

# ATEX-manual for units



## LMK70-ATEX (Zone 0)

LEITRONIC AG, CH-5621 ZUFIKON

Typ: LMK70-ATEX (ZONE 0)

Art. Nr. 121.0370

**Serie-Nr: 2013-5001**

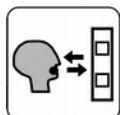
SEV 13 ATEX 0179 X



II 1 G Ex ia IIC T4 Ga

Ui: ≤ 5.9 V Pi: ≤ 1.3 W

0 °C ≤ Ta ≤ +40 °C



## LMK70-ATEX (Zone 0/20)

LEITRONIC AG, CH-5621 ZUFIKON

Typ: LMK70-ATEX (ZONE 0/20)

Art. Nr. 121.0380

**Serie-Nr: 2013-5001**

SEV 13 ATEX 0179 X



II 1 GD Ex ia IIC T4 Ga

Ex ia IIIC T50 °C Da IP64

Ui: ≤ 5.9 V Pi: ≤ 1.3 W

0 °C ≤ Ta ≤ +40 °C



## ATEX-Barrier

LEITRONIC AG, CH-5621 ZUFIKON

Typ: ATEX-BARRIERE

Art. Nr. 121.0390

**Serie-Nr: 2013-5001**

SEV 13 ATEX 0179 X



II (1) GD [Ex ia] IIC

[Ex ia] IIIC

Uo: ≤ 5.9 V Po: ≤ 1.3 W

0 °C ≤ Ta ≤ +40 °C



Generic installation directive according to  
EN60079-14 (Gas)  
EN60079-17 (Maintenance Gas)  
EN60079-19 (Reparation)  
EN61241-14 (Dust)  
EN61241-17 (Maintenance Dust)

Since LMK70-ATEX is intrinsically safe,  
installation and maintenance can be carried out,  
even with applied gas atmosphere

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# ATEX: Component overview

## Sub-communication-unit: LMK70-ATEX Zone 0



The sub-communication unit LMK-ATEX permits alarm triggered by external emergency button and hands-free connection.

EN81-70 symbols (yellow/green) over light-pipes to front-panel.

Order-No. 121.0370

### Supply

Primary voltage max. 5.9V DC

Power consumption 90 mW

### Safety degree




II 1 G Ex ia IIC T4 Ga

### Input-/Output

ATEX Connection with ATEX-Barrier optional:  
- 10 pole cable  
- RJ45 shielded

EC Connection with external emergency button  
(Normally closed NC)

### Symbols

EN81-70 Phone (yellow) / Speak (green)  light pipes to panel

### Environment conditions

Operation temperature 0 ° to 40 °C

Humidity 20 % - 70 % relative humidity, non condensing

### Housing

Dimension 111 x 55 x 21 mm (B x H x D)

120 x 75 x 21 mm (B x H x D)

Incl. feed through and button

Weight 91 g

## Panels

For surface / wall-mounting of communication units LMK70-ATEX Zone 0



Artikel-Nr: 100.0220 EA-TAB  
without button

Dimension: 200 x 100 x 2 mm

Material: INOX

Weight: 320 g

100.0221 EA-TAB-NT  
with button RT-42 2M / Typ XI

200 x 100 x 2 mm

INOX

340 g

100.0231  
transparent frame

220 x 100 x 23 mm

PMMA

180 g

Delivery including mounting-screws and light-pipes for EN70-symbols

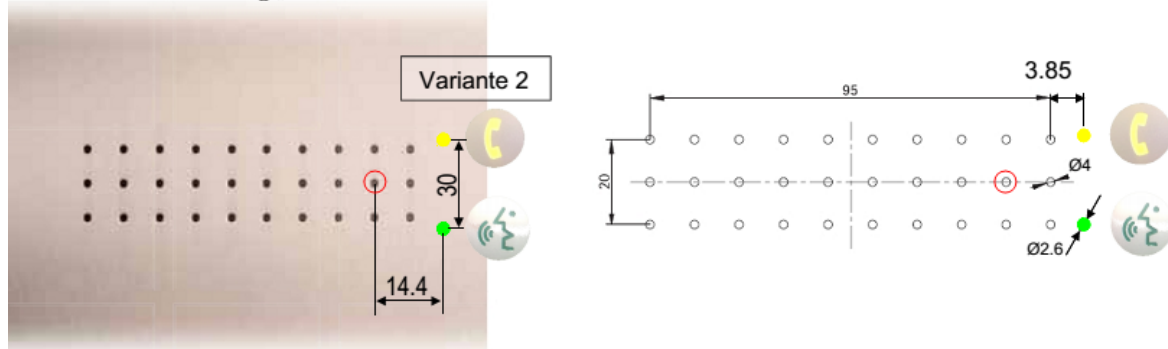
## Drilling hole proposal for new panels

Drilling hole proposals from Schäfer GmbH with the appropriate order code.

