Gateway

EA-GSM-IP
100.0802B

EA-GSM-DIN
100.0812B

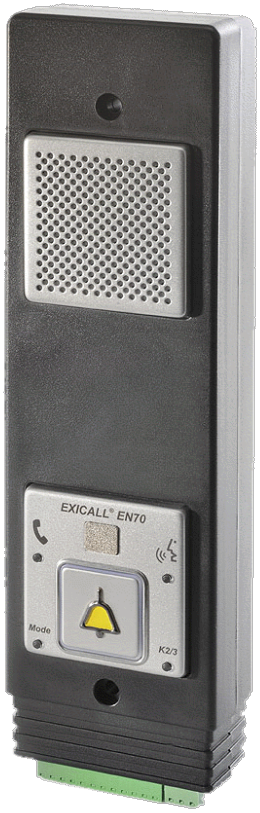
EA-UMTS-IP
100.0802BU

EA-UMTS-DIN
100.0812BU

EA-UMTS-IP-LIGHT
100.0801BU

EA-UMTS-DIN-LIGHT
100.0811BU

UMTS versions support 3G- and 2G-network



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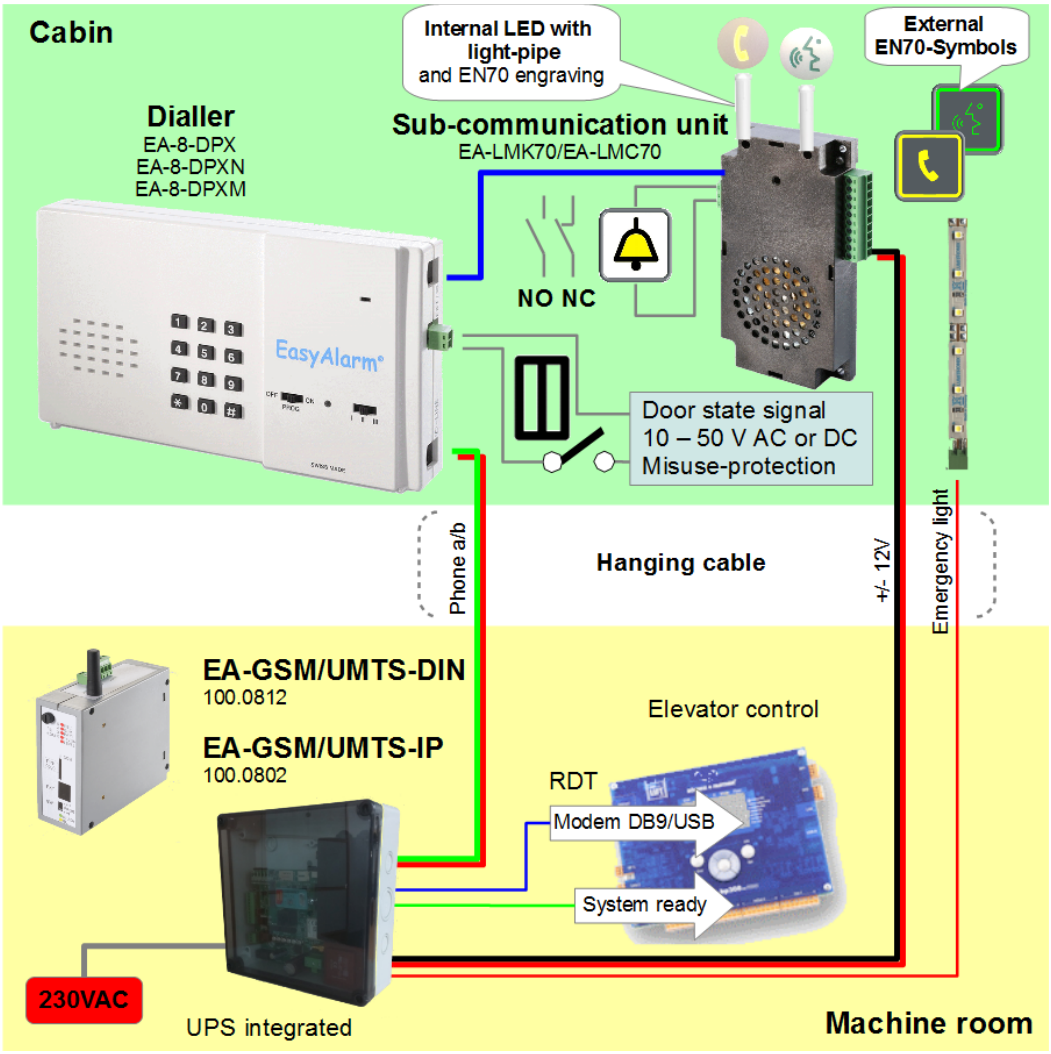
Contents

1 Overview



The universal **EA-GSM/UMTS-Interface** simulates the analogue telephone line (PSTN) for the alarm dialler (e.g. EasyAlarm, EXICALL) and is fully compatible with the protocols WinMOS®300, Point-ID.

- The emergency call over mobilenetwork is a cost effective **alternative to landline installation**.
- No costs for an **analogue landline**.
- You may **change the provider** at any time.
- The elevator can already be used during **construction**.
- Interface to connect to the elevator control (e.g. Böhnke+Partner, Kollmorgen, KW, L+L, Newlift, Rekoba, RST, Strack etc.) ☞ use as **Modem**.

