



Operation and instruction manual  
Control and indication boxes INDEX.E.Z.x

Polyamide



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## Purpose of these instructions

Working in hazardous areas, the safety of personnel and plant depends on complying with all relevant safety regulations. Assembly and maintenance staff working on installations therefore have a particular responsibility. They require precise knowledge of the applicable standards and regulations. These instructions give a brief summary of the most important safety measures. It supplements the corresponding regulations which the staff must study.



## SAFETY INSTRUCTIONS

Use the explosion-proof box only for its intended purpose. Explosion-proof boxes are not suitable for Zone 0 hazardous areas! Incorrect or impermissible use or non-compliance with these instructions invalidates our warranty provision. No changes to the device impairing its explosion protection are permitted. Use the explosion-proof box only if it is clean and undamaged. Any damage can invalidate the Ex-protection.

Observe the following during installation and operation:

- National safety regulations
- National accident prevention regulations;
- National installation regulations(e.g. IEC 60079-14);
- Generally recognized technical regulations;
- Safety guidelines in these operating instructions;
- Characteristic values given on explosion-proof switch module.

## Applicable scope

Transport and storage in original packaging only. National safety and installations regulations and the generally accepted rules of engineering practice must be observed when mounting and operating this equipment.

## Technical data

Ex mark:  $\text{Ex}$  II 2G Ex e.....[ia....] II Gb  
 $\text{Ex}$  II 2D Ex tb ..... IIIC Db

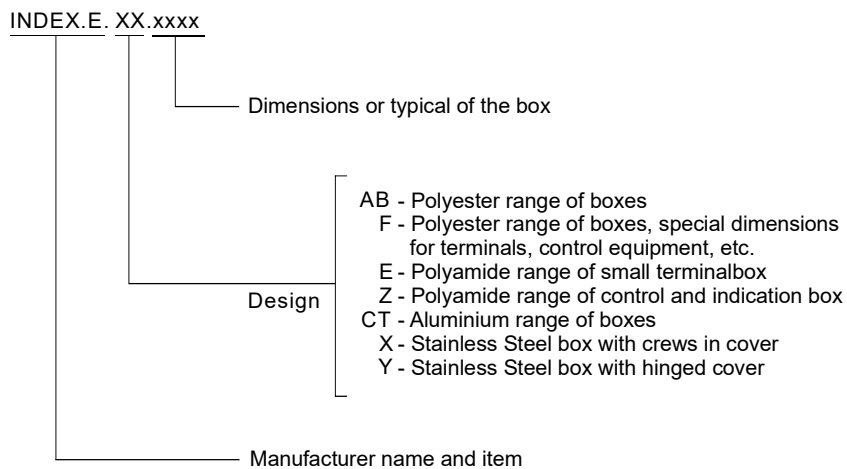
possible explosion-proof protection - d, e, m, ia / ib / etc.  
 possible temperature class - T4, T5, T6 - 85°C, 100°C, 135°C

Can be used in zone 1,2, 21 en 22  
 Ambient temperature:  $-20^{\circ}\text{C} \leq T_a \leq 40^{\circ}\text{C}$   
 Optional temperature:  $-40^{\circ}\text{C} \leq T_a \leq 80^{\circ}\text{C}$   
 Degree of protection: IP65 / IP66  
 Certificate CML 18ATEX 3276X  
 IECEx CML 18.0132X

