

# Technical Data external Power Unit for Pilot Burner GFI



Fig. 1 External power unit Ex-Zone I

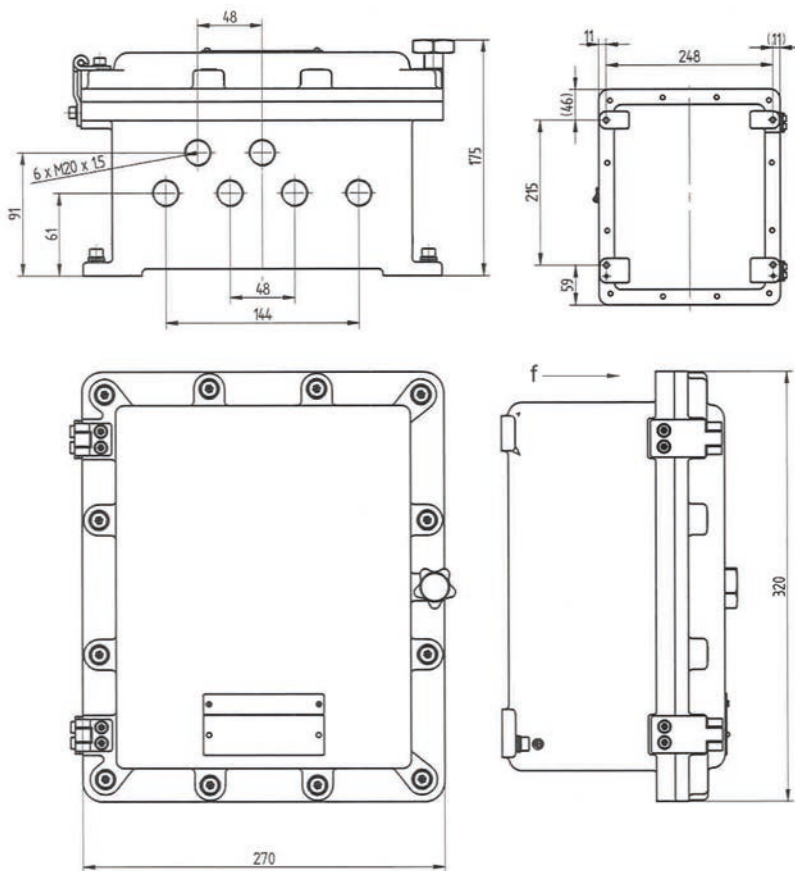


Fig. 2 Dimensions external power unit for Ex-Zone I

## Technical Data

Explosion protection	II 2 G Ex db IIB + H2 T6/T5 GbII 2 D Ex tb IIIC T80 °C...T95 °C Db
Material	copper-free aluminium, stainless steel 1.4404/316
Certificates/Test certificates <i>Certificate holder Rose Systemtechnik</i>	ITS 15 ATEX 18302X, IECEx ITS 15.0041X
Electrical safety	IP 66 according to EN 60529
Impact resistance	7 Joule according to EN 60079-0
Temperature range	-20 ... +60 °C / -4 ... +140 °F

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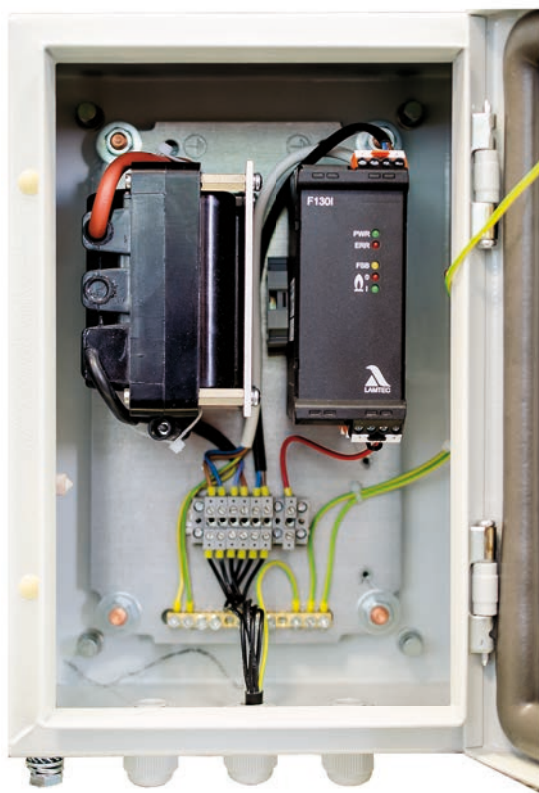


