

Stainless steel **Stainless steel solutions**

Field equipment, enclosures and systems



Reservation

Technical data subject to change without notice. No claims for damages arising from alterations, errors or misprints shall be allowed. Attention is drawn to the applicable standards and regulations on safety components and systems together with the relevant operating and installation instructions.

Content

Engineering and customized Products and Solutions	2 - 3
Ex e enclosure	
TNCN - Ex e enclosure	4 - 5
Explosion-proof, flameproof encapsulated enclosure	
TNHV- Terminal box High Voltage/High Current	6 - 7
TNCD - Ex d Enclosure	8 - 9
TNXCD - Ex d Enclosure for Multi-Purpose Applications	10 - 11
TNBCD - Enclosure Combination for direct/indirect cable entry, gas group IIB	12 - 13
DE8BC - Enclosure Combination for direct/indirect cable entry, gas group IIB + H2	14 - 15
Pressurized Systems	
TNCNP - Pressurized Control cabinet systems	16
Plugs and Sockets for explosion-proof plug-in connectors	17 - 19
Gas Detection	
TN 2000-5 Mobile Gas Detection	20
Lighting	
TNCLS - Backlighting for level gauges	21
TNXCX - Headlight, for example for helideck	22 - 23
Audible and visual signals	
TNFCD/TNFCDM Flashing lamps	24 - 25



Engineering and Customer based product development

Our engineers have a comprehensive level of experience in developing and designing Ex equipment for most applications, and hold a high level of professional competence in this field. In accordance with our vision, we wish you as our customer to receive the full benefit of this competence through working with us to find creative and cost effective solutions to your particular needs, thus increasing safety and profitability for your business.

This kind of cooperation also helps to ensure effective implementation of new technology in our market sector. We call this customer based product development.

Our competitive advantage is that we can quickly implement a tailor made solution, from design straight to product certification, and deliver the product in small or large production batches.



Solutions through technology!

From Idea to Solution:

- Concept study
- Engineering
- Prototyping
- Ex certification
- Documentation
- Production
- Delivery

BARTEC TECHNOR's Engineering and Customer based activities are divided into the following categories:

Standard panels/enclosures

Engineering and assembly of standard products

Special solutions

Based on our engineering and installation of our customized solutions, including development of new components are available.

Tailor made solutions

These are products or solutions are engineered and designed especially according to the customer's requirements.



Standard panels/enclosures

Engineering and building of a solution based on standard Ex components (with or without incorporation of standard industrial components), such as control panels, switchgear, motor starters, local control stations etc.

Typical examples are:

- Ex d/Ex de panels
- Ex e/Ex ed panels
- Ex p
- Ex n

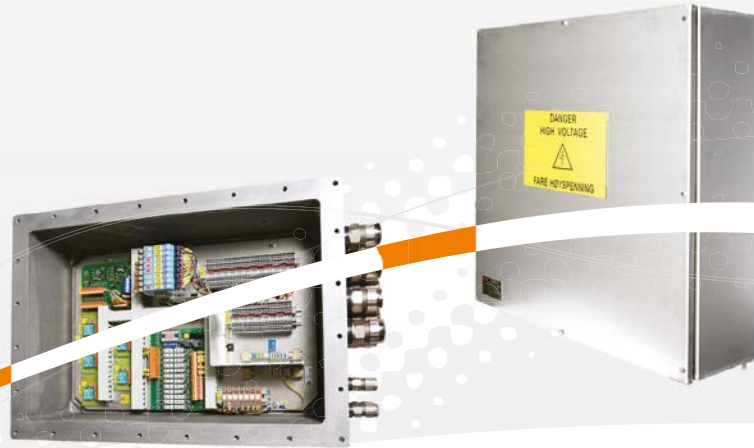


Special solution

Modifying existing Ex components to be adapted to certain tailor requirements, such as: CCTV applications, Remote I/O panels, HMI applications (LCD display and PC solutions), pressurized systems, wireless measuring systems, light equipment etc.

Typical examples can include:

- Ex d/Ex de solutions
- Ex e/Ex ed solutions
- Ex p
- Ex n



Tailor made solutions

Creating and engineering of solution totally from the very beginning. Typical applications are communication systems including wire, fibre optical, wireless transfer, CCTV solutions, measuring systems, different types of switch/control gear, light equipment etc.

The range of OEM products are designed to meet the clients demands, and are usually used within an industry where an explosive atmosphere may be present.

If you come up with a unique product idea which is going to be used in hazardous area, we can use our long-standing competence and experience within the Ex field to ensure that you achieve your vision.

We can tailor make products using all Ex protection methods in close relationship with our clients and have them verified/certified for II 3 G/D (Zone 2/ 22), II 2 G/D (Zone 1/ 21), II 1 G/D (Zone 0/ 20) or a combination of these. For certification we are using partners such as INERIS, DNV, Nemko, IMQ etc.

BARTEC can offer you more than 20 years of experience with tailor made Ex products.



TNCN Ex e enclosure

Features

- Corrosion resistant
- Temperature resistant
- Chemicals resistant
- Seawater resistant

Description

The TNCN range of stainless steel 316L Ex e enclosures are designed for use in any environment where an explosive atmosphere may be present and are especially recommended for chemical agent environments, seawater corrosion resistance and extremely low and high temperatures.

Explosion protection

Ex protection type

- Ex e II T6/T4
- Ex [ia] IIC T6
- Ex tD A21 T 85 °C to T 110 °C
- Ex II 2 GD and EPL Gb/Db

Certification

Empty enclosure
 DNV-2008-OSL-ATEX-42438U
 IECEx DNV 09.005U

Complete enclosure
 DNV-2001-OSL-ATEX-0176
 IECEx DNV 09.004
 DEKRA 13ATEX 0209
 IEXEx DEK13.0075
 CSA 2036776

Ambient temperature

-20 °C to +45 °C
 optional
 -50 °C to +60 °C

Protection class

IP 66 (IP 67 and IP 68 on request)

Technical data

Material

stainless steel 316L

Cover gasket

silicone
 (operating temperature -50 °C to +200 °C)

Surface treatment

shotblasting and acidized
 pickling as standards,
 electropolished as an option

Material thickness

min. 1.5 mm (depending on the box size)

Earthing

internal earth bar/bracket
 external earth bolt

Drain plug

optional

Gland plate

optional

MCT

optional

Guidelines

EN/IEC: 60079-0, 60079-7
 EN 61241-0, EN 61241-1

TNCN Ex e enclosure Measurement table

Type	Max. dissipated power at T _{amb} 40 °C	Fixing dimensions X x Y (mm)	TNCN range of stocked enclosures				
			Width (mm)	Height (mm)	Depth (mm)	Volume (dm ³)	Weight (kg)
121009**	6 W	151	120	100	90	1.08	1.5
151510**	15 W	181	150	150	100	2.25	2.5
202010	20 W	230 x 160	200	200	100	4.00	3.0
202015	20 W	260 x 160	200	200	150	6.00	3.5
302015	30 W	230 x 260	300	200	150	9.00	5.0
282815	30 W	310 x 240	280	280	150	11.76	5.2
383815	40 W	410 x 340	380	380	150	21.66	8.1
575715	90 W	600 x 530	570	570	150	48.74	16.4

The maximum dissipated power level for terminal box sizes not listed in the above table is equal to the nearest smaller size box.