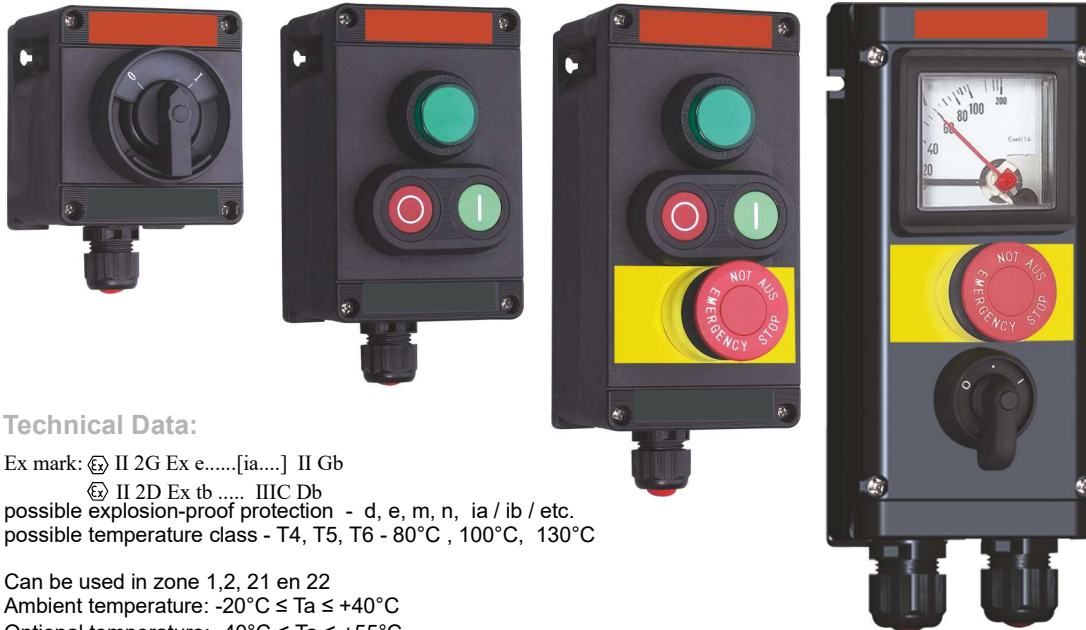
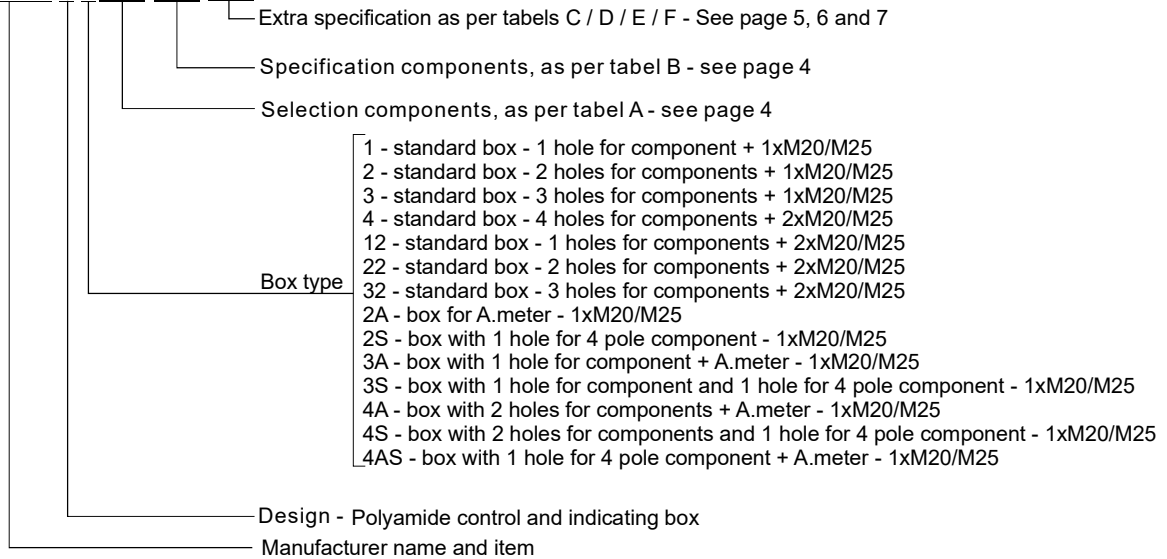
## Conformity to standards

The explosion-proof box is designed and manufactured according to standard of ISO 9001. The explosion-proof box is in conformity with ATEX directive and the standards IEC60079, EN60079 and IEC61241, EN61241

## Model and implication of INDEX.E



INDEX.E.Z.x xxxx xxxx xxxx



## Technical Data:

Ex mark:  $\text{Ex II 2G Ex e.....[ia....] II Gb}$   
 $\text{Ex II 2D Ex tb ..... IIIC Db}$   
 possible explosion-proof protection - d, e, m, n, ia / ib / etc.  
 possible temperature class - T4, T5, T6 - 80°C, 100°C, 130°C

