



- Digital inputs and outputs
- Analog inputs and outputs
- Communication interface
- Data storage with clock-calendar
- Communication devices to connect LOVATO Electric products to personal computers, smartphones and tablets
- Connecting cables to link LOVATO Electric products to personal computers, modems and converter drives
- Gateway data logger.

Expansion modules

EXP series	30 - 2
EXM series	30 - 3

Accessories

Communication devices	30 - 4
Remote display unit	30 - 4
Protective covers	30 - 4
Converters	30 - 5
Gateway	30 - 5
Connecting cables	30 - 5

SEC. - PAGE



Page 30-2

EXP SERIES EXPANSION MODULES

- For flush-mount products
- Digital Inputs and Outputs
- Analog Inputs and Outputs
- Inputs for PT100 sensors
- Communication modules (RS232, RS485, Ethernet, etc.)
- GSM/GPRS modem
- Data storage with clock-calendar (RTC)
- Powered directly by the base product
- Automatic identification by base product
- Tropicalized versions.



Page 30-3

EXM SERIES EXPANSION MODULES

- For modular products.
- Digital Inputs and Outputs
- Communication modules (RS232, RS485, Ethernet, etc.)
- Data storage with clock-calendar (RTC)
- Separate auxiliary power supply
- Base product connection by IR port
- Automatic identification by base product.



Page 30-4

ACCESSORIES

- Communication devices
- Remote display unit
- Protective covers
- Converters
- Gateway
- Connecting cables.

Expansion modules for flush-mount products



EXP10...

new

new

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
Inputs and outputs.			
EXP10 00	4 digital inputs, opto-isolated	1	0.060
EXP10 01	4 static outputs, opto-isolated	1	0.054
EXP10 02	2 digital inputs and 2 static outputs, opto-isolated	1	0.058
EXP10 03	2 relay outputs, rated 5A 250VAC	1	0.050
EXP10 04 EXP10 04T [Ⓢ]	2 analog inputs, opto-isolated 0/4...20mA or PT100 or 0...±5V	1	0.056
EXP10 05	2 analog outputs, opto-isolated 0/4...20mA, 0-10V or 0...±5V	1	0.064
EXP10 06	2 relay outputs to increase number of steps	1	0.064
EXP10 07	3 relay outputs to increase number of steps	1	0.085
EXP10 08 EXP10 08T [Ⓢ]	2 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC	1	0.058
EXP10 42T [Ⓢ]	6 digital inputs	1	0.054
EXP10 43T [Ⓢ]	4 digital inputs and 2 static outputs	1	0.054
Communication ports.			
EXP10 10	Opto-isolated USB interface	1	0.060
EXP10 11	Opto-isolated RS232 interface	1	0.040
EXP10 12 EXP10 12T [Ⓢ]	Opto-isolated RS485 interface	1	0.050
EXP10 13 EXP10 13T [Ⓢ]	Opto-isolated Ethernet interface	1	0.060
EXP10 14	Opto-isolated Profibus-DP interface	1	0.080
EXP10 18 [Ⓢ]	IEC/EN 61850 interface	1	0.060
Various functionalities.			
EXP10 15	GPRS/GSM modem	1	0.080
EXP10 16	Capacitor bank protection	1	0.080
EXP10 30	Data storage, clock-calendar	1	0.050
EXP10 31	Data storage, clock-calendar with Energy Quality (EN 50160)	1	0.060

Ⓢ IEC/EN 61850 protocol

The module will be made available only when the competent authorities have established the exact terms of the supervision and control of the specific commands (at the time of catalogue printing, currently under study as specified in the Italian CEI 0-16 and CEI 0-21 standards).

Ⓢ PCB tropicalized.

General characteristics

EXP series expansion modules can increase the functionality of the LOVATO Electric products, such as:

- Digital inputs
 - Relay outputs
 - Static outputs
 - Analog inputs
 - Inputs for PT100 temperature sensor
 - Thermocouple inputs "J" or "K" types
 - Analog outputs
 - Communication interface
 - GPRS/GSM modem (without antenna, see page 30-4)
 - Data storage.
- Powered directly by the base product
 – Automatic identification by the base product
 – Rear base product mounting with no need of tools
 – T suffixed versions have tropicalized PCB.

Certifications and compliance

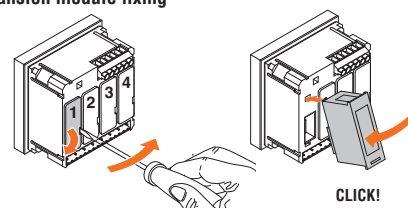
Certifications obtained: UL Listed, for USA and Canada (cULus File E93601), as Listed Accessory under Auxiliary Devices; EXP10 18 excluded, EAC.

