



Operation and instruction manual
Ex e Junction and Controlboxes type INDEX.E.CT.xx

Aluminium boxes



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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: Ex II 2G Ex e.....[ia....] II Gb
 Ex II 2D Ex tb IIIC Db

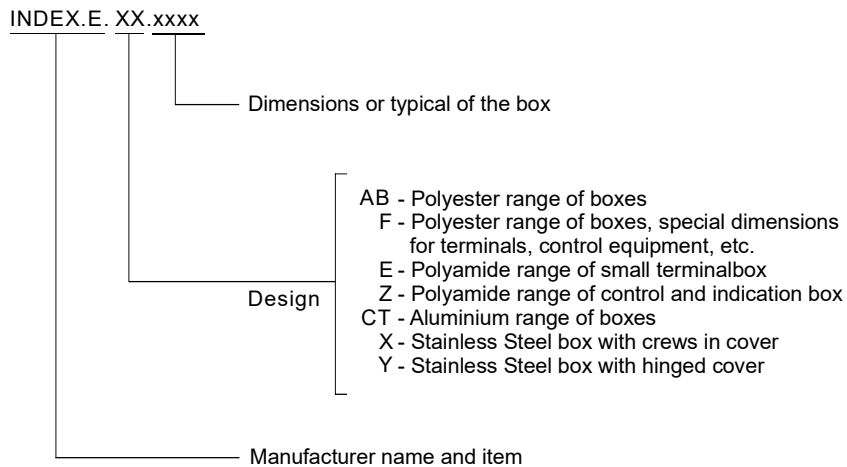
possible explosion-proof protection - d, e, m, ia / ib / etc.
 possible temperature class - T4, T5, T6 - 85°C, 100°C, 135°C

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.CT - Aluminium Ex e boxes

Technical data:

Ex mark: Ex II 2G Ex e.....ia..... II Gb

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

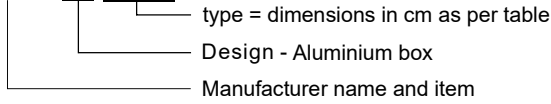
Can be used in zone 1,2, 21 en 22

Ambient temperature: $-20^{\circ}\text{C} \leq \text{Ta} \leq +40^{\circ}\text{C}$

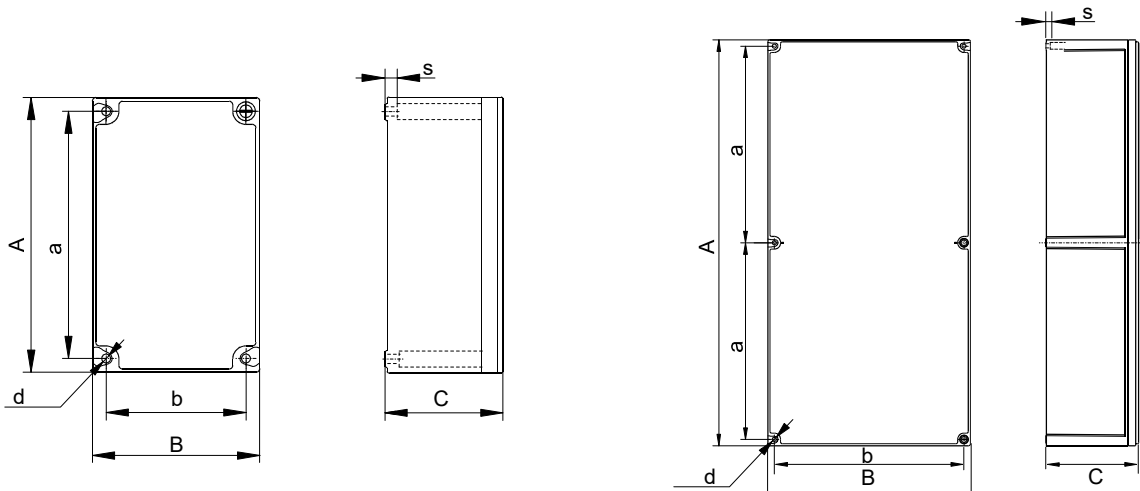
Degree of protection: IP65 / IP66

Material: Copper free aluminium LM6 (copper <0.05%)

INDEX.E.CT.xxxxxx



possible explosionproof protection - d, e, m, n, ia / ib / etc.
possible temperature class - T4, T5, T6