Safety note

- The location of the Antenna **should be stationary** (e.g. in the machine room) in order that a stable reception is guaranteed.
- In case of an emergency call retro-fit (SNEL, ESBA), where no empty wires in the hanging cable are available, the EA-GSM/UMTS-Interface can be located on top of the cabin, providing that the **reception is guaranteed for the entire cabin travel** (Simple reception diagnosis by SMS).
- If the reception is **inadequate or fails completely**, the elevator must **automatically be set out of order**: for example, command to the elevator control to move to the ground floor. Therefore the EA-GSM/UMTS-Interface provides a relay contact (NO or NC).
- **Beware of using prepaid cards: in case of an emergency there might be no credit left. Better use a subscription or prepaid with topping up via auto reload**.
- **To ensure that the correct number is dialled even with roaming, the calling numbers of the dialler must be entered including the country code.**
- **Check battery and reception values with every maintenance ☞🕮10.1.**

2 EA-GSM/UMTS-IP (100.0802B / 100.0802BU / 100.0801BU)

2.1 Specification

Article-No:	100.0802B (EA-GSM-IP) 900/1800 MHz 100.0802BU (EA-UMTS-IP) 100.0801BU (EA-UMTS-IP-LIGHT) 900/2100 MHz (3G) & 900/1800 MHz (2G)
Power supply:	230 VAC / 50 Hz / max. 15 W Standby: 3.5 W + 2.5 W during connection *+ load on 12VOUT* *+ load on EL* *+ load in SIR* + 5 W during battery charge (max)
Backup battery:	12 V / 1.2 Ah (100.0880) /Typ.charging time: 8 h
Dimension (L x W x H):	182 x 180 x 63 mm
Housing:	ABS, IP67
Weight:	650 g (without battery)