Compliant with standards:

- For EXP10 18: IEC/EN 61850 and Italian CEI 0-16, CEI 0-21
- For EXP10 04 and EXP10 10: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL508, CSA C22.2 n° 14
- For EXP10 15: IEC/EN 61010-1, IEC/EN 62311, ETSI EN 301 489-1, ETSI EN 301 469-7, EN 301511, USA/FCC 47 CFR part 15, Subpart B, CAN/ICES-003
- For all other types: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508 (pending for EXP10 40 and EXP10 41), CSA C22.2 n° 14 (pending for EXP10 40 and EXP10 41)
- EXP10 13: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL508, CSA C22.2 n° 14.

For overall dimensions, wiring diagrams and technical characteristics, consult the technical instructions in Downloads of the local or global websites; see details on inside front cover.

Expansion module fixing



EXP series compatibility with LOVATO Electric products

TYPE	IP	DIGITAL MULTIMETERS			DIGITAL POWER ANALYZERS	POWER FACTOR CONTROLLERS			AUTOMATIC TRANSFER SWITCH CONTROLLERS		FIRE PUMP CONTROLLERS		ENGINE AND GENERATOR CONTROLLERS		
	PMVF20 PMVF30	DMG 600/ 610/611	DMG 700	DMG 800	DMG 900 DMG 900T	DCRL 3/5	DCRL 8	DCRG 8	ATL 610	ATL 800/900	FFL 800...	FFL RA 400	RGK 4...	RGK 610	RGK 750 RGK 8... RGK 9...
EXP10 00		•	•	•	•			•	•	•		•			•
EXP10 01		•	•	•	•				•	•		•			•
EXP10 02		•	•	•	•				•	•		•			•
EXP10 03	•	•	•	•	•	•			•	•		•			•
EXP10 04				•	•				•	•		EXP10 04T			• (no RGK 750)
EXP10 05				•	•				•	•					• (no RGK 750)
EXP10 06						•			•	•					
EXP10 07						•			•	•					
EXP10 08		•	•	•	•				•	•		EXP10 08T	•		•
EXP10 10	•	•	•	•	•	•			•	•				•	•
EXP10 11	•	•	•	•	•	•			•	•		•		•	•
EXP10 12 EXP10 12T	•	•	•	•	•	•			•	•		EXP10 12T	•	•	•
EXP10 13 EXP10 13T	•	•	•	•	•		•		•	•		EXP10 13T	•		•
EXP10 14				•	•				•	•					
EXP10 15					•				•	•	•	•			•
EXP10 16									•	•					
EXP10 18	•														
EXP10 30				•	•			•							
EXP10 31					•										
EXP10 42T											•	•		•	•
EXP10 43T											•	•	•	•	•
Max n° of modules addable	2	1	4	4	4	1	2	4	2	3	2	2	1	1	2 3 4

Expansion modules for modular products



EXM10 00



EXM10 10

Order code	Description	Qty per pkg n°	Wt [kg]
Inputs and outputs.			
EXM10 00	2 digital inputs and 2 static outputs, opto-isolated	1	0.137
EXM10 01	2 digital inputs, opto-isolated and 2 relay outputs, rated 5A 250VAC	1	0.147
EXM10 02	4 opto-isolated digital inputs and 2 relay outputs rated 5A 250VAC	1	0.155
Communication ports.			
EXM10 10	Opto-isolated USB interface	1	0.140
EXM10 11	Opto-isolated RS232 interface	1	0.125
EXM10 12	Opto-isolated RS485 interface	1	0.140
EXM10 13	Opto-isolated Ethernet interface	1	0.140
EXM10 18	IEC/EN 61850 interface	1	0.140
EXM10 20	Opto-isolated RS485 interface and 2 relay outputs, rated 5A 250VAC	1	0.140
EXM10 30	Data storage, RTC with backup reserve energy for data logging	1	0.140

IEC/EN 61850 protocol

The module will be made available only when the competent authorities have established the exact terms of the supervision and control of the specific commands (at the time of catalogue printing, currently under study as specified in the Italian CEI 0-21 standard).

General characteristics

EXM series expansion modules can increase functionality of LOVATO Electric products, such as:

- Digital inputs
- Relay outputs
- Static outputs
- Communication interface
- Data storage.
- Connection to base product by IR (infrared beam) port
- Automatic identification by the base product
- Side base product mounting.