In addition, two external EN81-70 indicators: e.g. Type MA42 (shepherds) or similar. The built-in LED LMK7x LEDs and two light pipes (Art. No: 25 145 PGN) will lead light to the front: hole diameter  $\varnothing = 2.6-0.05\text{mm}$ .

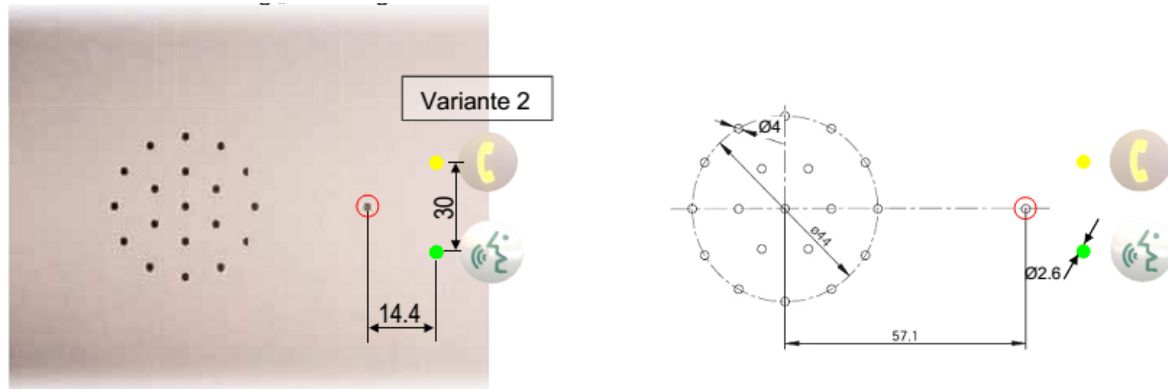
Option 1: "G9924"

Option 2: "G9924 LMK70 LED" with holes for light pipes and engraving



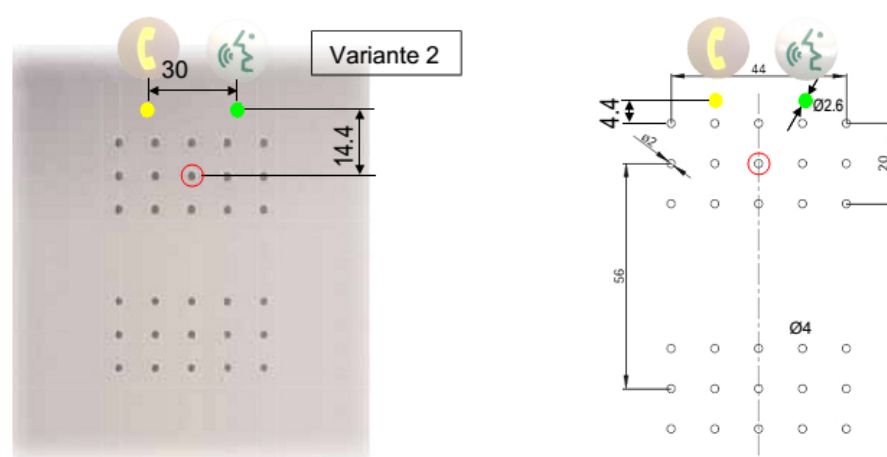
Option 1: "G9924wg" waterproof drilling pattern => use EA-LMK70B-WG to achieve IP54

Option 2: "G9924wg LMK70 LED" with holes for light pipes and engraving



Option 1: "G4824"

Option 2: "G4824 LMK70 LED" with holes for light pipes and engraving



## Housing for sub-communication unit



EA-IP-EN70-EC	incl. emergency button RT42 (bell, NO/NC)
Order-No.	100.0730K
<b>Housing</b>	
Dimension	180 x 110 x 64 mm
Feed through	1 x M16 incl 3M-RJ45-cable
Protection	EN 60529 IP 54
Weight	410 g (without sub-communication unit)

## Sub-communication-unit: LMK70-ATEX Zone 0/20



The sub-communication unit LMK-ATEX permits alarm triggered by internal emergency button and hands-free connection.

Built-in EN81-70 symbols (yellow/green).

Order-No. 121.0380

### Safety degree



II 1 GD Ex ia IIC T4 Ga  
Ex ia IIIC T50 °C Da IP64

### Input-/Output

Cable 1	Connection with ATEX-Barrier optional: - 10 pole cable - RJ45 shielded
Cable 2	Connection to external emergency button. NT-ATEX-AP, NT-ATEX-EB

### Environment conditions

Operation temperature	0 ° to 40 °C
Humidity	20 % - 70 % relative humidity, non condensing

### Housing

Dimension	160 x 160 x 91 mm (L x W x H) 188 x 160 x 109 mm (L x W x H), with PG11 and button
Feed through	3 x PG11 (Round cable -Ø = 5.5 to 8.5 mm)
Weight	1750 g

## Emergency-buttons

### Surface version: NT-ATEX-AP Zone 0/20



Additional emergency button on top or below the cabin.