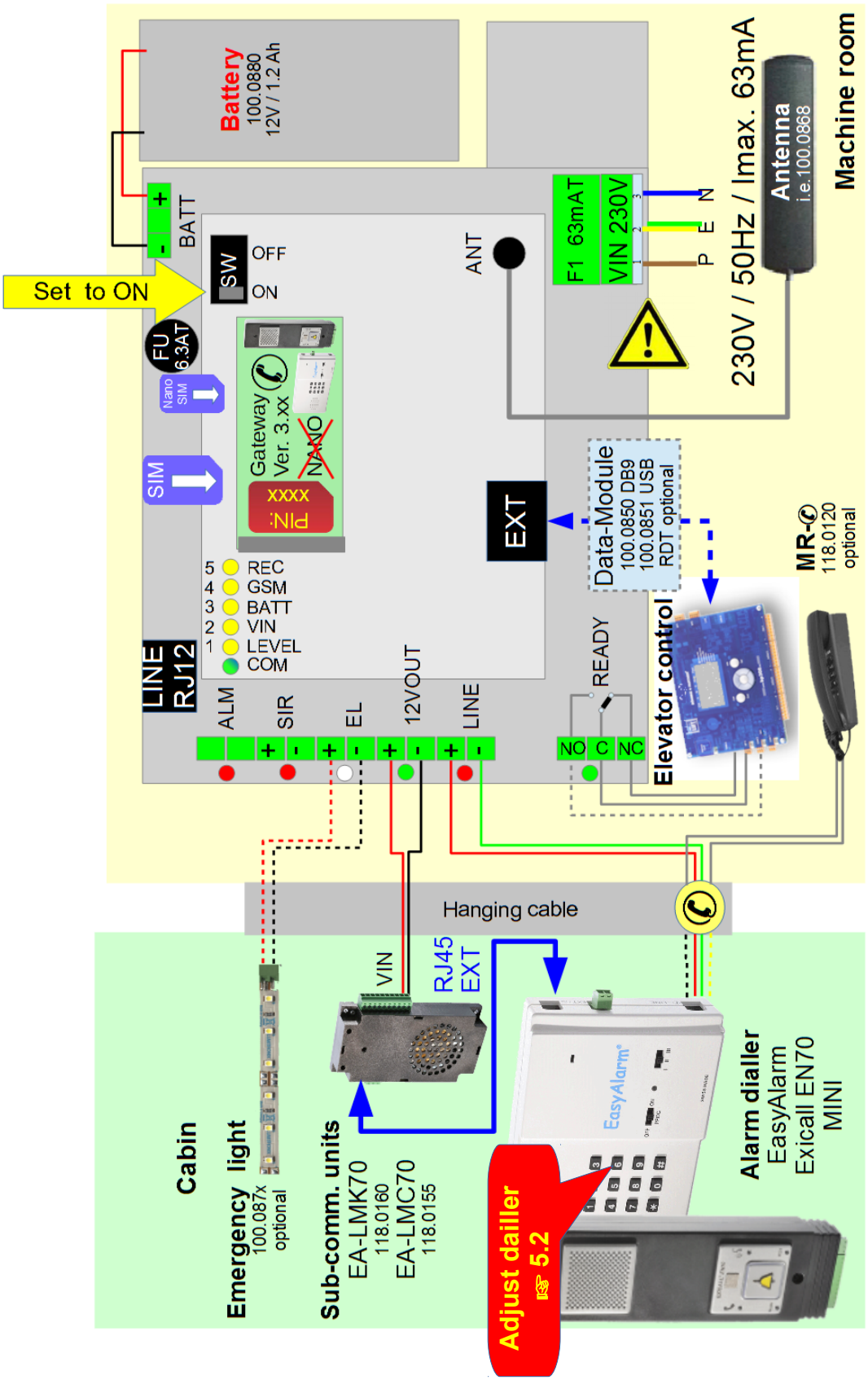
2.2 Connectors

These gray marked elements do not exist in the LIGHT version

	Comment	
ANT	Antenne SMA	Antenna
ALM	*Alarm-input*	*1,2: active if signal 10 .. 50 V AC or DC*
BATT	Connector for 12 V / 1.2 Ah battery	1: +BATT (red) 3: -BATT (black)
EL	*Emergency light output* *12 V / max 300mA*	*5: +* *6: -*
EXT	Data interface	For modem use
F1	Mains fuse	63 mA slow
FU	Battery fuse	6.3 A slow
LINE **LINE RJ12**	Analogue telephone line	9: +LINE 10: -LINE or RJ12
READY	Relay: Operation control: „System ready"	1: Normally closed contact (NC) 2: C 3: Normally open contact (NO)
SIM ***Nano SIM***	SIM-card holders	PIN:0000 PIN:1010 M2M-SIM-Card ☞ **Check label**
SIR	*Trouble output* *12 V / max 300mA*	*3 +* *4: -*
SW	Mode switch	OFF: Modem use only (transparent) ON: Emergency call and Modem use
12VOUT	*Uninterrupted power output* *12V / max. 300 mA*	*7: +12V* *8: GND*
230V	Mains power connector	1: Neutral 2: Earth 3: Live (F1)

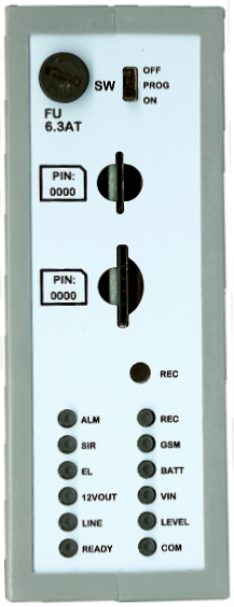
2.3 Wiring

The device has been designed solely for operation on a 230 VAC / 50 Hz supply.
Work on the 230 VAC power supply must be carried out by a qualified electrician.
Doing so the applicable accident prevention regulations must be observed, to avoid electric shock, the mains has to be disconnected (trip the circuit breaker).



3 EA-GSM/UMTS-DIN (100.0812B / 100.0812BU / 100.0811BU)

3.1 Specification



Article-No:	100.0812B (EA-GSM-DIN) 900/1800 MHz 100.0812BU (EA-UMTS-DIN) 100.0811BU (EA-UMTS-DIN-LIGHT) 900/2100 MHz (3G) & 900/1800 MHz (2G)
Power supply:	14.3 VDC +/- 0.15 V Standby: 1.5 W + 2.5 W during connection *+ load on 12VOUT* *+ load on EL* *+ load in SIR* + 5 W during battery charge (max)
Backup battery:	12 V / 1.2 Ah (100.0880) / Typical charging time: 8 h
Dimension (L x W x H):	45 x 118 x 138 mm
Housing:	DIN
Weight:	400 g (without battery)