TNCN Measurement Table – range of stocked boxes. Other sizes are available upon request. The boxes are delivered as standard with left hinged covers held to the enclosure by screws. Quick locks, screws only, or other systems can be delivered upon request.

** No hinges – screws only



Quantity of glands

Width/ Height A or B (mm)	Depth C (mm)	Quantity of glands	
		M20	M25
150	100	8	6
	150	12	9
	200	16	12
	270	24	15
200	100	10	10
	150	15	15
	200	25	20
	270	35	30
300	100	15	14
	150	24	21
	200	40	28
	270	56	42
380	100	20	18
	150	30	27
	200	50	36
	270	70	54
400	100	22	18
	150	3	27
	200	55	36
	270	77	54
450	100	24	20
	150	36	30
	200	60	40
	270	84	60
570	100	32	26
	150	48	39
	200	80	52
	300	128	78
760	100	42	36
	150	63	54
	200	105	72
	270	147	108

Dimensions

Type	Top/Bottom (mm)		Side (L+R) (mm)	
	A	B	C	D
202010	1480	360	1480	810
202015	1480	810	1480	810
302015	1480	810	2480	810
282815	2280	810	2280	810
383815	3280	810	3280	810
575715	5180	810	5180	810

Entry Matrix

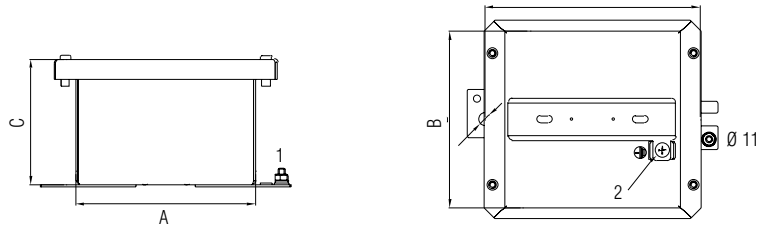
This table lists our recommendations for the maximum quantity of glands for installation in 1 face (the width column in the table) on TNCN Junction Boxes.

Note

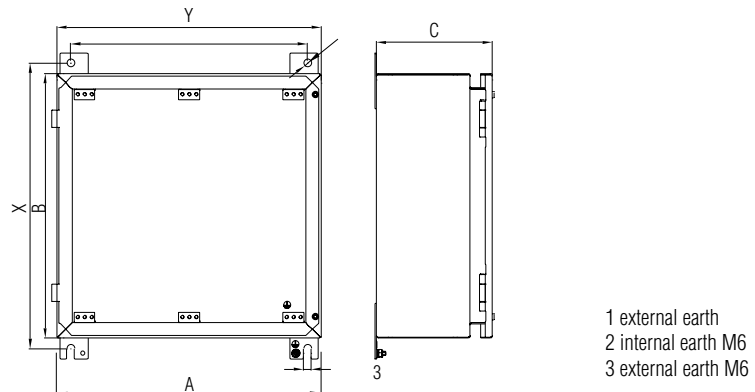
MCT-frames can be fitted in boxes with a minimum depth of 20 cm.

Dimensions

TNCN 121009/151509

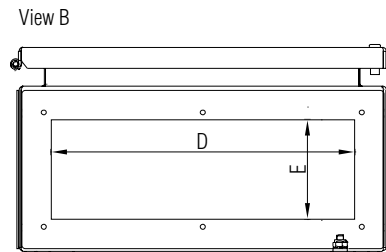
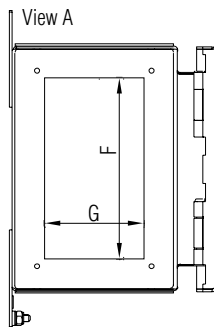
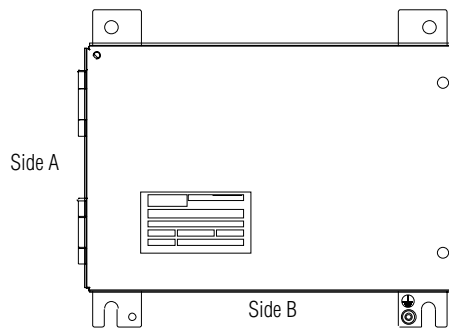


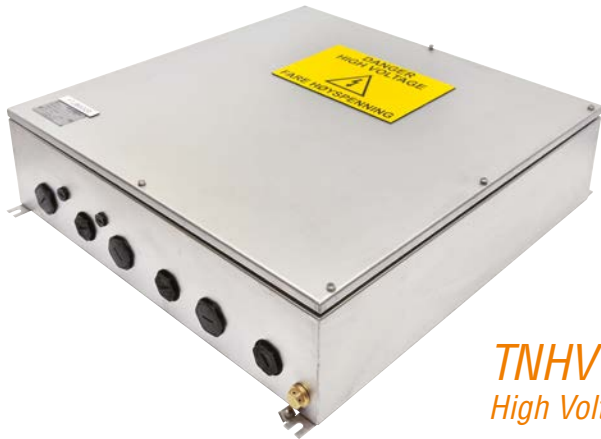
TNCN 202010-575715



- 1 external earth
- 2 internal earth M6
- 3 external earth M6

Dimensions





TNHV
High Voltage/High Current

Features

- High Voltage/High Current up to 11 kV/1500 A
- Top-drive terminal box
- Motor/Pump terminal box
- Subsea umbilical/Downhole Termination

Description

BARTEC TECHNOR High Voltage terminal boxes are made to customer specific order up to 11 kV.

Flexibility is ensured by the wide variety of door hinging, locking options, gland plates and single pole connectors. Cable support arrangement available on demand.

Explosion protection

Ex protection type

Ex e II T6//T5/T4
 II 2 G and EPL Gb

Certification

DNV-2003-OSL-ATEX-0042
 PRESAFE 14ATEX 5228X

Ambient temperature

-20 °C to +40 °C (T5/T4)
 optional
 -50 °C to +60 °C (T6/T4)

Protection class

IP 66 (IP 67 and IP 68 on request)

Technical data

Material

stainless steel 316L

Cover gasket

silicone
 (operating temperature -50 °C to +200 °C)

Surface treatment

shotblasting and acidized pickling as standards, electropolished as an option

Material thickness

min. 1.5 mm (depending on the box size)

