

M=BUS Uninterruptible Power Supply (UPS)

Shockproof rechargeable battery for the M=BUS data acquisition system.

- | Battery and loop-through operation
- | Status LEDs for power level, status and charging
- | Space saving installation of M=BUS Pro devices on top of the UPS
- | Passive cell balancing



TECHNICAL SPECIFICATIONS

Capacity	3,500 mAh, 37 VDC (Lithium-Polymer)
Input voltage (battery charging without consumer)	9...36 VDC
Input voltage (loop-through mode)	18...36 VDC
Max. input power consumption (charging without consumer)	50 W
Output voltage	22 VDC
Max. output power consumption (battery mode)	154 W
Max. output power consumption (loop-through mode)	44 W
Max. overvoltage protection (input / output)	60 VDC
Short circuit protection	Yes
Dimensions incl. base plate (L x W x H)	220 mm x 170 mm x 93 mm
Weight incl. base plate	2,646 g
Operating temperature	0...35°C
Overtemperature protection (shutdown)	60°C (internal)
Automatic shutdown	After 2 min, output power consumption <140 mA
Shockproof	100 G

- Scope of supply**
- | M=BUS UPS
 - | Mounting plate and screws
 - | Connection cable UPS to M=BUS device (0.3 m)
 - | Power supply and cable (3 m)
 - | Service adapter cable

- Optional equipment**
- | M=BUS Gateway (Ethernet, USB)
 - | M=BUS Pro Analog Logger
 - | M=BUS Pro Digital Logger
 - | M=BUS Pro FAM Box
 - | M=BUS Pro Fire Box
 - | M=BUS Pro Active Terminator
 - | M=BUS Indummy Logger
 - | Crashsoft control software
 - | Yearly maintenance service

PIN ASSIGNMENT



Pin	Description	Pin	Description
1	V +	3	Designated for RS485 bus
2	GND	4	Designated for RS485 bus
Socket housing connected to ground			

Figure 1: Pin assignment power input (socket view, device)

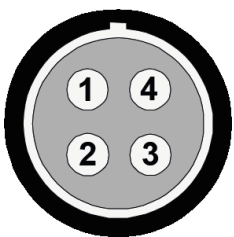
Use this plug: LEMO FGG.2B.304...



Pin	Description	Pin	Description
1	+22 V	3	Designated for RS485 bus
2	GND	4	Designated for RS485 bus
Socket housing connected to ground			

Figure 2: Pin assignment power output (socket view, device)

Use this plug: LEMO FGA.2B.304...






Pin	Description	Pin	Description
1	USB V +	3	USB D +
2	GND	4	USB D -
Socket housing connected to ground			

Figure 3: Pin assignment service connector (socket view, device)

Use this plug: LEMO FGG.0B.304...

CONFIGURATIONS

		
<p>Figure 4: Charging only mode</p>	<p>Figure 5: Loop-through mode</p>	<p>Figure 6: Stand-alone mode</p>
<ul style="list-style-type: none"> No power consumers are connected to the power output. The battery can be charged within 9 V to 36 V, 50W. 	<ul style="list-style-type: none"> The battery can be charged within 18 V to 36 V while power consuming devices are connected to the output socket. In order to keep the battery in permanent operation the output current must not exceed 2 A. <ul style="list-style-type: none"> < 2 A: Charging LED flashes green > 2 A: Charging LED is steady green 	<ul style="list-style-type: none"> Default operation in an impact scenario without external power supply. The M=BUS Pro System is powered autonomously by the UPS.

STATUS FEEDBACK

Power LED

If the Power LED is off, the power output is disabled. If the power output is enabled, the LED can show three states for the power level:

Steady green	The capacity level is between 75 % and 100 %.
Steady yellow	The capacity level is between 25 % and 75 %.
Steady red	The capacity level is below 25 %. The battery has to be recharged.

Status LED

After power-on the status LED shows service or error conditions as follows:

Steady red for 2 s, the UPS switches off subsequently	Internal error (cell temperature, cell voltage, controller not within the specifications). Please contact MESSRING.
Steady green	The UPS operates under normal conditions.
Steady green for 2 s, flashing red subsequently at 2 Hz	The UPS is operational. The service interval has been exceeded for not more than two month. The battery needs maintenance. Please contact MESSRING for service.
Steady green for 2 s, flashing red	The UPS is operational. The service interval has been exceeded for more than

subsequently at 4 Hz	two month. The battery needs maintenance. Please contact MESSRING for service immediately.
Steady green for 2 s, status and power LED steady red for 5 s, the UPS switches off subsequently	<p>The UPS switches to protection mode and is inoperative. The service interval has been exceeded for more than 4 months. The UPS needs to be shipped to MESSRING for maintenance.</p> <p>The device self-test is performed in protection mode. A test result without errors is indicated by the Status LED showing 2 s steady green after power-on. If the self-test is not successful (Status LED showing red right after power-on), the UPS needs to be considered as defective and is not to be shipped without approval by the authorities and forwarders. The shipment of defective batteries or cells is excluded by most of the forwarding companies and restricted by law.</p>

Charging LED

If the LED is off, no external power is connected or the power supply is out of the required voltage specifications. The charging states are shown as follows:

Flashing green	The battery is charging.
Steady green	The output current exceeds 2 A in loop-through mode configuration.

Power Button

The power button is a push-button which enables and disables the M=BUS UPS if no external power supply is connected. To turn off the UPS the power button has to be pushed for more than 2 s.