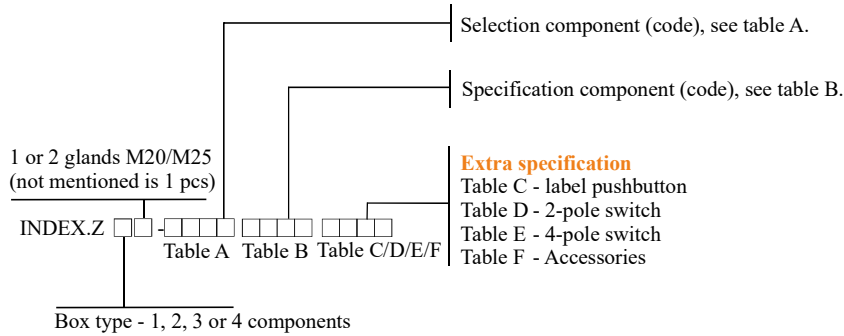
Can be used in zone 1,2, 21 en 22  
 Ambient temperature:  $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$   
 Optional temperature:  $-40^{\circ}\text{C} \leq T_a \leq +55^{\circ}\text{C}$   
 Degree of protection: IP65 / IP66  
 Voltage / current max: 400V / 16A  
 Torque cover: 0.5Nm.

Complete composite enclosures with ATEX or IECEx certificate can only be provided if all work is carried out by employees of INDEX ELEKTRO in the INDEX ELEKTRO workshop or service office.

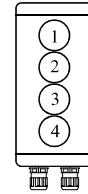
### Following Ex certified components can be built inside Ex e boxes

- Pushbuttons series and contact - type Z0201 o.e.
- Pilot lights modules - type Z0202 o.e.
- Potentiometer modules - type Z0203 o.e.
- Ammeter, or Voltmeter - type Z0205 o.e.
- Illuminated pushbutton module - type Z0203 o.e.
- Fuses with holder - type Z0509 o.e.
- Fuses for direct mounting - type Z0804 o.e.
- Buzzer (with or without flash) type Z1208 or TP-MS75M-83 o.e.
- Terminals Ex e - as Phoenix UT, UK or MBK type, Weidmuller WDU or WDE type, Wago etc
- Earth and connection pin like Z0307 or Z0303
- Cable gland, reducer etc. polyamide series IE2, Z0220 o.e.
- Cable gland, reducer etc. brass series IE3, Z0221, INDEX.IR, o.e
- Cable gland, reducer etc. Stainless Steel series INDEX.IR o.e.
- Breathers





**INDEX.Z - Tabel A,B,C**  
**INDEX.Z - Table A,B,C**



1 2 3 4  
 1 = 1e (top)  
 2 = 2e  
 3 = 3e  
 4 = 4e (bottom)

### Selectie component - tabel A

Code	Omschrijving	
1	Pushbutton	Z0201 - P1
2	Double pushbutton	Z0201 - P2
3	Emergency - push pull	Z0201 - P3
4	Mushroom button	Z0201 - P4
5	Pushbutton with key	Z0201 - Y1
6	2-Pole switch as per tabel D	Z0201 - x
7	4-Pole switch as per tabel E	Z0201 - x
8	Pilot light	Z0202
9	Blind plug	Z0201 - B
A	Ammeter	Z0205 - x
B	Emergency stop button with key	Z0201 - Y0
C	Illuminated pushbutton NO	Z0212 - 4
D	Illuminated pushbutton NC	Z0212 - 3
E	Potentiometer	Z0203 - x
F		
G	Emergency - turn to release - 40mm.	Z0201 - P6E
H	Emergency - turn to release - 55mm.	Z0201 - P7
J	Pushbutton - turn to relaise - black	Z0201 - P6B