Aluminium terminal boxes Ex e type INDEX.E.CT - dimensions

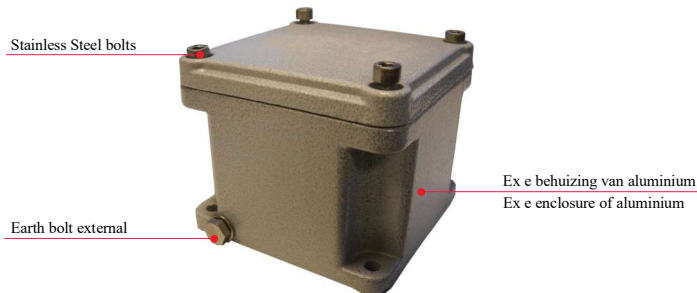
Illustration	Dimensions (mm)							
	Enclosure type	External			Fixing			
		A	B	C	a	b	d	s
	INDEX.E.CT.090907	90	90	75	74	74	6.5	8
	INDEX.E.CT.141410	147	147	100	131	131	6.5	8
	INDEX.E.CT.202012	200	200	120	180	180	6.5	8
	INDEX.E.CT.302318	305	230	180	285	210	7	8
	INDEX.E.CT.473018	470	305	180	225	285	7	8
	INDEX.E.CT.623018	620	305	180	300	285	6.5	8



Mounting plate

Metal or plastic cable glands

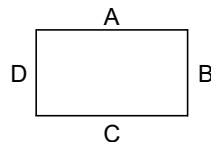
Earth bolt internal





Stainless Steel bolts

Ex e behuizing van aluminium
Ex e enclosure of aluminium


Earth bolt external



Aluminium terminal boxes Ex e type INDEX.E.CT - cable glands

Enclosure type	Cable glands in side A 								Cable glands in side B 						
	M16	M20	M25	M32	M40	M50	M63	M75	M16	M20	M25	M32	M40	M50	M63
INDEX.E.CT.090907	2	2	1						2	1	1				
INDEX.E.CT.141410	6	5	2	1					4	3	1				
INDEX.E.CT.202012	16	12	10	7	3	2	1	1	14	10	8	4	1	1	
INDEX.E.CT.302318	34	30	18	10	7	3	2	2	16	12	10	7	3	2	1
INDEX.E.CT.473018	51	45	27	15	11	4	3	2	16	12	10	7	3	2	1
INDEX.E.CT.623018	68	60	36	20	15	6	5	4	16	12	10	7	3	2	1

Aluminium terminal boxes Ex e type INDEX.E.CT - terminals

Illustration	Enclosure type	Max. number of connections								Max power in Watt				
										T.Amb:-20°C.+40°C		T.Amb:-40°C.+55°C		
		2.5mm ²	4mm ²	6mm ²	10mm ²	16mm ²	35mm ²	50mm ²	70mm ²	95mm ²	T5	T6	T5	T6
	INDEX.E.CT.090907	7	3							14	11	11	7	
	INDEX.E.CT.141410	15	9							31	25	25	17	
	INDEX.E.CT.202012	30	24	18	14					58	44	44	29	
	INDEX.E.CT.302318	50	40	30	23	20	12	6	6	4	109	82	82	55
	INDEX.E.CT.473018	70	60	48	30	28	20	16	16	12	187	140	140	93
	INDEX.E.CT.623018	110	92	64	48	44	32	26	26	20	235	176	176	117

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.

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 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: $-20^{\circ}\text{C} \leq T_a \leq +40^{\circ}\text{C}$
 Option temperature: $-40^{\circ}\text{C} \leq T_a \leq +80^{\circ}\text{C}$



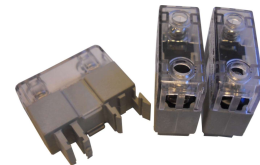
Following Ex certified components can be built inside Ex e boxes

- 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.
- Main switches - type Z0513 o.e.
- Circuit breakers - type Z0511 o.e.
- Earth leakage circuit breakers - type Z0511 o.e.
- Motor protection switches - type Z0512 o.e.
- Thermal relays - type Z0512 o.e.
- Contactors and reversing contactors - type Z0512 o.e.
- Auxiliary relays - type Z0512 o.e.
- Timer relays - type Z0512 o.e.
- Transformers - type Z0516 o.e.
- Buzzer (with or without flash) type Z1208 or TP-MS75M-83 o.e.
- Hour counter type - TP-DS64A o.e.
- Heaters - type LP or SM o.e.
- Thermostat - type H o.e.
- Socket outlets - type Z025x, type Ma.xxxxxx. o.e.
- Windows type Z - 8002/x
- Coupling units type Z8004 / Z8005 / Z8006 o.e.
- Terminals Ex e - as Phoenix UT, UK or MBK type, Weidmuller WDU or WDE type, Wago etc
- Earthbars
- 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

- Ex d boxes series INDEX.B or INDEX.C (certified for zone 1)
- Ex d boxes - KOP, (certified for zone 1)

- Other materials - zone 1 certified like display's, computers etc.