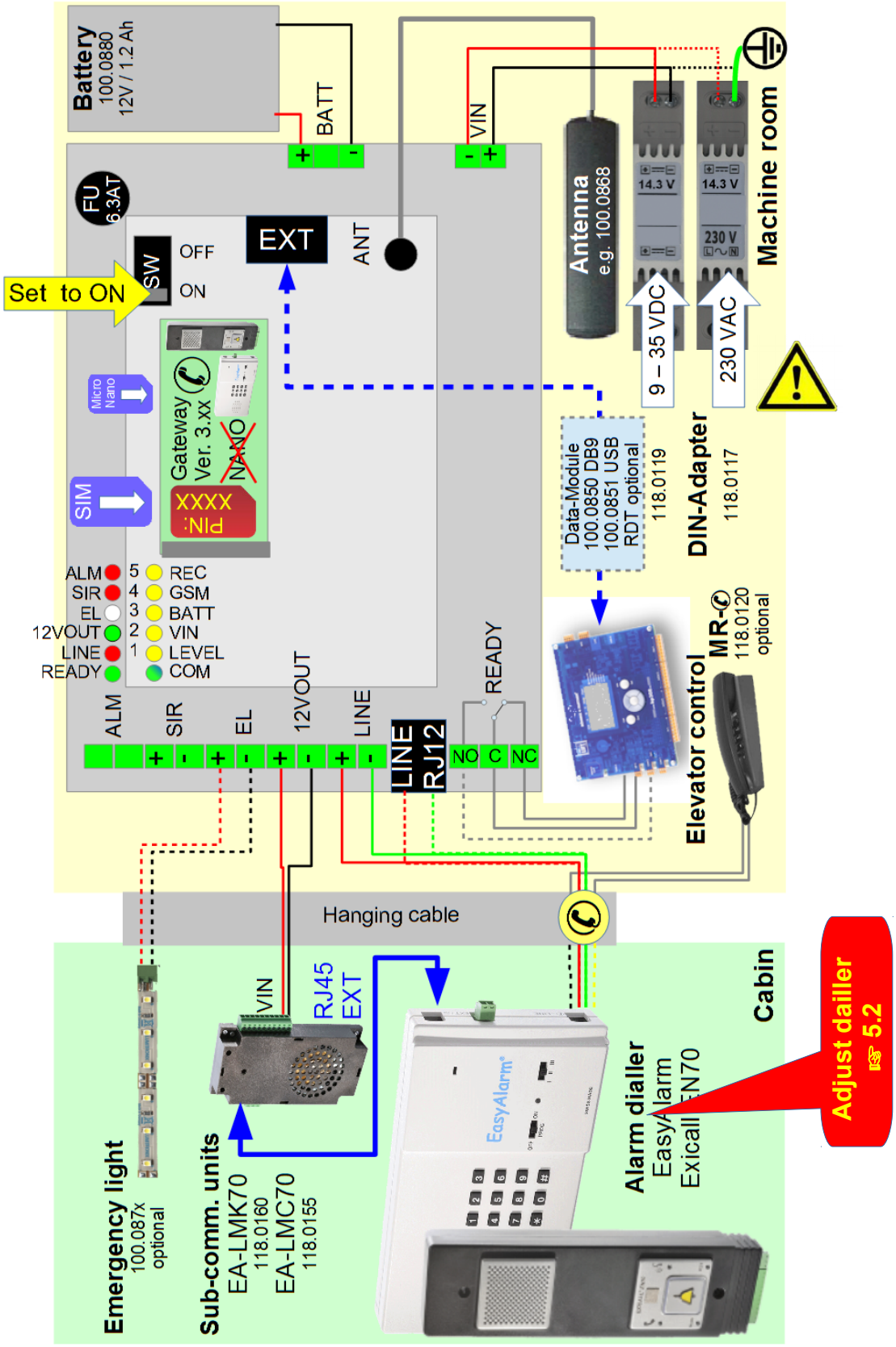
3.2 Connectors

These gray marked elements do not exist in the LIGHT version

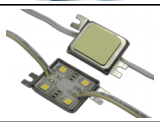
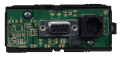
	Comment	
ANT	Antenne SMA	Antenna
ALM	*Alarm-input*	*1,2: active if signal 10 .. 50 V AC or DC*
BATT	Connector for 12 V / 1.2 Ah battery	1: +BATT (red) 3: -BATT (black)
EL	*Emergency light output* *12 V / max 300mA*	*5: +* *6: -*
EXT	Data interface	For modem use
FU	Battery fuse	6.3 A slow
LINE **LINE RJ12**	Analogue telephone line	9: +LINE 10: -LINE
READY	Relay: Operation control: „System ready"	1: Normally closed contact (NC) 2: C 3: Normally open contact (NO)
SIM ***Nano SIM***	SIM-card holders	PIN:0000 PIN:1010 M2M-SIM-Card ☞ **Check label**
SIR	*Trouble output* *12 V / max 300mA*	*3 +* *4: -*
SW	Mode switch	OFF: Modem use only (transparent) ON: Emergency call and Modem use
12VOUT	*Uninterrupted power output* *12V / max. 300 mA*	*7: +12V* *8: GND*
14V3IN	Supply voltage	+14V3IN -14V3IN

3.3 Wiring

Work on the 230 VAC power supply must be carried out by a qualified electrician.
Doing so the applicable accident prevention regulations must be observed, to avoid electric shock, the mains has to be disconnected (trip the circuit breaker).



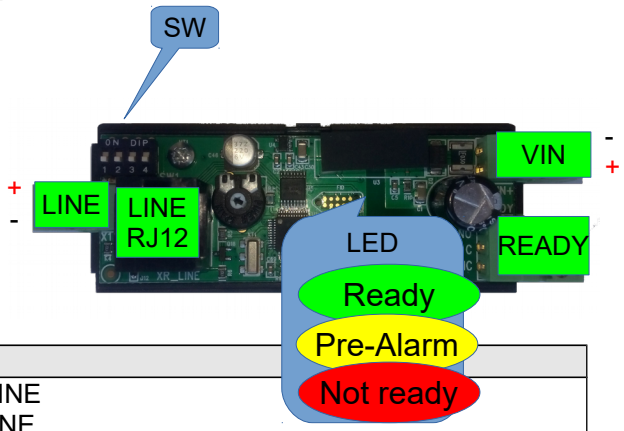
4 Accessories

Picture	Supply voltage	Art.No.
	**DIN-Switching power supply EA-ACDC-USV** Supply voltage: 230 VAC / 50 Hz, Output voltage: 14.3 VDC / 10 W	118.0117
	**DIN-Switching power supply EA-DCDC-USV** Supply voltage: 16 to 35 VDC, Output voltage: 14.3 VDC / 10 W	118.0118
	**DIN-Switching power supply EA-DCDC-USVi** Supply voltage: 9 to 35 VDC, Output voltage: 14.3 VDC / 10 W (isolated)	118.0119
	**Battery** 12 V / 1.2 Ah	100.0880
Picture	**Antenna material** www.leitronic.ch/Documents/GSM-Empfang-Antenne.pdf	**Art.No.**
	**Wall-antenna** cable 5m SMA (Outdoor)	100.0864
	**Directional Antenna** cable 5m SMA, 10dBm gain (Outdoor)	100.0866
	**Extension-cable** 10m SMA	100.0863
	Extension-cable 5m SMA	100.0865
Picture	**Emergency light**	**Art.No.**
	**Emergency light LED-chain 10cm** 12 V / 0.8 W, 16 cd 120°, 52 lm ☞ 100.023x	100.0870
	**Emergency light LED-chain 2x10cm** 12 V / 1.6 W, 33 cd 120°, 104 lm ☞ 100.023x	100.0873
	**Emergency light screw M8** 12 V / 0.2 W, 44 cd 20°, 4 lm, cable 25cm	100.0872
	**Emergency light LED chain** 12 V / 1.2 W, 50 lm, cable 10cm (in a row)	100.0874
Picture	**Serial interface refer to special document:** www.leitronic.ch/Documents/100.085x_Data-Modules-GB.pdf	**Art.No.**
	**Data-Module-DB9** e.g. Newlift DB9	100.0850
	**Data-Module-USB** e.g. Böhnke+Partner USB isolated	100.0851
	**Data-Module EMU** interface modem emulator	100.0852
Picture	**Other**	**Art.No.**
	**Remote-Ready** for remote locations or multi system operations ☞🕮4.1	100.0410