Earthing

internal earth bar/bracket
 external earth bolt

Drain plug

optional

Gland plate

optional

MCT

optional

Guidelines

EN/IEC: 60079-0, 60079-7

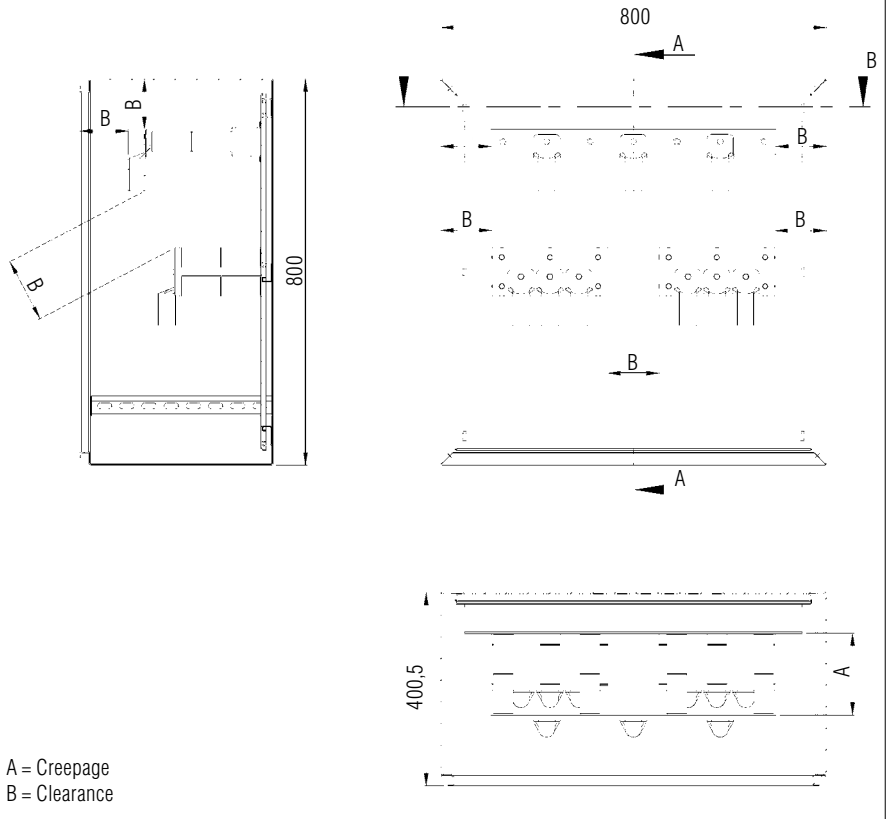
TNHV High Voltage

Voltage ¹⁾ (V)	Minimum creepage distance A Material group I (mm)	Minimum clearance B (mm)
2000 V	25	151
4000 V	50	181
6300 V	80	230 x 160
10000 V	125	260 x 160

¹⁾ Voltages shown are derived from IEC 60664-1 and are based on the rationalization of supply voltages given in table 3b if IEC 60664-1. When determining the required values for creepage and clearance, the voltage value in the table may be increased by a factor of 1, 1 in order to recognize the range of rated voltages in common use.



Dimensions





TNCD

Features

- Seawater resistant
- Temperature resistant
- Flame retardant

Description

The TNCD range of enclosures are manufactured in SS316L/CF-3M and are designed to meet the requirements for Ex d IIC equipment in harsh environments on and offshore. Can be configured as Ex d direct entry or as an Ex de combination for indirect entry.

➔ Explosion protection

Ex protection type

- ⊕ Ex d IIC T6-T4 EPL Gb/Db
- ⊕ II 2 G/D or II 2(1/2)G/D

Certification

Empty enclosure

- NEMKO 03ATEX263U
- IECEx NEM 10.0001U

Complete enclosure

- DNV-2003-OSL-ATEX-0136
- IECEx TUN 12.0018X
- IECEx DEK 13.0075
- DEKRA 13ATEX0209

Ambient temperature

-20 °C to +40 °C

optional

-40 °C to +60 °C

Protection class

IP 66

➔ Technical data

Material

stainless steel 316L/CF-3M

Surface treatment

shot blasted

Earthing between Ex d and Ex e

through the flange assembly

EarthingInternal earth connection

External earth bolt

Lid

with or without hinges, depending on size

Guidelines

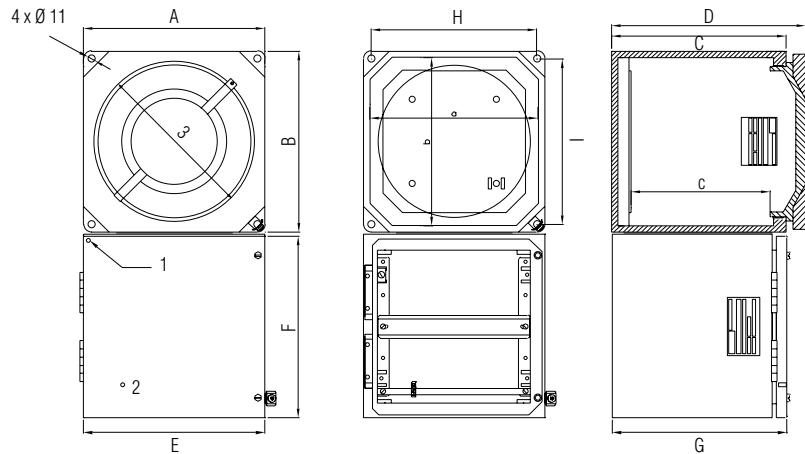
EN/IEC 60079-0, EN/IEC 60079-1

Ex d enclosures Measurement table

External dimensions						Internal dimensions			Fixing dimensions		
TNCD	Width A (mm)	Height B (mm)	Depth C (mm)	Total depth D (mm)	Lid aperture (mm)	Width a (mm)	Height b (mm)	Depth c (mm)	Weight (kg)	H (mm)	I (mm)
191918	190	190	180	213	150	170	170	131	18	166	166
282827	280	280	270	300	235	260	260	217	40	256	256
383827	380	380	270	300	335	360	360	217	64	356	356
575727	570	570	270	300	500	550	550	213	120	546	546



Dimensions



- 1 Option: safety wire
- 2 M6 x 12 welded stud inside door
- 3 Lid

Viewing window TNCD

The window is placed in the centre of the lid. Windows (Ø 65 mm) can also be placed on the sides or back wall. Viewing windows are available in the following diameters: 65 mm, 100 mm and 154 mm.

Ex e connection boxes Measurement table

TNCC	Width E (mm)	Height F (mm)	Depth G (mm)	Weight (kg) (estimated)
191918	190	190	180	3.0
281927	280	190	270	4.4
282827	280	280	270	6.6
381927	380	190	270	4.6
383827	380	380	270	10.5
571927	570	190	270	9.6
573827	570	380	270	13.4
575727	570	570	270	19.7



TNXCD

Features

- Seawater resistant
- Temperature resistant
- Flameproof enclosure Ex d

Description

The TNXCD range of Ex d/Ex de IIC enclosures are manufactured in SS316L and are designed as slim, compact, multipurpose enclosures.

A typical application is CCTV camera housing.

➔ Explosion protection

Ex protection type

Empty enclosure
Ex d/de IIC
⊕ II 2G/D and EPL Gb/Db
optional
Ex dem ia/ib [opis] T6-T4

Certification

Empty enclosure
DNV-2003-OSL-ATEX-0436-U
IECEX TUN 12.0013U

Complete enclosure
DNV-2004-OSL-ATEX-0115

Ambient temperature

-20 °C to +40 °C
optional
-50 °C to +50 °C

Protection class

IP 66 (IP 67 and IP 68 on request)

