V) = 3 mA R _{in} = 8.6 KOhm
Analogue inputs 1	In +/- 10 V In 2 – 10 V 10-bit resolution Tolerance +/- 2 % Voltage input: - R _{in} = 10 KOhm Current input: - Working resistance = 500 Ohm
Digital outputs 1	Short-circuit proof I _{max} = 20 mA
Power supply 24 V	Auxiliary voltage U = 24 V DC SELV Short-circuit proof I _{max} = 100 mA
Power supply 10 V	Auxiliary voltage U = 10 V DC Short-circuit proof I _{max} = 30 mA

Specification of interfaces

Derating of output power

Drive controllers of our decentralized inverter series have two integrated PTC resistors as standard which monitor both the heat sink temperature and the inner temperature. As soon as a permissible IGBT temperature of 95 °C or a permissible inner temperature of 85 °C is exceeded, the drive controller shuts down.

The drive controllers are designed for an overload of 150 % for 60 sec and 200 % for 3 s (every 10 min).

Reductions in the ability to handle overload and/or its duration should be considered in the following circumstances:

- A clocking frequency permanently set too high >4 kHz (load-dependent).
- A permanently increased heat sink temperature, caused by a blocked air flow or a thermal blockage (dirty cooling ribs).
- Depending on the type of assembly, permanently excessive ambient temperature.

The respective max. output values can be determined from the following characteristic curves.

Inverter Accessories Datasheet

1- Bluetooth Stick



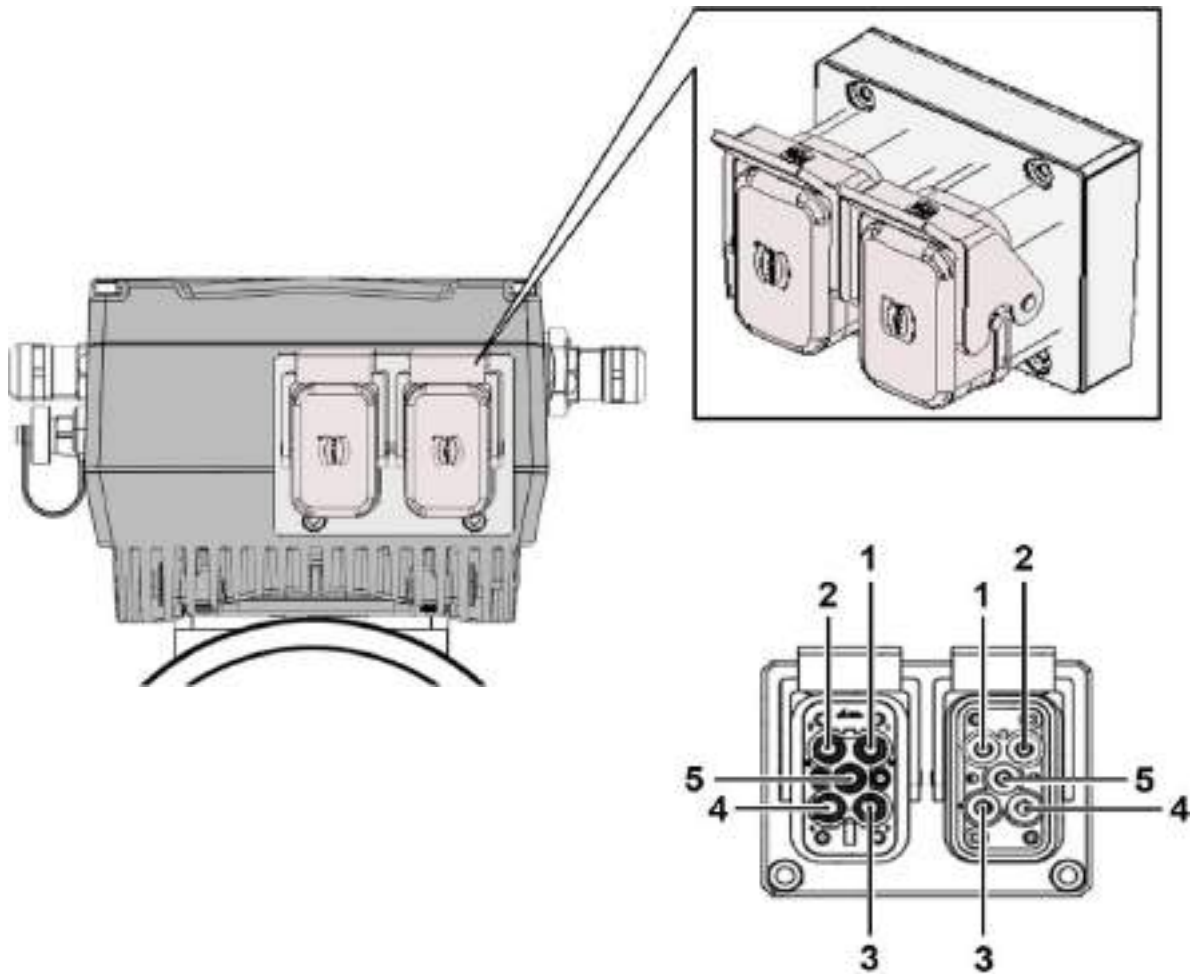
Bluetooth stick:

To establish communication, it will be soon available the download of our free INVERTER app onto your mobile end device from the Google Play Store (ANDROID) or App Store (Apple IOS).

NOTE

If using the Bluetooth stick, the password is fixed as 000000.

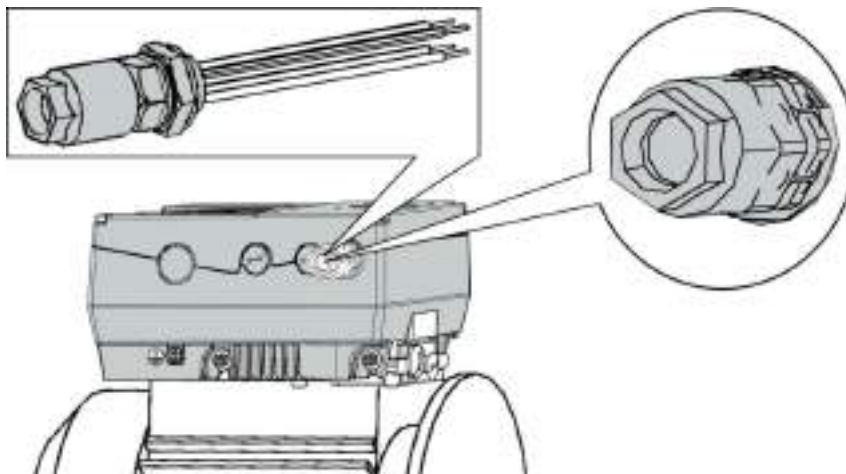
2- Harting Plug Power Connection (Optional)



Harting plug pins

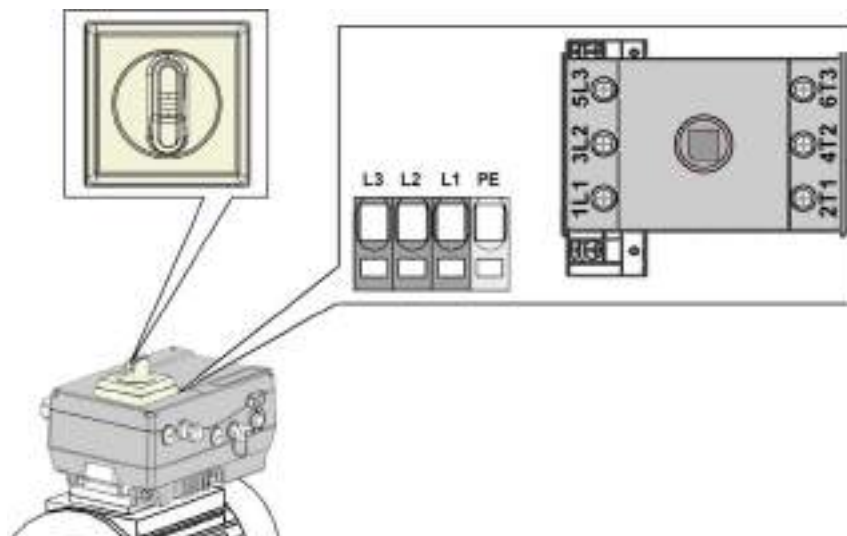
Pin male connector	Pin female connector	Assignment
1	1	L1
2	2	L2
3	3	L3
4	4	-
5	5	PE

3- PHOENIX Quickon connection (Optional)