Order-No. 121.0322 (normally open ONLY)

### Safety degree

ATEX Zone 1&2 , 21&22 Gas: Ex II 2 G EEx ed IIC T6  
Dust: Ex II 2 D IP66 T80°C

### Input-/Output

Cable 1	Connection to or sub-communication-unit
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### Environment conditions

Operation temperature	-20 ° to 40 °C
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### Housing

Dimension	80 x 123 x 90 mm (L x W x H)
Feed through	1 x M16 ( Round cable -Ø = 4 to 9 mm)
Weight	370 g (completely mounted/without connection cable)

### Surface version: EA-IP-EC Zone 0



Order-No.	100.0750 (normally open/closed)
<b>Safety degree</b>	<b>Only use contact (not LED-backlight)</b>
<b>Housing</b>	
Dimension	52 x 50 x 35 mm (L x W x H)
Feed through	1 x M16 ( Round cable -Ø = 4 to 9 mm)
Weight	100 g (completely mounted/without connection cable)

## Built-in version: NT-ATEX-EB Zone 0/20



Additional emergency button (normally open) on top or below the cabin.

Order-No. 121.0323

### Safety degree

ATEX Zone 1&2 , 21&22 Gas: Ex II 2 G EEx ed IIC T6  
Dust: Ex II 2 D Ex tD A21 IP65 T80°C

### Input-/Output

Cable 1 Connection to or sub-communication-unit

### Environment conditions

Operation temperature -20 ° to 60 °C

### Housing

Dimension 148 x 38 mm (L x Ø) Montage-Ø = 30.5 mm  
Without the rear part length is 90mm. Using so the emergency button must be mounted in a secure housing!!

Feed through 1 x M16 ( Round cable -Ø = 4 to 9 mm)

Weight 140 g

## Components outside ATEX-Zone

### ATEX-Barrier:



Order-No. 121.0390

### Supply

POWER 3pol pluggable/screw terminal  
VIN1+ / VIN2+ / GND

Supply voltage 8 - 35V DC

Nominal power Max. 4 W

### Safety degree



II (1) GD [Ex ia] IIC  
[Ex ia] IIIC

### Input-/Output

ATEX to sub-communication unit LMK70-ATEX, optional  
- pluggable/screw terminal: 10pol cable

- RJ45 shielded

EXT to Leitronic-diallers

For third party products

AUDIO 3pol pluggable/screw terminal to:  
MIC+ / GND / LS+

UNI 10pol pluggable/screw terminal to:  
HORN max. 24 V / 50mA normally open (600hm)  
EC max. 24 V / 50mA normally open (600hm)  
PHONE max. 24 V active with signal  
SPEAK max. 24 V active with signal  
READY max. 24 V / 50mA normally closed (600hm)

### Indicators

EN81-70 Phone (yellow) / Speak (green)

STATE green Phone/Speak connected  
blue Speaker/Microphone connected

### Environment conditions

Operation temperature -20 ° to 60 °C

### Housing

Dimension 45 x 118 x 138 mm

Weight 340 g

## Supply

### Interruptible power supply USV-230VAC-12V-IP



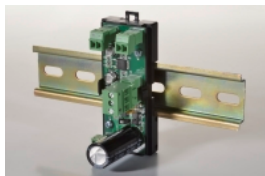
Order-No. 121.0117  
Order-No: 100.0117+ 118.0117 + 100.0880 mounted in IP65 housing  
Dimension 110 x 110 x 90 mm (L x W x H)

### DIN-adapter (DIN-Rail: 1 unit)



Order-No. 118.0117 118.0118  
Primary voltage 230 V AC/50 Hz 16 – 35 V DC  
Secondary voltage 14.3 V DC

### UPS interface EA-NSG (DIN-Rail: 1 unit)



Order-No. 100.0117  
Primary voltage 14.3 V DC  
Backup with 12 V-battery I.e. 100.0880  
Output permanent 12 V DC 400 mA for ATEX-Barrier & dialler  
switched 12 V DC 200 mA for emergency light