➔ Technical data

Material

stainless steel 316L/CF-3M

Earthing between Ex d and Ex e enclosure
through the flange assembly

Entries

Ex e glands and Ex d bushings,
or Ex d glands only

Gland size Ex e

M25

Gland size Ex d

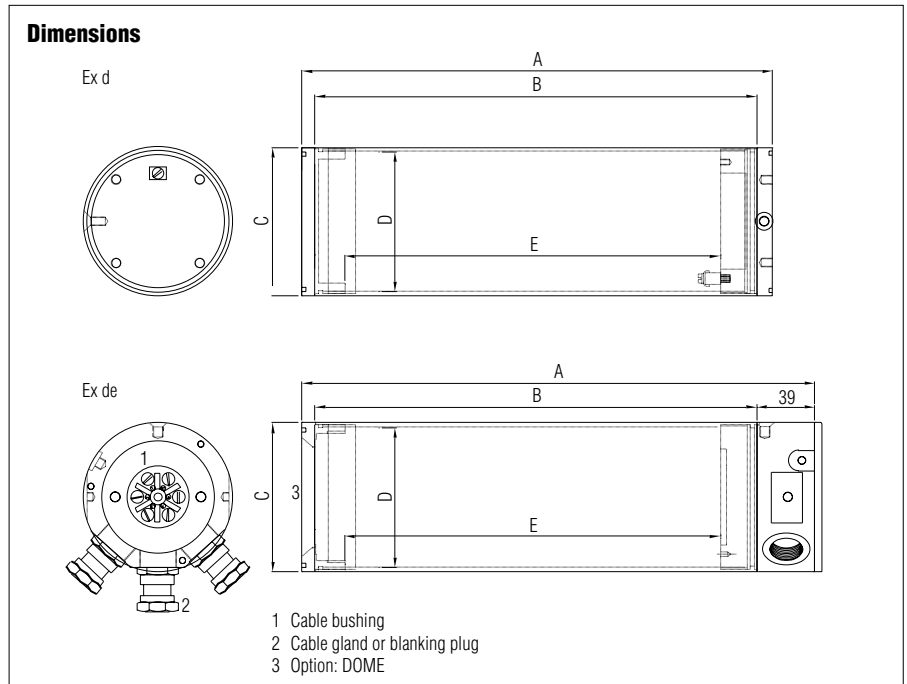
according to specification

Bushing Ex d

max. M42, number and core size
according to specification

Guidelines

EN/IEC 60079-0, EN 60079-1, EN 60079-7,
EN 50281



TNXCD Ex d Measurement table

TNXCD	Total length A (mm)	Tube length B (mm)	Diameter C (mm)	Internal diameter D (mm)	Internal length E (mm)	Junction box F	Weight (kg)	Window/Dome Ø (mm)
XCD1003200	217.2	193	101	95	148	N/A	3.3	68
XCD1003360	384.2	360	101	95	315	N/A	4.1	68
XCD1303100	119.5	100	132	126	55	N/A	4.0	95
XCD1303200	219.5	200	132	126	155	N/A	5.3	95
XCD1303360	379.5	360	132	126	315	N/A	7.0	95
XCD1953290	305.5	290	195	187	238	N/A	13.0	155

TNXCD Ex de Measurement table

TNXCD	Total length A (mm)	Tube length B (mm)	Diameter C (mm)	Internal diameter D (mm)	Internal length E (mm)	Junction box F (mm)	Weight (kg)	Window/Dome Ø (mm)
XCD1002200	247.7	193	100	95	148	39	3.9	68
XCD1002360	414.7	360	100	95	315	39	4.8	68
XCD1301100	161	100	130	126	55	45	5.6	95
XCD1301200	261	200	130	126	155	45	6.9	95
XCD1301360	421	360	130	126	315	45	8.6	95
XCD1951290	389	290	195	187	238	59	17.1	155



TNBCD

Enclosure Combination for
direct/indirect cable entry, gas group IIB

Features

- Seawater-resistant
- Temperature-resistant
- Flameproof enclosure Ex d

Description

The TNBCD range of enclosures are manufactured in SS316L and are designed to meet the requirements for Ex d IIB equipment in harsh environments on- and offshore.

Can be configured as Ex d direct entry or as an Ex de combination for indirect entry.

➔ Explosion protection

Ex protection type

Ex d IIB T6 to T4

⊕ II 2 G/D or II 2(1/2)G/D and EPL Gb/Db

Certification

Empty enclosure

NEMKO 03 ATEX 264 U

IECEX NEM 10.0003U

Complete enclosure

DNV-2003-OSL-ATEX-0136

IECEX TUN 12.0014X

IECEX DEK 13.0075

DEKRA 13ATEX0209

Ambient temperature

-20 °C to +40 °C

option

-50 °C to +60 °C

Protection class

IP 66 (IP 67 and IP 68 on request)

➔ Technical data

Material

stainless steel 316L/CF-3M

Surface treatment

shot blasted

Earthing between Ex d and Ex e/Ex i

through the flange assembly

Cover

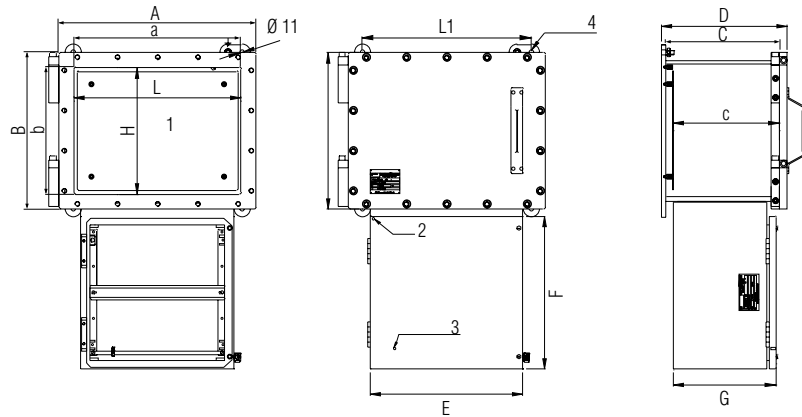
with or without hinges, depending on size

Guidelines

IEC/EN: 60079-0, 60079-1



Dimensions



- 1 Mountingplate
- 2 Option: safety wire
- 3 M6 x 12 Welded stud inside door
- 4 Fixing lugs

Ex d IIB enclosures Measurement table

External dimensions						Internal dimensions				Fixing dimensions		Mounting plate	
TNBCD	Width (fixing) A (mm)	Height (fixing) B (mm)	Depth C (mm)	Total depth D (mm)	Window Ø (mm)	Wide a (mm)	Height b (mm)	Depth c (mm)	Weight (kg) (estimated)	L1 (mm)	H1 (mm)	L (mm)	H (mm)
262531	300	290	280	315	65/100	226	216	265	49	230	290	210	196
323321	360	370	180	215	65/100	286	296	165	37	360	300	266	280
453535	490	390	320	355	65/100/154	416	316	305	94	420	390	400	296
573835	615	420	320	355	65/100/154	541	346	305	122	545	420	525	326

Ex e connection boxes (optional) Measurement table

TNCC	E (mm)	F (mm)	G (mm)	Weight (kg) (estimated)
202025	200	200	255	5
252015	250	200	155	3
383821	380	380	255	9.5
453825	450	380	255	10.5



*DE8BC enclosure
combination for direct/indirect
cable entry, gas group IIB + H2*

Features

- Flame retardant
- Seawater resistant
- Temperature resistant

Description

The DE8BC range comprises many standard sizes of enclosures manufactures in stainless steel 316L and/or in painted carbon steel.

The enclosures allow for utilization of standard electrical components inside. Thus subsequent replacement and maintenance of the installed components is easy, and may be performed by skilled electricians. If required, several enclosures may be assembled on a framework, with separate or common Ex e/i junction boxes.

The enclosures can be delivered empty with U-component certificate or supplied fully assembled according to clients demands.