Certifications and compliance

Certifications obtained: UL Listed, for USA and Canada (cULus File E93601), as Listed Accessory under Auxiliary Devices; EXM10 18 excluded, EAC.

Compliant with standards:

- For EXM10 18: IEC/EN 61850 and Italian CEI 0-21
- For EXM10, 10 20, 10 13: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-4, UL 508, CSA C22.2 n° 14
- For all other types: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC/EN 61000-6-3, UL508, CSA C22.2 n° 14.

For overall dimensions, wiring diagrams and technical characteristics, consult technical instructions online in Downloads of the local or global website; see details on inside front cover.

Expansion module fixing



CLICK!

EXM series compatibility with LOVATO Electric products

	INTERFACE PRO. SYSTEM UNITS	ENERGY METERS	DATA CONCENTRATORS	DIGITAL MULTIMETER
	PMVF51/60/70	DME D310 T2	DME CD	DMG 300
EXM10 00		●	●	●
EXM10 01	●	●	●	●
EXM10 02		●	●	●
EXM10 10	●	●	●	●
EXM10 11	●	●	●	●
EXM10 12	●	●	●	●
EXM10 13	●	●	●	●
EXM10 18	●			
EXM10 20		●	●	●
EXM10 30		●	●	●
Max n° of modules addable	2	3	3	3

Communication devices



CX 01



CX 02



CX 03

Order code	Description	Qty per pkg	Wt
		n°	[kg]
CX 01	PC ↔ LOVATO Electric product dongle, with USB optic connector for programming, data download, diagnostics and firmware upgrade	1	0.090
CX 02	PC ↔ LOVATO Electric product Wi-Fi dongle for programming, data download, diagnostics and firmware upgrade	1	0.090
CX 03	GSM penta-band (850/900/1800/1900/2100MHz) for EXP10 15 expansion module	1	0.090

General characteristics

Communication devices to link LOVATO Electric products to:

- Personal computers (PC)
- Smartphones
- Tablets.

CX 01

This USB/optical dongle, complete with cable, allows to connect compatible LOVATO Electric products with a PC without having to disconnect the power supply from the electric panel.

The PC identifies the connection as a standard USB.

CX 02

This Wi-Fi point connection, lets LOVATO Electric products be viewed by a PC, smartphone and tablet without having to connect cables.

CX 03

Antenna compatible with major part of worldwide mobile networks, thanks to the 850/900/1800/1900/2100MHz frequencies.

IEC degree of protection: IP67. Fixing by Ø10mm/0.39" drilling. Cable length 2.5m/2.73yd.

For overall dimensions, wiring diagrams and technical characteristics, consult technical instructions online in Downloads of local global website; see details on inside front cover.

Remote display unit



EXC RDU 1

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXC RDU 1	Remote display unit, graphic LCD, touch screen 128x112 pixels, IP65 protection. Compatible with ADXL... soft starter and VLB3... variable speed drives	1	0.360

General characteristics

Alarm conditions can be viewed on the remote display and alarm silencing can also be activated.

- Dual 100...240VAC / 12...24VDC power supply
- Touch screen 128x112 pixel backlight graphic LCD
- Built-in buzzer
- Static (SSR) output for global alarm signalling
- Opto-isolated RS485 interface port
- Conductor cross section: 0.2...2.5mm² (24...12 AWG; 18...12 AWG per UL/CSA)
- Tightening torque: 0.56Nm (4.5lbin)
- Compatible with ADXL... soft starter and VLB3... variable speed drives.

Certification and compliance

Certification obtained: cULus, EAC.

Compliant with standard: IEC/EN 61010-1, IEC/EN 61000-6-2, IEC 61000-6-3, UL508, CSA C22.2 n° 14.

Protective covers



31 PA96x96

Order code	Description	Qty per pkg	Wt
		n°	[kg]
PA 96X48	Front IP65 protective cover for multimeters DMK 0/1...	1	0.048
31 PA96X96	Front IP54 protective cover for multimeters DMK 2...	1	0.077

General characteristics

If high IEC degree of protection is needed, the protective covers give to the device the necessary protection required.