### Specificatie component - tabel B

Code	Omschrijving	
1	Contact 1 x NO/1xNC	Z0201 - 60
2	Contact 2 x NC	Z0201 - 61
3	Contact 2 x NO	Z0201 - 62
4		
5	Pilot light red	Z0202 - 601 - LR
6	Pilot light green	Z0202 - 601 - LG
7	Pilot light yellow	Z0202 - 601 - LY
8	Pilot light blue	Z0202 - 601 - LB
9	Pilot light white	Z0202 - 601 - LW
A	Potentiometer 1.000 Ohm	Z0203 - 604
B	Potentiometer 2.000 Ohm	Z0203 - 605
C	Potentiometer 5.000 Ohm	Z0203 - 606
D	Potentiometer 10.000 Ohm	Z0203 - 607
E	Potentiometer 100.000 Ohm	Z0203 - 608
F	Contact 2 x NO/2x NC	Z0201 - 650
G	Contact 4 x NC	Z0201 - 651
H	Contact 4 x NO	Z0201 - 652
I	Contact 3 x NO/1x NC	Z0201 - 653
J	Contact 1 x NO/3x NC	Z0201 - 654

## Label Pushbutton - tabel C



Code	Engraving	Color	Color text	
Z0201 - P - A		green		
Z0201 - P - B	I	green	white	
Z0201 - P - C	ON	green	white	
Z0201 - P - D	START	green	white	
Z0201 - P - E		red		
Z0201 - P - F	O	red	white	
Z0201 - P - G	OFF	red	white	
Z0201 - P - H	STOP	red	white	
Z0201 - P - I		white		
Z0201 - P - J	II	white	black	
Z0201 - P - K	↑	white	black	
Z0201 - P - L	Start	white	black	
Z0201 - P - M	Stop	white	red	
Z0201 - P - N	O		red	
Z0201 - P - O	↑↑		black	
Z0201 - P - P		yellow		
Z0201 - P - Q	II	yellow	white	
Z0201 - P - R		black		
Z0201 - P - S	+	black	white	
Z0201 - P - T	-	black	white	
Z0201 - P - U	I	black	white	
Z0201 - P - V	II	black	white	
Z0201 - P - W	III	black	white	
Z0201 - P - X	IV	black	white	
Z0201 - P - Y		bleu		
Z0201 - P - Z	Reset	blue	white	


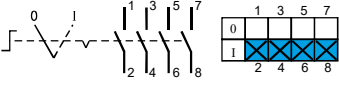
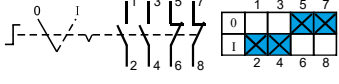
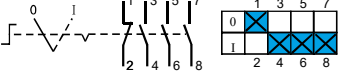
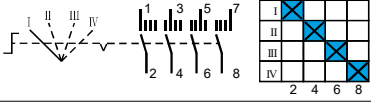



Illustration	Label	Contacts	Code				
			KA	SA	YA		
 <p>Railmountage</p>	0 I II			KA	SA	YA	
	I 0 II			KB	SB	YB	
	I 0 II			KC	SC	YC	
	0 I II			KD	SD	YD	
	0 I			KE	SE	YE	VE WE
	I II			KF	SF	YF	WF
	0 I			KG	SG	YG	
	I II			KH	SH	YH	
	0 • I			KJ	SJ	YJ	
	I 0 II			KK	SK	YK	
	I 0 II			KL	SL		

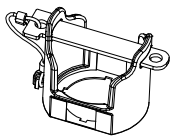


- Handle Ø39mm - K -
- Knob Ø60mm - S -
- Key switch - Y -
- toggles switch Black - V -
- toggles switch yellow/red - W -

## Specification 4-pole switch - table E

Illustration	Label	Contacts	Code
 <p>Base mount</p>	0 I		A
	0 I		B
	0 I		C
	I II III IV		D
	I 0 II		E

## Selection component for emergency - table F



Z - 4019 / 2 - 7

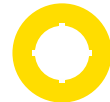
Code	Description	
1	Underplate rectangle - 80 x 40	Z4003/1
2	Underplate round 55 mm	Z4003/2
3	Emergency safety cap	Z4019 - 2-7
4	safety cap	Z4019 - 1-7