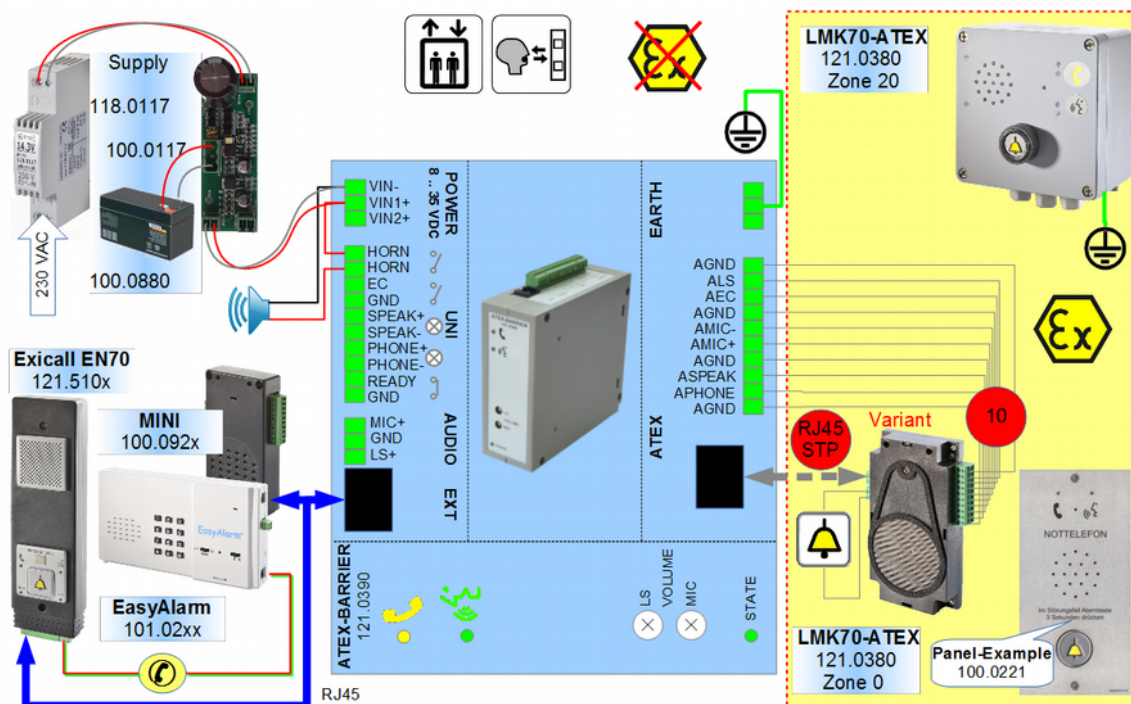
### 12V-battery



Order-No. 100.0880  
Voltage 12 V DC  
Capacity 1.2 Ah

# Wiring

## With Leitronic diallers



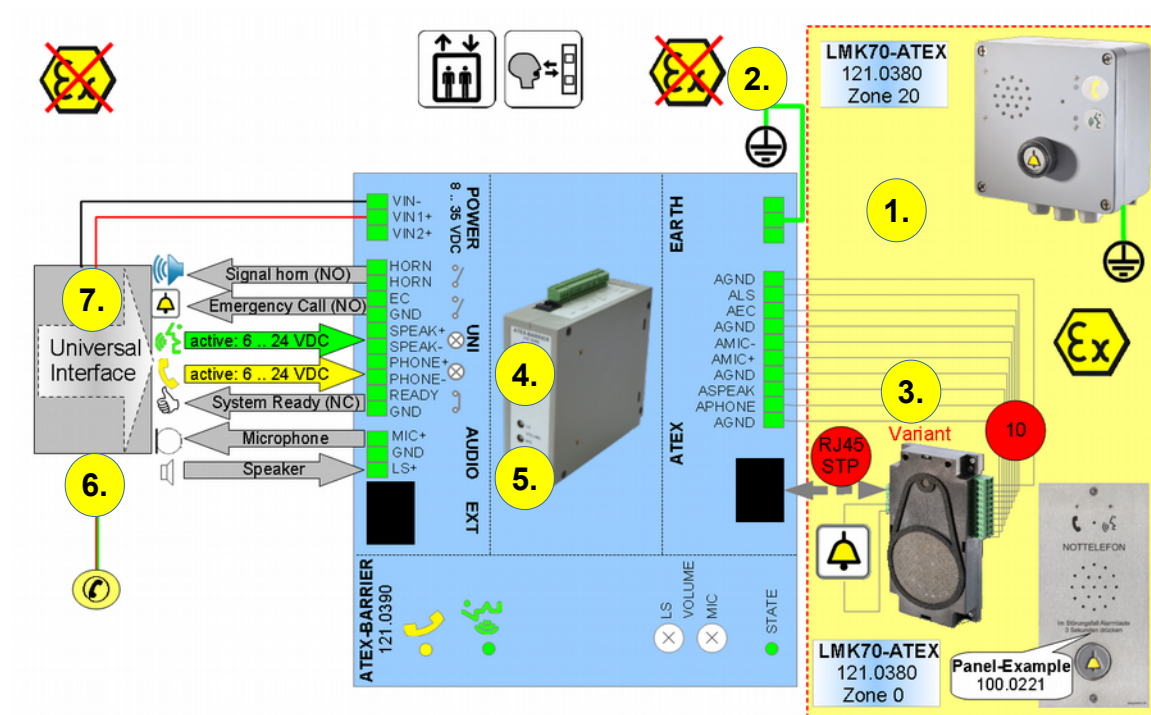
4.