Explosion protection

Ex protection type

Ex d IIC/IIB T6 to T4 - T85°C to T135°C,
Ex d [ia] ia or de [ia] ia IIB T6 IP65 T85°C
⊕ II 2 GD or 2[1]GD

Certification

Empty enclosure
INERIS 09ATEX9017U
IECEX INE 13.0001U

Complete enclosure
INERIS 09ATEX0061X
IECEX INE 13.0088X
IECEX DEK 13.0075
DEKRA 13 ATEX 0209

Ambient temperature

-20 °C to +40 °C
optional
-40 °C to +60 °C

Protection class

IP 66

Technical data

Material

stainless steel 316L
or carbon steel as option

Surface treatment

SS316L is shot blasted
carbon steel is painted RAL 7032,
special painting on request

Earthing

M10

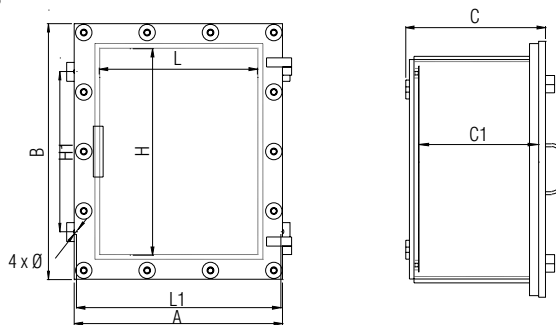
Drain plug

upon request

Guidelines

EN/IEC: 60079-0, 60079-1, 60079-31

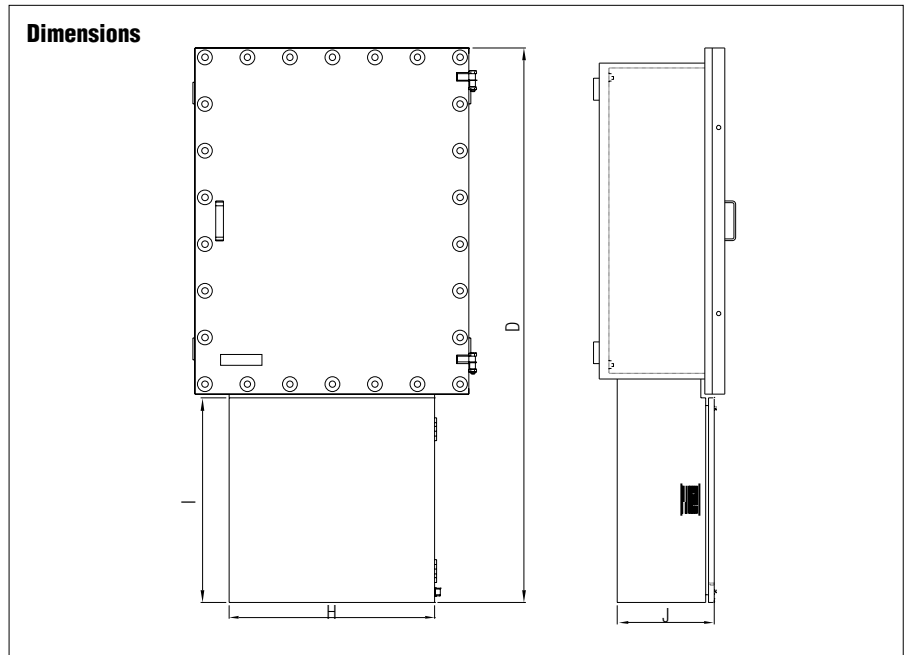
Dimensions



Windows for DE8BC

References	Dimensions
REG 100 x 50*	100 x 50
REG 100 x 100*	100 x 100
REG 200 x 45*	200 x 45
REG 235 x 75*	235 x 75
REG D45	∅ 45
REG D60	∅ 60
REG D150	∅ 150

*Horizontal arrangement as standard



Ex d IIB enclosure Measurement table

DE8BC	Width A (mm)	Height B (mm)	Depth C (mm)	Useful Depth C1 (mm)	External fixing H1 x L1 (mm)	Diameter of fixing holes Ø (mm)	Base plate useful surface H x L (mm)	Max. dissipation W (mm)	Weight empty (kg)
DE8BC32	334	434	239	192	234 x 326	12	230 x 330	260	62
DE8BC351	354	474	246	192	274 x 346	12	250 x 370	200	73
DE8BC43	434	534	306	252	334 x 426	12	330 x 430	300	103
DE8BC44	544	544	310	252	334 x 526	12	430 x 430	380	135
DE8BC54	544	644	310	252	414 x 526	20	430 x 530	410	160
DE8BC64	544	744	312	252	514 x 526	20	430 x 630	470	180
DE8BC75	664	864	324	253	614 x 630	20	530 x 730	590	290
DE8BC86	764	964	373	297	714 x 734	20	630 x 830	600	406
DE8BC107	864	1164	380	294	908 x 868	20	730 x 1030	800	630
DE8BC108	864	1164	425	339	90 x 868	20	730 x 1030	800	645
DE8BC148	940	1590	513	417	1200 x 900	20	750 x 1430	1500	1220

Ex d enclosures with Ex e connection box Measurement table

Type	Type Ex e box TNCC/TNCC*	D (mm)	H (mm)	I (mm)	J (mm)	No. of holes M42 x 1,5
DE8BC32	TNCC252515	701	250	250	158	4
DE8BC351	TNCC252515	744	250	250	158	4
DE8BC43	TNCC303020	854	300	300	208	8
DE8BC44	TNCC453820	939	450	380	208	12
DE8BC54	TNCC453820	1039	450	380	208	12
DE8BC64	TNCC453820	1139	450	380	208	12
DE8BC75	TNCC453820	1250	450	380	208	12
DE8BC86	TNCC575727	1539	570	570	274	24
DE8BC107	TNCC575727	1740	570	570	274	24
DE8BC108	TNCC575727	1742	570	570	274	24
DE8BC148	TNCC767635	2358	760	760	357	44

* Stainless steel 316L



TNCNP Pressurized Control cabinet systems

Features

- Temperature resistant
- Customized version
- Several different cooling options

Description

The TNCNP range of Ex p pressurized systems are designed and purpose built according to each client's requirements.

The equipment allows for use of standard (non-Ex) electrical components in zone 1 and 2.

BARTEC TECHNOR delivers a variety of turn-key solutions with enclosures made in Stainless steel 316L complete with purge control apparatus, testing and certification.