Materials without Ex certification like

- Wiring
- Wiring duct
- Tubing
- Windows
- Dinrail and mounting rail
- Screws, bolts and nuts
- Cabling
- Mounting brackets
- Tagplates
- Bulkhead Couplings
- etc.

Materials only for zone 2 declaration.

- Barriers, amplifiers etc - Ex n certified
- PLC - Ex n certified
- Displays or HMI's - Ex n certified
- Sockets outlets - Ex n certified
- Other materials zone 2 certified

See for more information product manuals from each item.



Safety and Maintenance Instruction

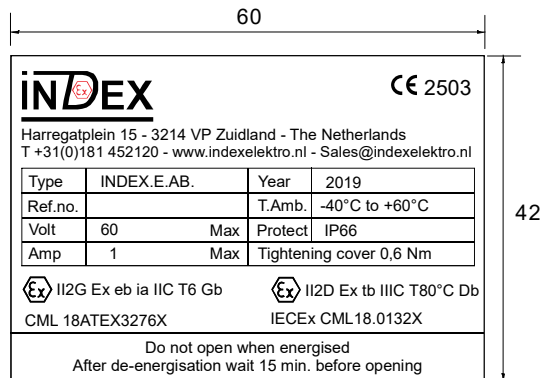
This Safety Instruction is meant for skilled electricians and instructed personnel in accordance with national legislation, including the relevant standards and, where applicable, in accordance with IECEx 60079 and EN60079 on electrical apparatus for explosive atmosphere. Read carefully this instruction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

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

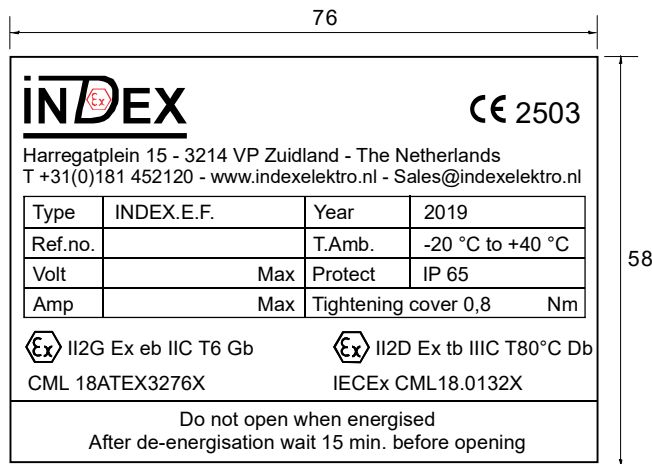
- Compliance with permitted ambient temperatures;
 - Damages on the box
 - Damages on the gaskets
 - Clean upper dust and avoid dust accumulating.
1. Enclosures must be installed and maintained in accordance with all standards regarding electrical installations in hazardous areas classified for explosive 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 mm²).
 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



Label 1 - Small boxes
see tabel



Label 2 - Standard boxes
see tabel



- Type = Index Elektro types as per table
- Ref.no. = Index Elektro order number + identification number (as per list)
- Volt = Max. voltage
- Amp = Max. current
- Year = Year of construction
- T.Amb. = Ambient temperature
- Protect = IP range

Enclosure type	Label	Enclosure type	Label	Enclosure type	Label	Enclosure with main switch	Label
INDEX.E.AB.1	1	INDEX.E.F.01	2	INDEX.E.E	3	INDEX.E.F.31	4-1
INDEX.E.AB.2	1	INDEX.E.F.11	2			INDEX.E.F.32	4-2
INDEX.E.AB.3	1	INDEX.E.F.31	2	INDEX.E.CT.090907	1	INDEX.E.F.53	4-3
INDEX.E.AB.4	1	INDEX.E.F.32	2	INDEX.E.CT.141410	2	INDEX.E.F.54	4-4
INDEX.E.AB.6	2	INDEX.E.F.51	2	INDEX.E.CT.202012	2	INDEX.E.F.73	4-5
INDEX.E.AB.7	2	INDEX.E.F.52	2	INDEX.E.CT.302318	2	INDEX.E.F.92	4-6
INDEX.E.AB.8	2	INDEX.E.F.53	2	INDEX.E.CT.473018	2		
INDEX.E.AB.9	2	INDEX.E.F.71	2	INDEX.E.CT.623018	2		
INDEX.E.AB.10	2	INDEX.E.F.72	2				
INDEX.E.AB.11	2	INDEX.E.F.73	2				
INDEX.E.AB.12	2	INDEX.E.F.81	2				
INDEX.E.AB.13	2	INDEX.E.F.82	2				
INDEX.E.AB.14	2	INDEX.E.F.83	2				
INDEX.E.AB.15	2	INDEX.E.F.92	2				
		INDEX.E.F.93	2				