4.1 Remote-Ready (Multi-system operation)

4.1.1 Specification

Article-No:	100.0410
Supply:	VIN: 6 to 24 VDC Power consumption: 0.2 to 0.4 W
Housing:	DIN-rail 2TE
Dimension:	90 x 34 x 45 mm (L x W x H)
Weight:	60 g



4.1.2 Connection

	Comment	
LINE (RJ12)	Analogue phone line (also with RJ12) **Check polarity**	**+** LINE **-** LINE
VIN	Supply voltage input 6 to 24 VDC **Check polarity**	**+** VIN **-** VIN
READY	Ready relay „System ready“	NO (Normally open) C NC (Normally closed)

4.1.3 Function

The REMOTE-READY-Module (supply over **VIN)** monitors voltage on **LINE**-input. In case of insufficient voltage (less than about 3 V), the floating READY-contact is switched.

Optional switch-off delay for **READY**-contact using switch **SW** combinations:

SW ON	Comment
1	+3 Minutes
2	+5 Minutes
3	+10 Minutes
4	+20 Minutes

All positions OFF ☞ instantaneous
All positions ON ☞ 3+5+10+20 = 38 Minutes

4.1.4 Wiring

Example for four elevators
Lift 2 to 4:
over three REMOTE-READY

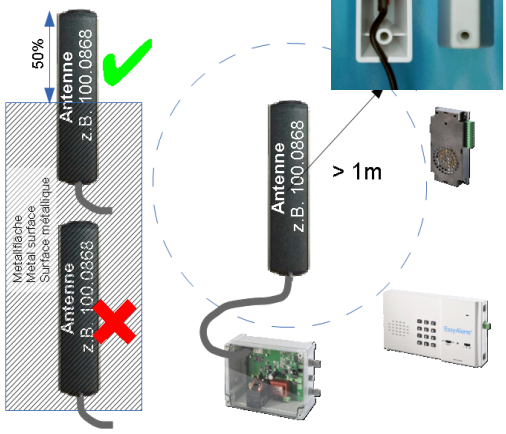
Lift 1
directly connected to EA-GSM/UMTS-Inter-face or using REMOTE-READY

Gateway

5 Start-up

Site selection ☞ http://www.leitronic.ch/Documents/GSM-Empfang-Antenne.pdf

Recommendation: Insert antenna in cover and mount outside shaft, in the machine room or inside shaft. Not in the vicinity of radio transmitters and interference sources. If there are no free wires in the hanging cable, the EA-GSM/UMTS-Interface can be mounted on top of the cabin. In any case, the **reception** must be **checked over the entire travel of the cabin** ☞🕮5.1 Check Reception! Note that the **level-indicator** may **be delayed**.



- Connect **alarm dialler** according to wiring plan.
- Connect **elevator control** according to wiring plan (Relay-contact NO or NC: System ready).

  ☞ Multi-system operations use wiring according 🕮4.1.4

- Connect optional **emergency light according to wiring plan.**
- Connect **antenna**.

- Insert SIM-card with **PIN set to** 0000.

☞ To set PIN to 0000 use any mobile phone:
[*][*][0][4][*] <old PIN> [*][0][0][0][0][*][0][0][0][0][#] + ✆
or insert M2M-SIM-Card with PIN 1010.

- Connect the **battery** 100.0880.

Work on the 230 VAC power supply must be carried out by a qualified electrician.
Doing so the applicable accident prevention regulations must be observed, to avoid electric shock, the mains has to be disconnected (trip the circuit breaker).

- Connect power supply **230V** mains (EA-GSM/UMTS-IP: 100.0802Bx) or **14V3IN** (EA-GSM/UMTS-DIN: 100.0812Bx)
  - either from 230 VAC using DIN-adapter 118.0117.
  - or from 16 to 35 VDC using DIN-adapter 118.0118.
  - or from 9 to 35 VDC (VIN/VOUT isolated) using DIN-adapter 118.0119.

- After two minutes the LEVEL indicators are showing the reception. LED_COM flashes green every 3 seconds.
  ☞ Stick the antenna where the LEDs LEVEL show maximum reception.
- Start test call on alarm dialler and check quality of voice connection.

5.1 Reception test

1. If the EA-GSM/UMTS-Interface is mounted on the cabin roof, send the cabin to the location with the **worst** reception (check reception with LED1. .5). Attention: The level-indicator may be delayed.
2. Start test call and check if the connection is established ☞ terminate test call.
3. **Re-start test call** ☞ Connection must be established ☞ Stay in connection and move the cabin over the complete shaft ☞ Check if connection remains stable ☞ Terminate test call ☞ Send SMS to verify Levels: `Rssi:<mom>(<min>-<max>)`
   ☞ The minimum value <min> must be higher than 5!
   ☞ **Report** Rssi-Value with date (see last page)
4. If a problem occurred during test, change or optimize the placement of the antenna. You may use an outdoor antenna ☞ e.g. Article-no 100.0864, directive antenna 100.0866 and / or extension cord 100.0863.

5.2 Prepare EasyAlarm/Exicall for use with mobile network

To ensure that the correct number is dialled even with roaming, the calling numbers of the dialler must be entered including the country code.
To increase the success rate of data transmission using DTMF tones (WinMOS or other Routine receiver), it is recommended to adjust the tone duration as follows:
Available from software version EasyAlarm / Exicall V39!