Explosion protection

Ex protection type

- ⊕ II(2)G Ex px
- ⊕ II3G Ex pz

Certification

- Complete enclosures
- Zone 1: BVS11ATEXE144
- Zone 2: BSV11ATEXE145
- Zone 2: IECEx BVS 11.0070
- Zone 1/2: POCC DE.ME92.1302732

- Empty enclosures
- DNV-2003-OSL-ATEX-0027U

Ambient temperature

- 20 °C to +40 °C
- optional
- 40 °C to +60 °C

Protection class

- IP 66/67 (Cabinets)
- IP 65 when Ex p controller fitted
- IP 66 solution for Ex p controller

Technical data

Material

stainless steel 316L

Lid/door gasket

Operating temperature
silicone -40 °C to +200 °C

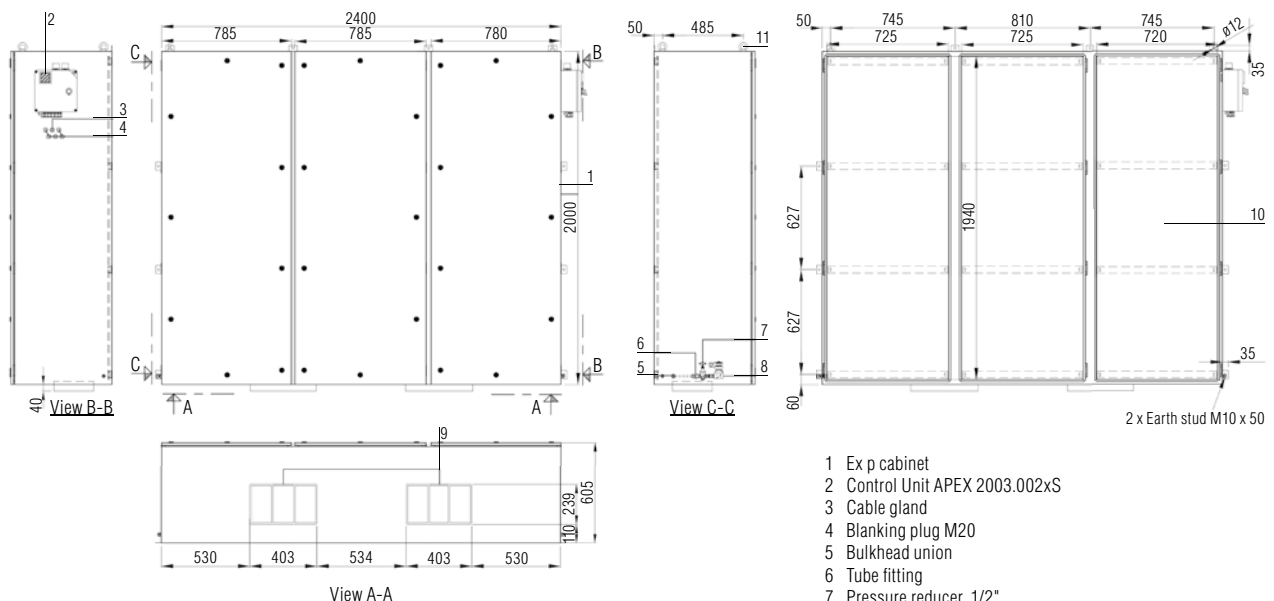
Surface treatment

Shotblasting and Acidized as standard

Guidelines

EN/IEC: 60079-0, 60079-2, 60079-11

Dimensions (mm)



- 1 Ex p cabinet
- 2 Control Unit APEX 2003.002xS
- 3 Cable gland
- 4 Blanking plug M20
- 5 Bulkhead union
- 6 Tube fitting
- 7 Pressure reducer, 1/2"
- 8 Digital purging gas valve
- 9 MCT Frame
- 10 Mountingplate
- 11 Removable lifting lugs, to be replaced with Ex e approved blind plugs when installed



Plug-in connectors

Description

BARTEC TECHNOR is an approved distributor and stockist of the Amphenol Starline & Starline Ex range of heavy duty connectors for power, signal and hybrid applications.

Typical applications include:

- Petro-chemical plants
- Offshore oil drilling
- Automotive paint booths
- Aircraft Refuelling Pits
- Pharmaceutical Manufacturing Equipment

Coupling/mounting

Double lead Acme threads provide complete coupling in one turn of the coupling nut, and do not clog under adverse weather conditions.

Large wiring space provided in cable housings and conduit fitting bodies.

Features

- Hard anodic coating provides high dielectric strength and superior heat/corrosion resistance.
- High amperage of 1135 Amps at AC/DC 1000 V or DC rating available
- Solder, crimp and pressure terminals available

Explosion protection

Ex protection type

- ⊕ II 2 GD
- Ex d IIC T6
- Ex de IIC T6

Certification

- SIRA03ATEX1101X
- IECEX SIR 10.0064X
- North American Hazloc listing
- GOST Cert. no. POCC MX.AM96.B00012
- TUV 11.0147X
- UL E184393
- CSA Listed
- Member IADC

Operating temperature

-40 °C to +55 °C

Protection class

IP 68

Technical data

Material

high tensile strength aluminum with hard anodic coating or high grade 316 stainless steel

Voltage

AC/DC 1000 V

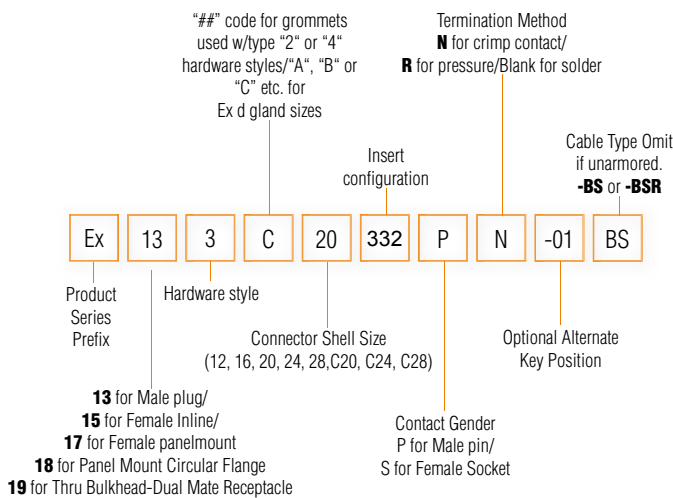
Amperage

1135 A

Terminals

solder, crimp and pressure terminals available

Code Logic Starline Ex



Examples:

Ex-13-3-C-20-332PN

Male plug with explosion-proof gland for cables with an external diameter of 24.1 mm, 20ea #12/4.0 mm male contacts

Ex-15-4-1620-332SN

Female inline with basket-weave grip for cables with an external diameter of 24.1 mm, 20ea #12/4.0 mm female contacts

Ex-17-1-20-332SN

Female panel mount . 20ea #12/4.0 mm female contacts

Ex-13-3-C-16-22PR-BS

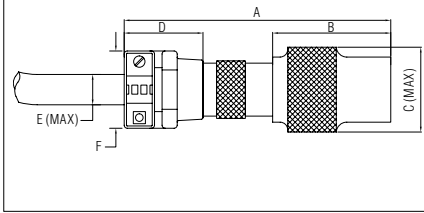
Male plug with explosion-proof gland for armoured cables with an external diameter of 31.75 mm, 4ea #4/25.0 mm male contacts

Ex-17-3-C-16-22SR-BS

Female panel mount with cable adapter with explosion-proof gland for armoured cable (to match the above)



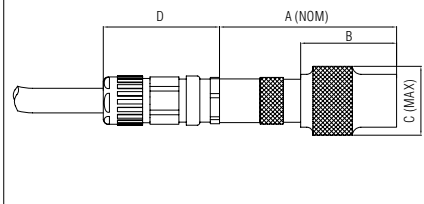
Dimensions



Plug with Mechanical Clamp, Ex - 13 - 2 Style

Dimension Shell	A	B	C	D	E	F	G
12	8-3/4 (222.3)	1-3/4 (44.5)	1-1/2 (38.1)	2 (50.8)	15/16 (23.8)	2-3/8 (60.3)	N/A
16	8-13/16 (223.8)	1-3/4 (44.5)	2 (50.8)	2-1/16 (52.4)	1-7/16 (36.5)	3 (76.2)	N/A
20	8-7/8 (225.4)	1-3/4 (44.5)	2-1/2 (63.5)	2-1/8 (54.0)	1-15/16 (49.2)	3-3/4 (95.3)	N/A
24	8-15/16 (227.0)	1-3/4 (44.5)	3 (76.2)	2-3/16 (55.6)	2-7/16 (61.9)	4-1/2 (114.3)	N/A
28	9 (228.6)	3 1/16 (77.8)	4 3/16 (106.4)	2 1/4 (57.2)	2-7/8 (73.0)	5-1/8 (130.2)	N/A