Fig. 3 External power unit safe area

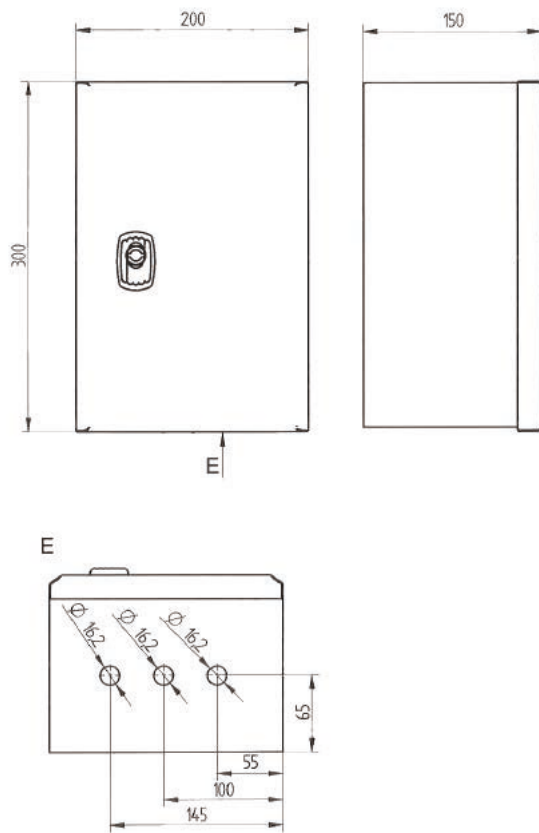


Fig. 4 Dimensions external power unit safe area

### Technical Data

Material	varnished steel RAL7035
Degree of protection	IP 66
Temperature operating range	-20 ... +60 °C / -4 ... +140 °F

## Technical Data external Power Unit for Pilot Burner GFI

### NOTICE

The electrical data are identical for all devices, only the air and gas volume flows differ.

#### Design A and B: Power supply voltage connection

<b>Electrical data</b>	120/230 VAC (within the scope of the EU Gas Appliances Directive), cf. rating plate Mains tolerance according to DIN EN 60730-1
Mains frequency	50/60 Hz
Power consumption	at rated voltage = 230 V 230 VA ignition transformer, 10 VA flame scanner at rated voltage = 120 V, 192 VA ignition transformer, 10 VA flame scanner
Ignition transformer duty cycle	switch-on duration = 16 % on 1 min. (10" on; 50" off) - 20 °C < Ta < 60 °C
External device fuse (mandatory)	4 A

#### Integrated flame scanner

SIL-classification level	SIL 3
<b>Ionisation input</b>	
Ionisation current	from 1 $\mu$ ADC flame ON
Operating mode	continuous operation capable
<b>Flame signal output contact</b>	
Contact type	safety-oriented, floating contact
Contact type	NO, for "flame on", the contact is closed
Level of protection	SKII, base isolation for the status signal
Permissible switching voltage <sup>1</sup>	$\leq 230$ VAC $\leq 48$ VDC
Permissible switching current <sup>1, 2</sup>	max. 0.5 A cos $\varphi$ 0.4 Min. 10 mA
Contact fusing	0.5 AT (internal, soldered)
<b>Safety time (FFDT)</b>	
Response time in the event of the flame failure	t <sub>V</sub> off configurable via DIP switches to 1 s or 3 s (standard 1 s)
Switch-on time	t <sub>V</sub> on $\leq 1$ s
<b>Measuring shunt</b>	runs mains potential
Transmission ratio of measurement voltage to ionisation current	10 mV (DC) = 1 $\mu$ A (DC)
Basic error	$\leq 2$ %
Electrical safety	contact protection by means of protective impedances
Min. impedance of the connected measuring device	1 M $\Omega$

<sup>1</sup> The product is not permitted to be transported, stored or operated outside the specified range. Doing so will invalidate any guarantees with regard to safety relevant functions.

<sup>2</sup> Provide external spark quenching for inductive loads, do not connect any capacitive loads.

### NOTICE

Use device manufacturer recommended silicone shielded cable. The device manufacturer will only guarantee proper functioning if this cable is used. This cable is available in any length up to the maximum cable length.