OFF ON PROG	* 9 7 1 3 3 6 # #	..	*	Value	#	OFF ON PROG

Value	Information
84	Tone duration optimized for the mobile network to 160msec (duration=(value-76) * 20msec) (Factory setting from V49)
80	Tone duration for land-line use 80msec (Factory setting from V39 until V48)

6 Indicators

COM	Comment
Green	SIM-error: flashes every 1/2 second During network registration: flashes every second Flashes every 3 seconds if connected to the mobile network
Blue	Elevator Control in connection: serial interface or missed call

LED	Reception level	Error code
LEVEL	Level poor	
VIN	Level low	Problem with supply voltage
BATT	Level medium	Problem with battery/charging
GSM	Level high	Problem with mobile Network or Roaming or line permanently busy
REC	Level excellent	Problem with reception (Level Alarm)

LED	Comment
ALM	Indicator of alarm input activation
EL	Indicator of emergency-light output
LINE	Indicator telephone line busy
OK (READY)	Ready-indicator for EA-GSM/UMTS-Interface, if • Battery and battery-charging ok • SIM-card inserted with correct SIM-PIN • Reception sufficient Otherwise the elevator may not perform any further trips. Note: OK (READY) can be delayed up to two minutes (Reception)
SIR	Indicator of trouble output
12VOUT	Indicator of 12V USP voltage

7 Troubleshooting

Faults and errors are displayed by the various indicators (LED) ☞🕮6

Detailed error information available through a status inquiry via SMS or automatically by **Status-SMS** in case of a new error (if <Send Alarm> is ✉ ☞Table 🕮8.3)

☞ send SMS with content
PIN:0000
PIN:1010 M2M-SIM-Card
☞ Reply-SMS ☞🕮8.3

You only get an answer if the PIN is correct and the SMS is not longer than 160 characters!

8 Programming over SMS

Programming is done by **SMS**. An SMS containing correct `PIN` will be evaluated and answered ☞🕮 8.2 to the sender. All **commands** are written in **`CAPITAL LETTERS`**.

SMS-Commands	Comment	Reply-SMS
`PIN:0000` **`PIN:1010`** M2M-SIM-Card ☞ **4-digits check label**		GSM: `leitronic.ch` UMTS: `Leitronic.ch` `GSM 3.xx ready`
`NEW:1234`	Change PIN to 1234 and activate SIM-card protection Note: PIN 4-digits	`New Pin:1234`
`ALARM=`<Alarm-number>_	**Status-SMS** number with +country code e.g. +41 completed with a space (max. 24 digits)	`Alarm:`<Alarm-number>
`ALARM=OFF`	Disable **Status-SMS**	`Alarm:OFF`
`RESET`	Set to factory defaults	`Reset`

8.1 Advanced settings

Advanced settings can be read-out or changed as following:

`EE_R:`<adresse>	Read `EEPROM` <adresse> is 4-digits	`adr:`<adresse>:<read out value>
`EE_W:`<adresse>=<value>	Write `EEPROM` <adresse> is 4-digits <value> is 3-digits (000..255)	`adr:`<adresse>:<written value>

<adresse>	Function	<value>	Default
`0018`	Debounce time: Alarm-input ALM until **Status-SMS**	000 to 255 * 20ms	050 = 1s

Example:
PIN=1010, **Status-SMS**: +41 79 100 10 10, Debounce time ALM = 2 s
☞ send SMS with content
`PIN:1010 ALARM=+41791001010 EE_W:0018=100`
☞ Reply-SMS
`leitronic.ch GSM 3.xx ready, Alarm:+41791001010, adr:0018:100, Batt:96, Ri:18, Charge:255, Power:34, last Call:26, Rssi:12(9-15), Errors:-----,-----,---` (limited to 160 characters)

8.2 Reply-SMS

leitronic.ch registered to the GSM/2G-network
Leitronic.ch registered to the UMTS/3G-network
Example of a **Reply-SMS**:

```
leitronic.ch GSM 3.xx xx,(adr:<adresse>:<value>),(New Pin:<new PIN>),
(Alarm:<alarm number>), Batt:xx, Ri:xx, Charge:xx, Power:xx, last Call:xx,
Rssi:xx(xx-xx), Errors:-----,-----,---
```

Label	Comment	Value xx	Info
GSM 3.xx	Status Software-Version	ready not ready	System ready to use System not ready
Batt:	Battery voltage	0 to 97	**Calculate voltage: 0.145 * <value>** e.g. 97 ☞ 14.05V or 92 ☞ 13.34V
Ri:	Battery-resistance	8 to 70 ①	0- 7 ☞ battery test circuit defect 8 – 23 ☞ battery o.k.
defect!	Battery- or Fuse F2 defect	-	Battery failure or blown fuse F2 6.3AT ☞ check and replace
Charge:	Battery charge value	0 to 255	Charge: * 255s / Discharge: * 15s
Power:	Battery charging voltage	0 to 38	≤ 13 ☞ supply voltage missing ≤ 24 ☞ supply voltage too low to charge battery 30 ☞ supply voltage sufficient
last Call:	Hours since last call	0 to 255	in hours
Roaming	Roaming		Not home GSM-network => higher costs
Rssi: <mom> (<min>-<max>)	Reception-Level Momentary Min. since last call Max. since last call	0 to 31	**Calculate level: 2*<Value> - 113dB** e.g. 10 ☞ 2*10-113 = -93db poor ≥ 5 LED1 low ≥ 10 LED2 medium ≥ 15 LED3 high ≥ 20 LED4 excellent ≥ 25 LED5
Errors	**Error-No. 0 to 12** i.e. -**---+,---*-,--***	- + * ,	-: inactive *: active ,: separator before error 5/10 +: delayed error not jet active