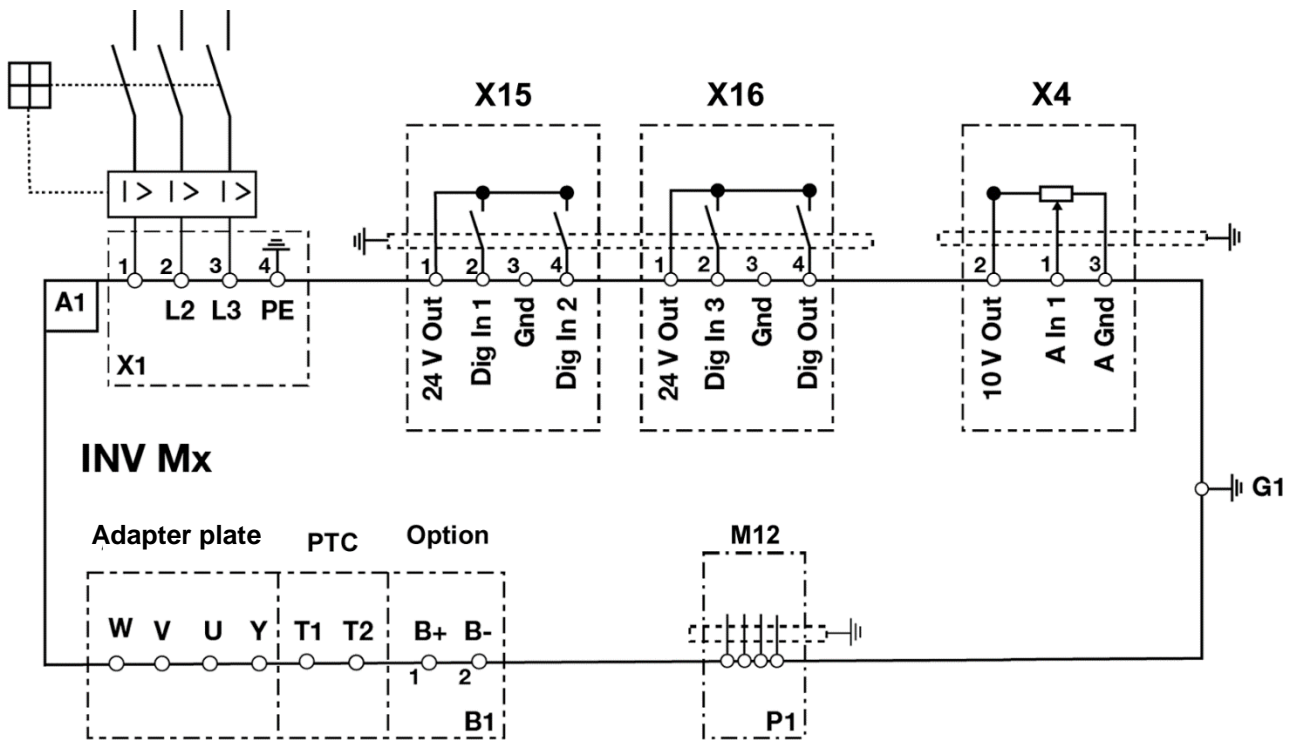
Pin	Colour	Assignment
1	Sw / BK	L1
2	br / BN	L2
3	gr / GY	L3
4	ge / YE	PE