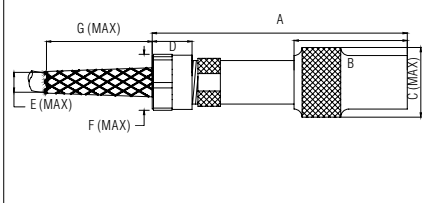
Dimensions



Plug with Ex d Gland, Ex - 13 - 3 Style

Dimension Shell	A	B	C	Gland Thread
12	6-1/16 (154)	3-9/16 (91)	2-1/8 (54)	M25
16	8-1/16 (205)	3-9/16 (91)	2-5/8 (67)	M40
20	8-1/16 (205)	3-9/16 (91)	3-1/8 (79)	M50
24	8-1/16 (205)	3-9/16 (91)	3-5/8 (92)	M63
28	8-1/16 (205)	3-9/16 (91)	4-1/8 (105)	M75

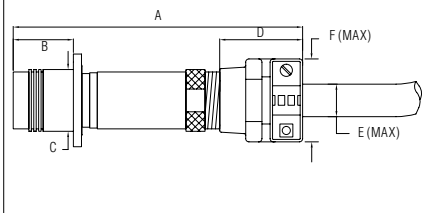
Dimensions



Plug Kellems Grip, Ex - 13 - 4 Style

Dimension Shell	A	B	C	D	E	F	G
12	7-3/8 (187.3)	1-3/4 (44.5)	1-1/2 (38.1)	1-1/4 (31.8)	15/16 (23.8)	1-1/2 (38.1)	8 (203.2)
16	7-3/8 (187.3)	1-3/4 (44.5)	2 (50.8)	1-1/4 (31.8)	1-7/16 (36.5)	2 (50.8)	10-1/2 (266.7)
20	7-3/8 (187.3)	1-3/4 (44.5)	2-1/2 (63.5)	1-1/4 (31.8)	1-15/16 (49.2)	2-1/2 (63.5)	14-1/2 (368.3)
24	7-3/8 (187.3)	1-3/4 (44.5)	3 (76.2)	1-1/4 (31.8)	2-7/16 (61.9)	3 (76.2)	17-1/2 (444.5)
28	7-3/8 (187.3)	1-3/4 (44.5)	3-1/2 (88.9)	1-1/4 (31.8)	2-7/8 (73.0)	3-1/2 (88.9)	19 (482.6)

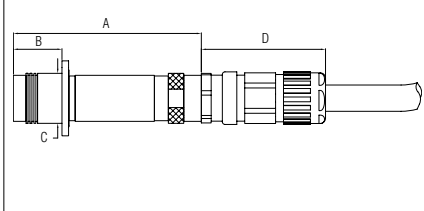
Dimensions



In-line Receptacle with Mechanical Clamp, Ex - 15 - 2 Style

Dimension Shell	A	B	C	D	E	F	G
12	8-3/4 (222.3)	1-3/4 (44.5)	1-1/2 (38.1)	2 (50.8)	15/16 (23.8)	2-3/8 (60.3)	N/A
16	8-13/16 (223.8)	1-3/4 (44.5)	2 (50.8)	2-1/16 (52.4)	1-7/16 (36.5)	3 (76.2)	N/A
20	8-7/8 (225.4)	1-3/4 (44.5)	2-1/2 (63.5)	2-1/8 (54.0)	1-15/16 (49.2)	3-3/4 (95.3)	N/A
24	8-15/16 (227.0)	1-3/4 (44.5)	3 (76.2)	2-3/16 (55.6)	2-7/16 (61.9)	4-1/2 (114.3)	N/A
28	9 (228.6)	1-3/4 (44.5)	3-1/2 (88.9)	2 1/4 (57.2)	2-7/8 (73.0)	5-1/8 (130.2)	N/A

Dimensions

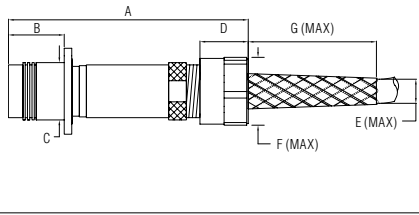


In-line Receptacle with Ex d Gland, Ex - 15 - 3 Style

Dimension Shell	A	B	C	Gland Thread
12	5-5/8 (143)	1-7/16 (37)	1-1/2 (38)	M25
16	7-5/8 (194)	1-7/16 (37)	2 (51)	M40
20	7-5/8 (194)	1-7/16 (37)	2-1/2 (64)	M50
24	7-5/8 (194)	1-7/16 (37)	3 (76)	M63
28	7-5/8 (194)	1-7/16 (37)	3-1/2 (89)	M75



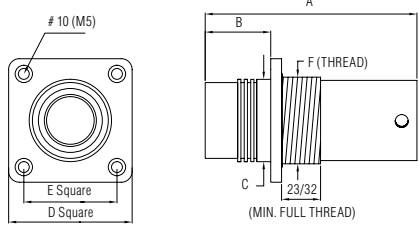
Dimensions



In-line Receptacle with Kellems Grip, Ex - 15 - 4 Style

Dimension Shell	A	B	C	D	E	F	G
12	7-3/8 (187.3)	1-3/4 (44.5)	1-1/2 (38.1)	1-1/4 (31.8)	15/16 (23.8)	1-1/2 (38.1)	8 (203.2)
16	7-3/8 (187.3)	1-3/4 (44.5)	2 (50.8)	1-1/4 (31.8)	1-7/16 (36.5)	2 (50.8)	10-1/2 (266.7)
20	7-3/8 (187.3)	1-3/4 (44.5)	2-1/2 (63.5)	1-1/4 (31.8)	1-15/16 (49.2)	2-1/2 (63.5)	14-1/2 (368.3)
24	7-3/8 (187.3)	1-3/4 (44.5)	3 (76.2)	1-1/4 (31.8)	2-7/16 (61.9)	3 (76.2)	17-1/2 (444.5)
28	7-3/8 (187.3)	1-3/4 (44.5)	3-1/2 (88.9)	1-1/4 (31.8)	2-7/8 (73.0)	3-1/2 (88.9)	19 (482.6)

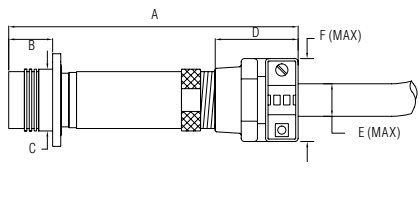
Dimensions



Panel Mount Receptacle (Potting Required), Ex - 17 - 1 Style

Dimension Shell	A	B	C	D	E	H
12	4-3/4 (120.7)	1-3/4 (44.5)	1-1/2 (38.1)	1.654 (42)	2-1/4 (57.2)	M40
16	4-3/4 (120.7)	1-3/4 (44.5)	2 (50.8)	2.047 (52)	2-5/8 (66.7)	M50
20	4-3/4 (120.7)	1-3/4 (44.5)	2-1/2 (63.5)	2.441 (62)	3 (76.2)	M63
24	4-3/4 (120.7)	1-3/4 (44.5)	3 (76.2)	2.835 (72)	3-1/2 (88.9)	M75
28	4-3/4 (120.7)	1-3/4 (44.5)	3-1/2 (88.9)	3.228 (82)	4 (101.6)	M90