① Attention: a new accumulator can show higher values during the first hours

Example:
Change PIN from 1010 to 1234, set Alarm to +41791234567, set EEPROM 0018 to 100
☞ send SMS with content

```
PIN:1010 NEW:1234 ALARM=+41791234567 EE_W:0018=100
```

Reply-SMS

```
leitronic.ch GSM 3.xx ready, New Pin:1234, Alarm:+41791234567,
adr:0018:100, Batt:96, Ri:18, Charge:255, Power:28, last Call:26,
Rssi:8(5-15), Errors:--*-+,-----,---
```

☞ **Error 0 to 12**: 2 active: Reception poor
4 in delay: Supply voltage too low

If you **do not get any Reply-SMS**, please check the following points:

a) EA-GSM/UMTS-Interface is **not connected** to the mobile-**network** ☞ check LED_GSM
b) **PIN-Code** is incorrect
c) **SIM number** is incorrect
d) **No money** left on SIM-card
e) Mode switch **SW1 not on ON**
f) **SMS is too long (max. 160 characters!)**

8.3 Automatic Status-SMS

The Status-SMS will be sent to the **defined alarm-number** `ALARM= _` **, completed with a space**.
To disable the **Status-SMS** ☞ send SMS with content:

`PIN:0000 ALARM=OFF␣`
`PIN:1010 ALARM=OFF␣` M2M-SIM-Card

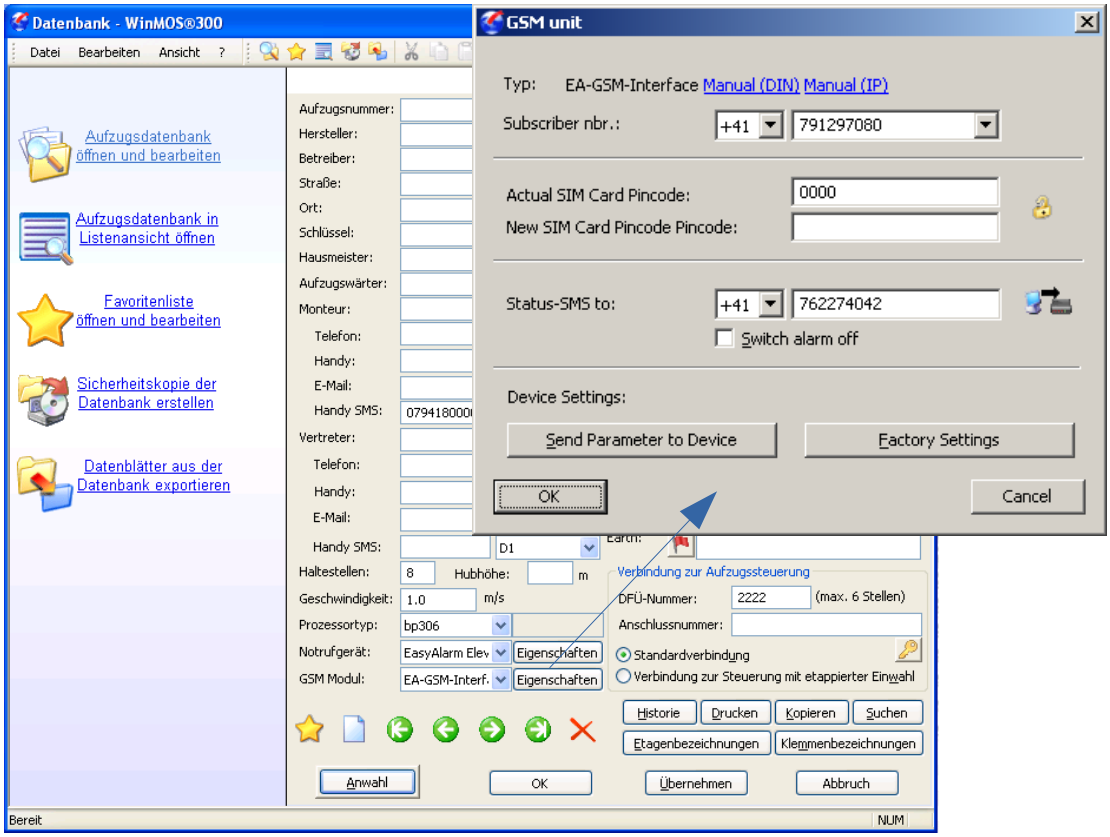
Example:
Signal on input ALM ☞ SMS with content:
`leitronic.ch GSM 3.xx ready, Alarm X4, Batt:96, Ri:18, Charge:255, Power:34, last Call:26, Rssi:12(9-15), Errors:*----,-----,---`