4- Main Switch Option



Pin	Assignment
1L1	L1
3L2	L2
5L3	L3
PE	PE

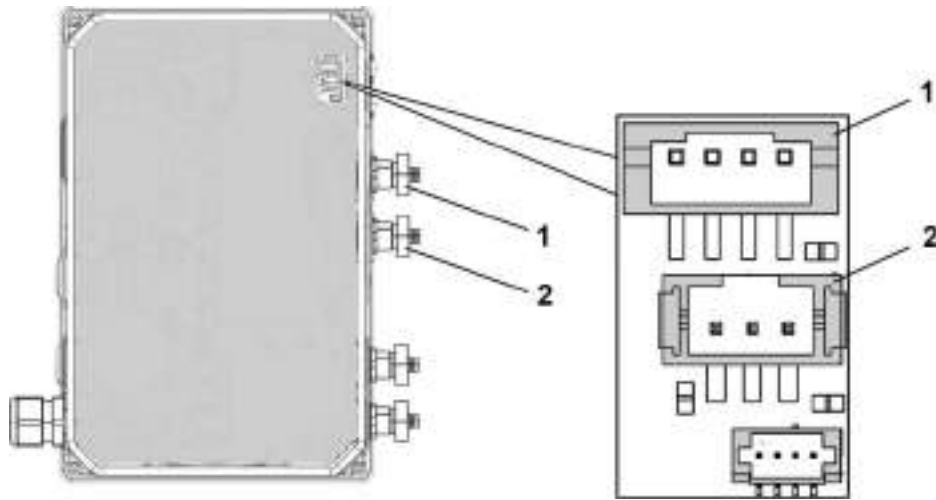
IO BOARD - Connection diagram



Characters	Explanation
A1	Drive controller type: INV Mx IV01 (3 x 400 VAC)
B1	Connection for external brake resistor (option)
G1	M6 grounding screw (connection for residual currents > 3.5 mA)
P1	RS485 programming interface (M12 plug)
X4	Internal potentiometer / analogue input 1
Q1	Motor protection switch or load break switch (optional)
X1	Mains terminals
X15 – X16	Digital inputs and outputs

The drive controller is ready once a 3 x 400 VAC mains supply has been activated (on terminals L1 to L3) or a 565 V DC mains supply has been activated (on terminals L1 and L3).

Basic fieldbus integrated



Pin assignment of interfaces for M12 socket for MODBUS		
JST RS485		
Socket	Pin no.	Signal
1	1	n. c.
	2	RS 485 - A
	3	GND
	4	RS 485 - B
	Housing	Shielding

Fig. 21: Round plug connector, 4-pin, M12, A-coded for MODBUS fieldbus

Pin assignment of interfaces for M12 plug for CANopen		
JST CANopen		
Plug	Pin no.	Signal
2	1	Not assigned
	2	Not assigned
	3	CAN_GND
	4	CAN_H
	5	CAN_L
	Housing	Shielding

Fig. 22: Round plug connector, 5-pin, M12, A-coded for CANopen fieldbus

IO module / assignment of plugs (option)

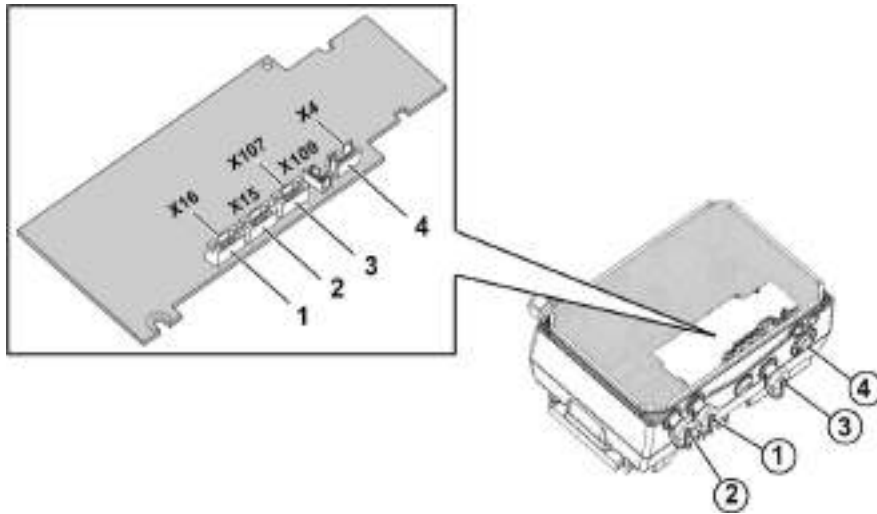


Fig. A: IO module / assignment of plugs (option)


It.	JST I/O 2			
	JST pin	M12 pin	Signal	
1		1	1	24 V
		2	2	Dig In 3
		3	3	GND
		4	4	Dig Out 1

Fig. b: round plug connector, 4-pin, M12, A-coded for IO plug 2


It.	JST I/O 1			
	JST pin	M12 pin	Signal	
2		1	1	24 V
		2	2	Dig In 1
		3	3	GND
		4	4	Dig In 2

Fig. c: round plug connector, 4-pin, M12, A-coded for IO plug 1

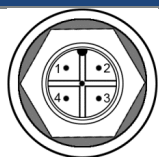
It.	JST RS485 24 V MMI plug			
	JST pin	M12 pin	Signal	
3		1	1	24 V
		2	2	RS485 - A
		3	3	GND
		4	4	RS485 - B

Fig. d: Round plug connector, 4-pin, M12, A-coded for MMI plug

STO: 8-pole M12 socket A-coded with yellow insert	
Pin	Signal
1	24V OUT INVEOR
2	n.c.
3	GND OUT INVEOR
4	n.c.
5	24V STO IN
6	GND STO IN
7	Message contact
8	Message contact

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