1. Mount LMK70-ATEX  
Zone 20 121.0380: Connect ground-terminal with earth  
Zone 0 121.0370: Connect emergency button to terminal EC
2. Connect ATEX-Barrier EARTH to Earth
3. Connect LMK70-ATEX and ATEX-Barrier using either  
a) RJ45 shielded  
b) 10 pole cable

10polig	RJ45	Marking	Information
1,4,7,10	1,8	AGND	Ground
2	3	APHONE	Symbol Phone
3	6	ASPEAK	Symbol Speak
5	4	AMIC+	Microphone differential +
6	5	AMIC-	Microphone differential -
8	2	AEC	Emergency button
9	7	ALS	Loudspeaker

4. Connect EXT-ports of ATEX-Barrier and dialler Exicall EN70/EasyAlarm/MINI-V using RJ45-cable
5. Connect LINE of dialler Exicall EN70/EasyAlarm/MINI-V with analogue telephone line (PSTN) using RJ12-cable
6. Optional: connect alarm horn (Example powered by VIN)
7. Connect uninterrupted power supply to POWER: 8 to 35 V DC / max 4 W i.e. using EA-NSG (100.0117)+ 12V-battery (100.0880) and..
8. Supply voltage from DIN-adapter  
a) 118.0117 => 230 V AC / 50Hz  
b) 118.0118 => 16 – 35 V DC

## With third party diallers



1. Mount LMK70-ATEX  
 Zone 20            121.0380: Connect ground-terminal with earth  
 Zone 0            121.0370: Connect emergency button to terminal EC
2. Connect ATEX-Barrier EARTH to Earth
3. Connect LMK70-ATEX and ATEX-Barrier using either  
 a) RJ45 shielded  
 b) 10 pole cable



10polig	RJ45	Marking	Information
1,4,7,10	1,8	AGND	Ground
2	3	APHONE	Symbol Phone
3	6	ASPEAK	Symbol Speak
5	4	AMIC+	Microphone differential +
6	5	AMIC-	Microphone differential -
8	2	AEC	Emergency button
9	7	ALS	Loudspeaker

4. Connect Inputs/Outputs between dialler and UNI-port of ATEX-Barrier

PIN	Marking	max. voltage	max. current	Specification
1	HUPE	24V	50 mA	Potential free contact (600hm) closes as long as emergency button on LMK70-ATEX is pressed
2	HUPE			
3	EC	24V	50mA	Potential free contact (600hm) closes as long as emergency button on LMK70-ATEX is pressed Same ground as Audio-Port
4	GND			
5	SPEAK(+)	24V	25mA	Signal input: active from 6 to 24 V DC
6	SPEAK(-)			
7	PHONE(+)	24V	25mA	Signal input: active from 6 to 24 V DC
8	PHONE(-)			