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### Design B and C: Connection of external flame scanner to the ionisation electrode

Recommended cable specifications	
Cable type	RG62 coaxial cable
Cable lengths	< 10 m / 32,8 ft
Inner conductor	solid copper-plated steel wire, uninsulated $\varnothing$ : 0.64 ± 0.025 mm / 0.025 ± 0,00098 in
Wire insulation	PE hollow space insulation (helix made from PE strands with PE hose on top) $\varnothing$ : 3.7 mm / 0.14 in
Shield	braided from bare Cu wires, 96 % coverage (nominal value)
Outer shell	PVC, black outside diameter: 6.15 ± 0.18 mm / 0.24 ± 0.0070 in)
Conductor resistance	max. 144 Ohm/km
Operating capacity	max. 43 pF/m (1 kHz)
Rated voltage	0.8 kV (50 Hz)
Test voltage	2 kV
Temperature range	-40 ... 80 °C / -40 ... 176 °F (fixed installation)

### Design B and C: Power supply voltage connection to the external ignition transformer

Recommended cable specifications	
Cable lengths	max. 200 m / 656.168 ft
Cable cross-section	3 x 1.0 mm <sup>2</sup> / 3 x 17 AWG
Isolation	PVC
Temperature range	-40 ... +90 °C / -40 ... 194 °F

### Design B and C: Connection of external ignition transformer to the ignition electrode

Electrical data	
Ignition voltage to earth	max. 8 kV (at rated voltage = 230 V) max. 7 kV (at rated voltage = 120 V) For Ex Zone 2 applies: max. 5 kV for both voltage ranges
Recommended cable specifications	
Cable lengths	max. 20 m / 65.62 ft
Cable cross-section	1 x 1.0 mm <sup>2</sup> / 1 x 17 AWG
Isolation	Silicone, red-brown
Temperature range	-60 ... +180 °C / -76 ... +356 °F

### Design B and C: Ground cable

Recommended cable specifications	
Cable lengths	max. 200 m / 656.168 ft
Cable cross-section	1 x 1.5 mm <sup>2</sup> / 1 x 15 AWG and/or according to regional regulation

### Mode of operation

Permitted mode of operation	intermittent operation/continuous operation
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### Operating condition

Relative humidity	max. 85 % (non-condensing)
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### Environmental conditions

<b>Operation</b>	Permissible temperature range	Safe Area: -20...+60 °C / -4 ... +140 °F (Standard, without display) -40...+60 °C / -40 ... +140 °F (Special, without display) 0...+60 °C / -32 ... +140 °F (with display) Ex-Zone 2: -20...+60 °C / -4 ... +140 °F
<b>Transport</b>	Permissible temperature range	-20 ... +60 °C / -4 ... +140 °F
<b>Storage</b>	Permissible temperature range	-20 ... +60 °C / -4 ... +140 °F
<b>Degree of protection</b>	DIN EN 60529	IP65 / NEMA 4 / NEMA 4X



**DANGER!**

### High voltage on the bare ignition electrode!

- ▶ Pilot burner is only permitted to be operated with correct earthing.  
With version C in particular there is a danger of death when removing or omitting the earthing, the housing earthing must be connected directly to the ignition transformer earthing!
- ▶ In the event of damage to the earthing insulation, the device should be shut down; further operation without repair is not permitted.

# Technical Data external Power Unit for Pilot Burner GFI

## Order Information

Description / Type	Order-no.
External power unit GFI48 / GFI70 / GFI89	646R0500...
<b>A10 "RANGE OF APPLICATION"</b>	
<b>Selection</b>	
SAFETY AREA (NO EXPLOSIVE ATMOSPHERE)	SAF
Ex-ZONE 2	EX2
Ex-ZONE 1	EX1
<b>A40 "IGNITION TRANSFORMER"</b>	
<b>Selection</b>	
WITHOUT IGNITION TRANSFORMER, EXTERNAL IGNITION	0
INTEGRATED IGNITION TRANSFORMER	TR
<b>A45 "IONIZATION FLAME MONITOR"</b>	
<b>Selection</b>	
WITHOUT	0
INTEGRATED IONIZING FLAME MONITORING (IFM), 0 ... 60 °C / 32 ... 140 °F, SIL3 AND RELAY OUTPUT MAKE CONTACT (NO) 230 VAC/0.5 A, <b>FFDT 1S</b>	IFM
INTEGRATED IONIZING FLAME MONITORING (IFM), 0 ... 60 °C / 32 ... 140 °F, SIL3 AND RELAY OUTPUT MAKE CONTACT (NO) 230 VAC/0.5 A, <b>FFDT 3S</b>	IFM3
<b>A50 "SUPPLY VOLTAGE"</b>	
<b>Selection</b>	
230 VAC, 50/60 Hz	230VAC
120 VAC, 50/60 Hz	120VAC
<b>A60 "CONNECTION TYPE"</b>	
<b>Selection</b>	
2 m / 6.6 ft CABLE, 7-CORE FIRMLY CONNECTED WITH FREE CABLE ENDS	2M
5 m / 16.4 ft CABLE, 7-CORE FIRMLY CONNECTED WITH FREE CABLE ENDS	5M
10 m / 32.81 ft CABLE, 7-CORE FIRMLY CONNECTED WITH FREE CABLE ENDS	10M



The information in this publication is subject to technical changes.



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