Z - 4019 / 1 - 7



Z - 4003/2



Z - 4003/1





## Label 5 -1 for boxes Z...

	Explosion proof control box - 2019	CE2503
	Type INDEX.E.Z	
www.indexelektro.nl	II2G Ex db eb IIC T6 Gb	CML 18ATEX3276X
250VAC/10A	II2D Ex tb IIIC T80°C Db	Ref.no.
110VDC/1A - IP66	T.amb.-40°C to +40°C	

Enclosure type	Label	Enclosure type	Label
INDEX.E.Z.1	5-1	INDEX.E.X.1	5-2
INDEX.E.Z.2	5-1	INDEX.E.X.2	5-2
INDEX.E.Z.3	5-1	INDEX.E.X.3	5-2
INDEX.E.Z.4	5-1	INDEX.E.X.4	5-2
INDEX.E.Z.12	5-1	INDEX.E.X.1L	5-2
INDEX.E.Z.22	5-1	INDEX.E.X.2L	5-2
INDEX.E.Z.32	5-1	INDEX.E.X.3L	5-2
INDEX.E.Z.2A	5-1	INDEX.E.X.4L	5-2
INDEX.E.Z.2S	5-1		
INDEX.E.Z.3A	5-1		
INDEX.E.Z.3S	5-1		
INDEX.E.Z.4A			
INDEX.E.Z.4S			
INDEX.E.Z.4AS			

### Safety and Maintenance Instruction

This Safety Instruction is meant for skilled electricians and instructed personnel in accordance with national legislation, including the relevant standards and, where applicable, in accordance with IECEx 60079 and EN60079 on electrical apparatus for explosive atmosphere. Read carefully this instruction before installation or maintenance.

After each opening (at least once a year for inspection) the following points must be checked/performed:

- Compliance with permitted ambient temperatures;
- Damages on the box
- Damages on the gaskets
- Clean upper dust and avoid dust accumulating.

1. Enclosures must be installed and maintained in accordance with all standards regarding electrical installations in hazardous areas classified for explosive gas and/or dust atmospheres.
2. Avoid any dust accumulation.
3. The boxes must not be operated in zone 0 hazardous areas.
4. Ambient temperature, maximum voltage and maximum current must not exceed mentioned values on the tagplate.
5. Changes of the design and modifications to the equipment are not permitted.
6. The boxes shall be operated as intended and only in undamaged and perfect condition.
7. If box or part of box is damaged, the power has to be disconnected immediately.  
Contact Index Elektro BV for further instructions. It is not allowed to repair the box without the written permission of Index Elektro BV.
8. Repairs may only be carried out by qualified electrician from INDEX ELEKTRO BV.
9. All operations of installation, replacement or inspection must **not** be performed when electrical circuit is alive.
10. All technical data indicated on the tag plate of the box have to be observed.  
Also all other information on tag plate or extra text plate has to be respected.
11. Accessories used for cable entries must meet IECEx 60079 and EN 60079 standards.  
Their minimum protection must be IP54. When gaskets are used to maintain raintightness, be sure the gaskets are mounted in their adequate locations.
12. All unused holes for cable entries etc., have to be closed with appropriate plugs, which are Atex / IECEx certified.
13. Handle carefully all joint parts so to avoid damaging coupling surface.
14. If cover of Ex box is fitted with bolts, all bolts must be present and completely screwed.  
(For tightening moment of bolts of Ex box see the sheets before, if one of these conditions is not regarded, the enclosure has to be disconnected from power supply immediately, because the enclosure is not explosion-proof. In case of lost bolts we recommend to replace them with new screws. Use screws with same diameter, pitch and length of thread.
15. Disconnect power immediately if a coloured lens of a signalling light is damaged or broken, until a new lens has been fitted.
16. All Ex enclosures with external earth bolt must be connected to earth with an external earth conductor with adequate cross section (at least 4 mm<sup>2</sup>).
17. All metal parts in and outside the box must be connected to earth (such as cable glands etc.).
18. When a metal cable gland used in polyester or polyamide boxes an external earth bolt is required.
19. The respective valid national regulations shall be observed