Accessories



EXP80 00



EXP80 01

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXP80 00	Plastic insert for customising label for DMG 600/610/611 and DCRL...	10	0.005
EXP80 01	IP65 gasket seal for ATL600/610/611 and DCRL8	1	0.150
EXP80 03	35mm DIN rail mounting accessory for ADXL... soft starter	1	0.002
EXP80 04	Fan for ADXL... soft starter	1	0.004
EXM80 04	Set of sealable terminal covers for DMG 100/101/110/200/210/300	1	0.020
NTC 01	External/remote temperature sensor, with 3m/3.3yd long cable	1	0.150

Converters



EXC CON 01

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXC CON 01	RS485/ Ethernet converter, 12...48VDC, including DIN rail fixing kit	1	0.400

EXC CON 01 General characteristics

The EXC CON 01 converter can interface "Slave" devices connected in a RS485 bus with a "Master" equipped with an Ethernet interface port:

- Kit consisting of a converter and DIN rail mounting accessory
- Web interface programming
- No power pack included.

Certifications and compliance

Certifications obtained: cULus (UL 60950-1) Listed, FCC CLASS A.

Gateway



EXC M3G 01

new

Order code	Description	Qty per pkg	Wt
		n°	[kg]
EXC M3G 01	RS485 Gateway/3G modem, 9.5...27VAC/9.5...35VDC, including antenna and programming cable	1	0.340
EXC GL A01	Gateway data logger for data collecting via Modbus from the devices in the field. Publishing of the data to supervision software, also in Cloud	1	0.6
EXC GL AX1	2G/3G modem communication module for EXC GL A01	1	-

EXC M3G 01 General characteristics

The EXC M3G 01 gateway can interface "Slave" devices connected in a RS485 with a "Master" using a 3G network:

- Connection TCP server through 3G or 2G network
- Transparent mode: data is transferred from the 3G side to the serial side and vice versa without protocol conversion
- Settable parameters: TCP server IP and remote port, network operator apn (with username and password), SIM card pin (with enabling), connection time-out, serial parameters (baud rate from 1,200 bps to 115,200 bps, stop bit, character length, parity)
- RJ45 port for programming parameters and diagnostics with simple software tool
- Antenna compatible with major part of worldwide mobile networks, thanks to the 850/900/1800/1900/2100MHz frequencies. IEC degree of protection: IP67. Fixing by Ø10mm/0.39" drilling. Cable length 2.5m/2.73yd.

Compliance

Compliance with standards: EN 60950-1.

EXC GL A01 General characteristics

EXC GL A01 gateway is able to collect data from devices which are connected through ethernet or RS485 port. Modbus RTU, ASCII and TCP protocols are supported. The data can be reviewed by a connection to Synergy Cloud service or to ethernet local web server and a browser. The access to internet for data sending can be achieved with ethernet port or by adding EXC GL AX1 2G/3G modem.

- CPU ARM 1 GHz
- 2 ethernet port
- 1 RS232/RS422/RS485 serial port
- 24VDC (10...32VDC) power supply
- Operating temperature -20...+60°C
- Simplified connection to Lovato Electric devices
- Compatible with Synergy and Synergy Cloud softwares.

Compliance




Compliance with standards: EN 61000-6-4 emissions, EN61000-6-2 immunity, for installations in an industrial environment.



EXC GL A01



EXC GL AX1

			
	EXC GL A01 + EXC GL AX1	EXC M3G 01	EXP10 15
Transmission technology	2G/3G	2G/3G	GSM – GPRS (2G)
Connectivity with Synergy and Xpress	Yes	Yes	Yes
Device setup and supervision	Yes	Yes	Yes
Local memory	Yes	No	No
SMS and mail sending	No	No	Yes
Support for multiple devices	Yes, with RS485 or ethernet	Yes, with RS485	No
Device compatibility	Devices with RS485 or ethernet and modbus slave role, third party ones included	Devices with RS485 and modbus slave role, third party ones included	Only LOVATO Electric devices

Connecting cables



51 C4

Order code	Description	Qty per pkg	Wt
		n°	[kg]
51 C2	For PC ↔ LOVATO Electric device, 1.8m/2yd long	1	0.090
51 C3	For PC ↔ GSM modem, 1.8m/2yd long ^①	1	0.210
51 C4	For PC ↔ RS232/RS485 converter drive, 1.8m/2yd long	1	0.147
51 C5	For Analog modem ↔ LOVATO Electric device, 1.8m/2yd long ^①	1	0.111
51 C7	For GSM modem ↔ LOVATO Electric device, 1.8m/2yd long ^①	1	0.101
51 C8	For ADX ↔ remote keypad, 3m/3.3yd long	1	0.080

^① Consult Technical support for information; see contact details on inside front cover.

General characteristics

Connecting cables to link LOVATO Electric devices to:

- Personal computer (PC)
- Modem
- Bus converter.

For overall dimensions, wiring diagrams and technical characteristics, consult technical instructions online in Downloads of local or global website; see details on inside front cover.

Certification

Certification obtained: EAC.