9	READY	24V	50mA	Contact (60Ohm) is closed when LMK70-ATEX is ready. Same ground as Audio-Port
10	GND			

5. Connect microphone/speaker between dialler and AUDIO of ATEX-Barrier

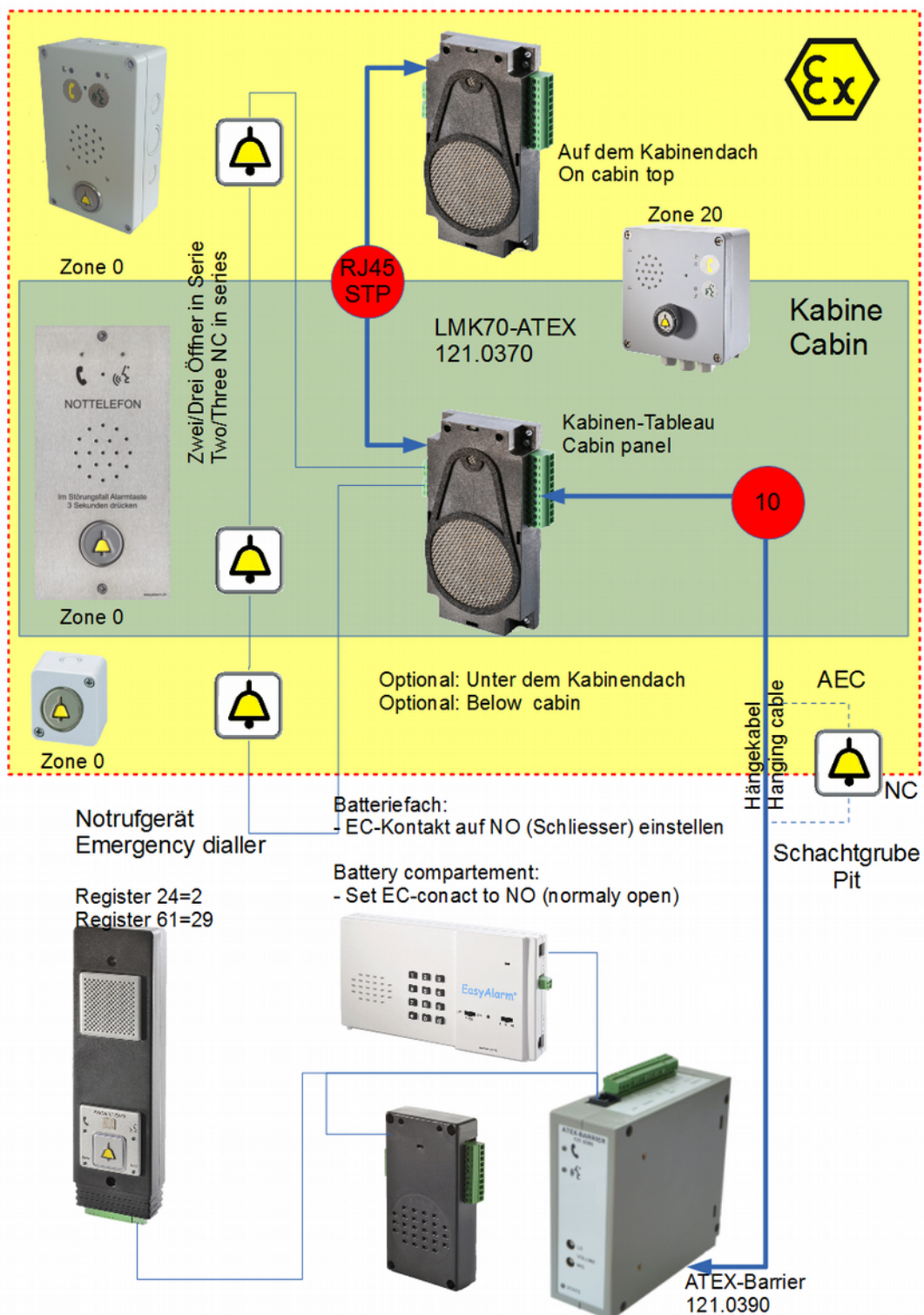
PIN	Marking	max. voltage	max. current	Specification
1	MIC+			Microphone  Adjust level using MIC_VOLUME
2	GND			Same ground as READY
3	LS+			Loudspeaker  Adjust level using LS_VOLUME

6. Connect dialler to telephone line (PSTN)

7. Connect uninterrupted power supply to POWER: 8 to 35 V DC / max 4 W

# Using two sub-communication-units (NC type)

Standard (cable break would be registered)