Errors	< State / Error>	READY (OK)	Emergency light	Delayed	Send Alarm	SMS content	Error code LED ❍ off ❍ could be on ● on: REC	GSM	BATT	VIN	LEVEL	Test interval	Send Restore	Restore-SMS content
0	Alarm X4 / ALM	●	Off	0	☒	Alarm X4	❍	❍	❍	❍	❍	(50)*20ms	-	No Alarm X4
1	Supply voltage missing	●	On	0	-	Power off	❍	❍	❍	●	❍		-	Power on
2	Reception poor	●	On	15 s	☒	GSM poor	●	❍	❍	❍	❍	2 s	-	GSM ok
3	Roaming	●	On	0	☒	Roaming	❍	●	❍	❍	❍	2 s	-	Home
4	Supply voltage too low to charge battery	●	Off	15 s	☒	Power poor	❍	❍	❍	●	❍		☒	Power not poor
5	No call within routine interval	●	On	0	☒	No routine call	❍	❍	❍	❍	❍	(74) h	-	Routine call ok
6	Telephone line busy	❍	On	0	☒	Line busy	❍	❍	❍	❍	❍	(4) min	☒	Line ready
7	Battery not charged within 24 h	●①	On	0	☒	Charge problem	❍	❍	●	❍	❍	24 h	☒	Charge ok
8	No or bad battery or fuse F2 defect or battery test circuit defect (Ri<8)	●①	On	0	☒	Battery failure	❍	❍	●	❍	❍	1h	☒	Battery ok
9	Reception bad	❍	On	15 s	☒	GSM bad	●	❍	❍	❍	❍	2 s	☒	GSM ok
10	No mobile network or not registered or mode switch SW1 not on ON	❍	On	0	☒	No GSM	❍	●	❍	❍	❍		☒	GSM registered
11	Interface defect	❍	On	0	☒	Line problem	❍	●	❍	❍	❍	1 h	☒	Line OK
12	Battery end	❍	Off	0	☒	Battery end	❍	❍	●	❍	❍	2 s	☒	Charging

① from V3.15: Errors 7 + 8 ☞ Ready (OK)
Check battery values with every maintenance ☞ replace if Ri> 23 ☞🕮10.1

9 Programming over WinMOS®300

9.1 Database specification



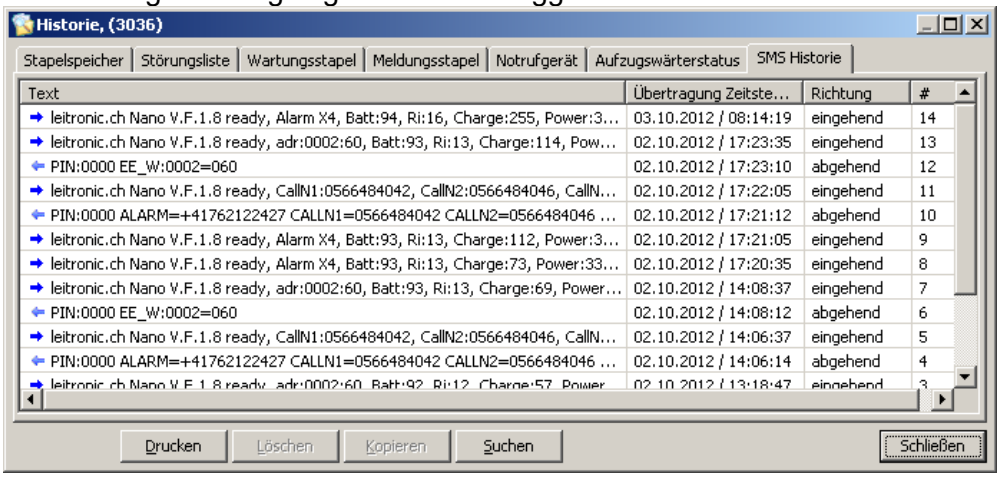
EA-GSM/UMTS-Interface ☞ Select EA-GSM-Interface

- Subscriber Nr
- Current Pincode/ID: 4digits
  ☞ **Check label on SW-module: 0000 / 1010**
- New SIM-Pincode: 4digits
- SMS-Status to: (Optional) Calling number, which directly receives an SMS in case of problem with EA-GSM/UMTS-Interface: Can be disabled.
- Send Parameter to Device:
  ☞ send Status-SMS / PINs / calling numbers + additional parameter by SMS
- Factory default ☞ Reset EA-GSM/UMTS-Interface

SMS will be sent to EA-GSM/UMTS-Interface and saved in SMS-History ☞📖9.2

9.2 SMS-History

All incoming and outgoing SMS will be logged.



10 Maintenance protocol

Location of the installation : .....
.....
.....

EA-GSM/UMTS-Interface

❑	EA-GSM-IP	Artikel-Nr: 100.0802B
❑	EA-GSM-DIN	Artikel-Nr: 100.0812B
❑	EA-UMTS-IP	Artikel-Nr: 100.0802BU
❑	EA-UMTS-DIN	Artikel-Nr: 100.0812BU
❑	EA-UMTS-IP-LIGHT	Artikel-Nr: 100.0801BU
❑	EA-UMTS-DIN-LIGHT	Artikel-Nr: 100.0811BU

installed by:

Company: .....

Mechanic: .....

Date: .....

Calling number of SIM-card: .....

PIN-Code of SIM-card: .....

10.1 Values of the battery/reception test: note within each maintenance

Status query by SMS

☞ send SMS with content
PIN:0000
PIN:1010 M2M-SIM-Card
☞ Reply-SMS ☞ .. `Ri:<mom> Rssi:<mom>(<min>-<max>)` ..

Write down the values of the Reply-SMS into the table below: e.g.

`Ri:16` ☞ Battery-resistance 16
☞ Ri must be below 23 ☞ otherwise replace battery (after 1-2 years of operation)
e.g. `Rssi:12(9-18)` ☞ momentary=12, minimal=9, maximal=18
☞ Minimum value must be higher than 5!

Date	Tested by	Ri	Rssi:		
		< 23 !	<mom>	<min> > 5 !	<max>
1.1.2010	Mister Sample	16 ✔	12	9 ✔	18