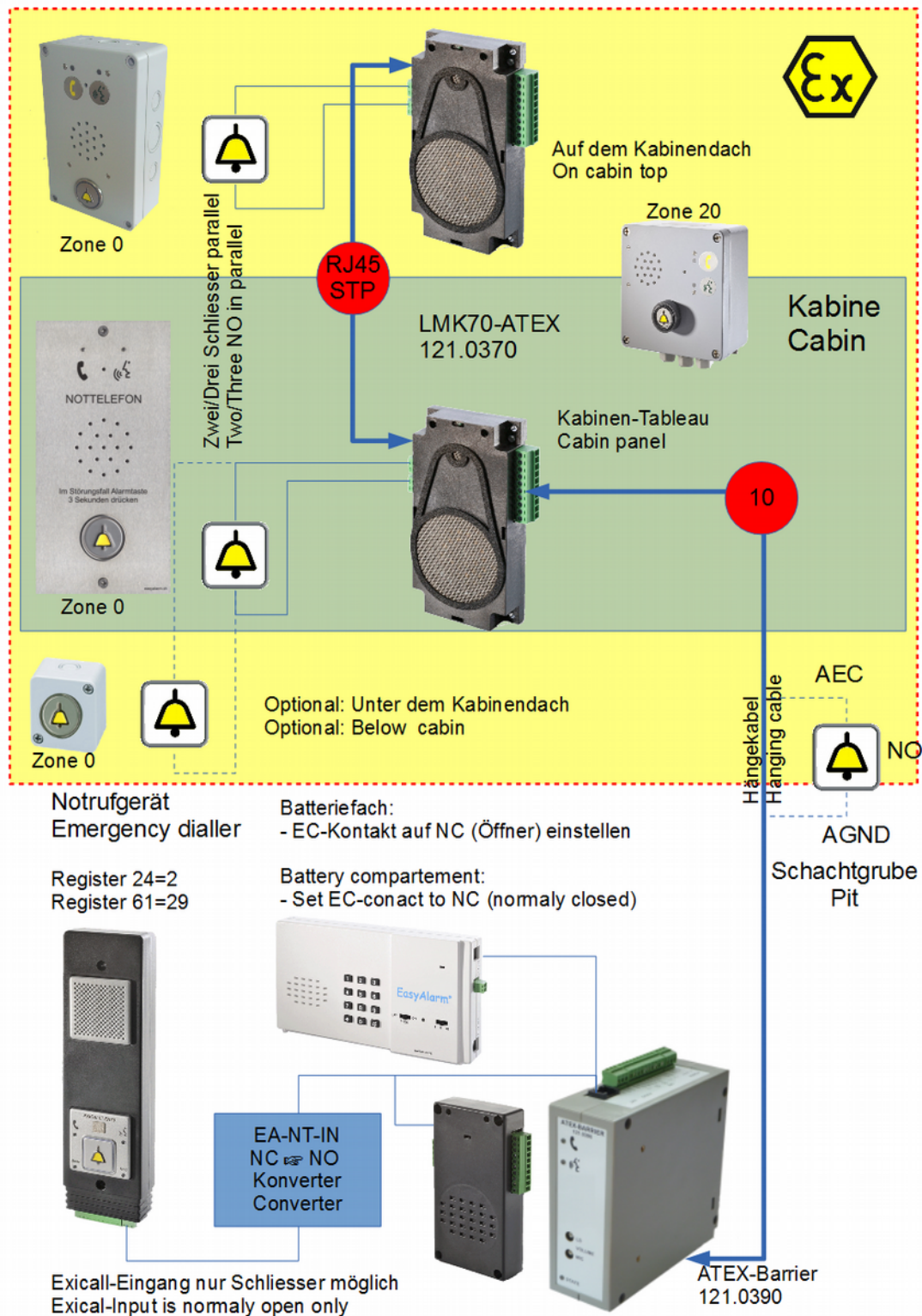


Optional:

Normally closed button in pit (ATEX-Zone)  
loop in AEC wire of cable

### Using two sub-communication-units (NO type)

Better use NC version as cable break would not be registered (NO)



Optional:

Normally open button in pit (ATEX-Zone)

connect between PIN AEC and AGND of 10-wire cable

# Declaration of Conformity

## Leitronic AG

**EU-Konformitätserklärung**  
*Déclaration UE de conformité*  
EU-Declaration of conformity  
**SEV 13 ATEX 0179 X**

Wir / Nous / We,

Leitronic AG  
Engelsostrasse 16  
CH-5621 Zufikon  
Switzerland

**erklären in alleiniger Verantwortung, dass die**  
*déclarons de notre seule responsabilité que les*  
bearing sole responsibility, hereby declare that the

explosionsgeschützten Universalsprechstelle  
interphone antidéflagrant universel  
explosionproof universal interphone  
**Typ / Type / Type**

<b>LMK70-ATEX (Zone 0)</b>	<b>121.0370</b>
<b>LMK70-ATEX (Zone 0/20)</b>	<b>121.0380</b>
<b>ATEX-BARRIERE</b>	<b>121.0390</b>

**den grundlegenden Sicherheits- und Gesundheitsschutzanforderungen nach Anhang II der untenstehenden Richtlinie entspricht.**

*répond aux exigences essentielles en ce qui concerne la sécurité et la santé fondamentales selon l'annexe II des directives suivantes.*

satisfies the fundamental health and safety protection requirements according to Annex II of the directive named below.

**Bestimmungen der Richtlinie**  
*Désignation de la directive*  
Provisions of the directive

**Titel und/oder Nummer sowie Ausgabedatum der Normen**  
*Titre et/ou no. ainsi que date d'émission des normes*  
Title and/or no. and date of issue of the standards

**2014/34/EU: Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen**  
*2014/34/UE: Appareils et systèmes de protection destinés à être utilisés en atmosphère explosive*  
2014/34/EU: Equipment and protective systems intended for use in potentially explosive atmospheres

**EN 60079-0**  
**EN 60079-11**  
**EN 60079-26**

**2014/30/EU: Elektromagnetische Verträglichkeit**  
*2014/30/UE: Compatibilité électromagnétique*  
2014/30/EU: Electromagnetic compatibility

**EN 61000-6-2:2011-06**  
**EN 61000-6-4:2011-09**

**2011/65/EU: RoHS Richtlinie**  
*2011/65/UE: Directive RoHS*  
2011/65/EU: RoHS Directive

**EN 50581:2012**

**Folgende benannte Stelle hat das Konformitätsbewertungsverfahren nach der Richtlinie 94/9/EG Anhang III durchgeführt:**  
*L'organe reconnu ci-après a procédé à l'évaluation de la conformité prescrite par la directive 94/9/CE de l'annexe III:*  
The following notified body has carried out the conformity assessment procedure according to directive 94/9/EC, annex III:

**SEV**  
**Electrosuisse**  
**Luppenstrasse 1**  
**Postfach 269**  
**CH-8320 Fehraltorf**

**Folgende benannte Stelle hat die Bewertung des Moduls "Qualitätssicherung Produktion" nach der Richtlinie 94/9/EG Modul G Anhang IX durchgeführt:**  
*L'organe reconnu ci-après a procédé à l'évaluation de la conformité prescrite par la directive 94/9/EG du Modul G annexe IX:*  
The following notified body has carried out the conformity assessment procedure according to directive 94/9/EG Modul G, annex IX:

**SEV**  
**Electrosuisse**  
**Luppenstrasse 1**  
**Postfach 269**  
**CH-8320 Fehraltorf**

**Zufikon,**  
**Ort und Datum 26.6.2016**  
*Lieu et date*  
Place and date

**Silvan Tognella**  
**Geschäftsführender Inhaber**  
*Administrateur délégué*  
Managing proprietor



# EC-Type Examination Certificate



## (1) **EG-Baumusterprüfbescheinigung**

- (2) Geräte und Schutzsysteme zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen - **Richtlinie 94/9/EG**
- (3) Prüfbescheinigungsnummer: **SEV 13 ATEX 0179 X**
- (4) Gerät: Notruftelefon  
Typ: LMK70-ATEX (ZONE 0)  
LMK70-ATEX (ZONE 0/20)  
ATEX-BARRIERE
- (5) Hersteller: Leitronic AG
- (6) Anschrift: Engellostrasse 16, CH-5621 Zufikon
- (7) Die Bauart dieses Gerätes sowie die verschiedenen zulässigen Ausführungen sind in der Anlage zu dieser Prüfbescheinigung festgelegt.
- (8) Electrosuisse SEV, benannte Stelle Nr. 1258 nach Artikel 9 der Richtlinie des Rates der Europäischen Gemeinschaften vom 23. März 1994 (94/9/EG), bescheinigt die Erfüllung der grundlegenden Sicherheits- und Gesundheitsanforderungen für die Konzeption und den Bau von Geräten und Schutzsystemen zur bestimmungsgemässen Verwendung in explosionsgefährdeten Bereichen gemäss Anhang II der Richtlinien.  
Die Ergebnisse der Prüfung sind im vertraulichen Prüfbericht 13-Ex-0061.01 festgehalten.
- (9) Die grundlegenden Sicherheits- und Gesundheitsanforderungen werden erfüllt durch Übereinstimmung mit:  
**EN 60079-0:12 + A11:13      EN 60079-11:12      EN 60079-26:07**
- (10) Falls das Zeichen «X» hinter der Bescheinigungsnummer steht, wird auf besondere Bedingungen für die sichere Anwendung des Gerätes in der Anlage zu dieser Bescheinigung hingewiesen.
- (11) Diese Baumusterprüfbescheinigung bezieht sich nur auf Konzeption und Bau des festgelegten Gerätes gemäss Richtlinie 94/9/EG. Weitere Anforderungen dieser Richtlinie gelten für die Herstellung und das Inverkehrbringen des Gerätes.
- (12) Die Kennzeichnung des Gerätes muss die folgenden Angaben enthalten:

**Siehe Seite 3 (19) Kennzeichnung**



**Electrosuisse  
Benannte Stelle ATEX**

Martin Plüss  
Zertifizierung Produkte



Fehraltorf, 25.03.2014

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ZAM3d

(13) **Appendix**

(14) **EC-Type Examination Certificate**

(15) Description of the equipment

The Devices from Leitronic are conceived as a tele-alarm call system. In case of activation they build up a connection to an alerting post. Additionally there are some other telephone stations.

The system consists a combination with "ATEX-BARRIERE" and up to two "LMK70-ATEX"

The "LMK70-ATEX" exist in two versions one with a simple plastic enclosure, that provide an ingress protection of IP20. This is intended to mount behind a front panel for additional protection.

For heavier application there is a version built in a massive dust tight aluminium enclosure with additional ingress protection of IP64.

The "ATEX-BARRIERE" itself is not intended to install in an dangerous area.

Um 8 ... 35 VDC

(16) Test Report 13-Ex-0061.01

(17) Special conditions for safe use

1. The LMK70-ATEX (ZONE 0) and LMK70-ATEX (ZONE 0/20) are only intended for use together with the ATEX-BARRIERE certified in the certificate SEV 13 ATEX 0179 X

2. For the connection cables between the following values of remains:

Maximum cable inductance of connecting cable:		
Gas-Group	One LMK70-ATEX	Two LMK70-ATEX
IIC	0.55 mH	0.2 mH
IIB	4.15 mH	3.8 mH
IIA	8.15 mH	7.8 mH




Maximum cable capacitance of connecting cable:		
Gas-Group	One LMK70-ATEX	Two LMK70-ATEX
IIC	32 µF	21 µF
IIB & IIA	489 µF	478 µF

3. The maximal ambient temperature range is 0 °C ... +40 °C

(18) Fundamental essential health and safety requirements

Fulfilled by the standards applied.

(19) Marking:

	I 1 G	Ex ia IIC T4 Ga
resp.		
	II 1 GD	Ex ia IIC T4 Ga Ex ia IIIC T 60 °C Da IP64
resp.		
	II (1) GD	[Ex ia] IIC [Ex ia] IIIC



**Electrosuisse**  
**Notified Body ATEX**

Martin Plüss  
Product Certification




Fehraltorf, 2014-03-25

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