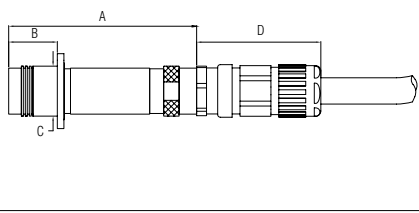
Dimensions



Fixed In-line Receptacle with Mechanical clamp, Ex - 17 - 2 Style

Dimension Shell	A	B	C	D	E	F
12	8-3/4 (222.3)	1-3/4 (44.5)	1-1/2 (38.1)	2 (50.8)	15/16 (23.8)	2-3/8 (60.3)
16	8-13/16 (223.8)	1-3/4 (44.5)	2 (50.8)	2-1/16 (52.4)	1-7/16 (36.5)	3 (76.2)
20	8-7/8 (225.4)	1-3/4 (44.5)	2-1/2 (63.5)	2-1/8 (54.0)	1-15/16 (49.2)	3-3/4 (95.3)
24	8-15/16 (227.0)	1-3/4 (44.5)	3 (76.2)	2-3/16 (55.6)	2-7/16 (61.9)	4-1/2 (114.3)
28	9 (228.6)	1-3/4 (44.5)	3-1/2 (88.9)	2 1/4 (57.2)		

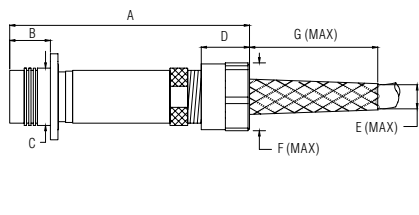
Dimensions



Fixed In-line Receptacle with Ex d Gland, Ex - 17 - 3 Style

Dimension Shell	A	B	C	Gland Thread
12	5-5/8 (143)	1-7/16 (37)	1-1/2 (38)	M25
16	7-7/8 (194)	1-7/16 (37)	2 (51)	M40
20	7-7/8 (194)	1-7/16 (37)	1-1/2 (64)	M50
24	7-7/8 (194)	1-7/16 (37)	3 (76)	M63
28	7-7/8 (194)	1-7/16 (37)	3-1/2 (89)	M75

Dimensions



Fixed In-line Receptacle with Kellems Grip, Ex - 17 - 4 Style

Dimension Shell	A	B	C	D	E	F	G
12	7-3/8 (187.3)	1-3/4 (44.5)	1-1/2 (38.1)	1-1/4 (31.8)	15/16 (23.8)	1-1/2 (38.1)	8 (203.2)
16	7-3/8 (187.3)	1-3/4 (44.5)	2 (50.8)	1-1/4 (31.8)	1-7/16 (36.5)	2 (50.8)	10-1/2 (266.7)
20	7-3/8 (187.3)	1-3/4 (44.5)	2-1/2 (63.5)	1-1/4 (31.8)	1-15/16 (49.2)	2-1/2 (63.5)	14-1/2 (368.3)
24	7-3/8 (187.3)	1-3/4 (44.5)	3 (76.2)	1-1/4 (31.8)	2-7/16 (61.9)	3 (76.2)	17-1/2 (444.5)
28	7-3/8 (187.3)	1-3/4 (44.5)	3-1/2 (88.9)	1-1/4 (31.8)	2-7/8 (73.0)	3-1/2 (88.9)	19 (482.6)



*TN 2000-5
Mobile Gas Detection*

Features

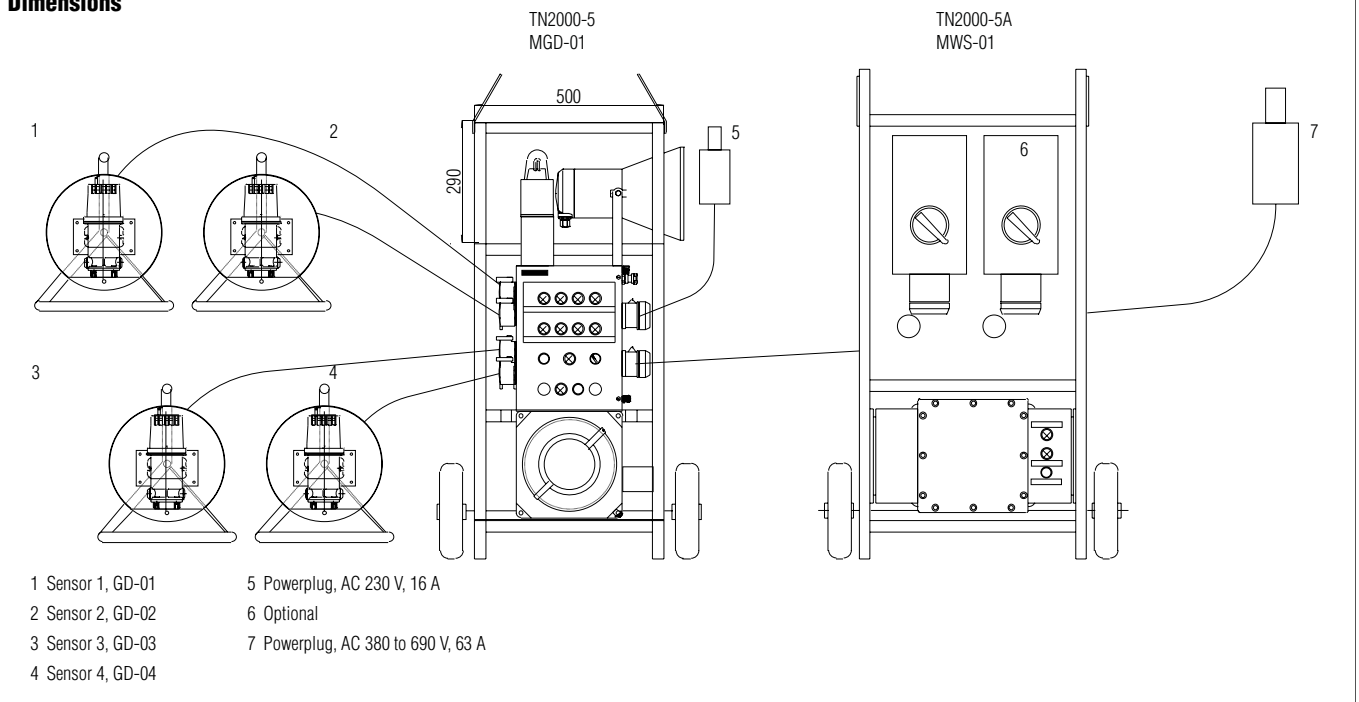
- Acoustic and optical alarm signal
- For work in Ex Zone 1 and 2
- For use at offshore installations

Description

The Mobile Gas Detection System is specially designed as a protection and shutdown system for use in connection with hot work in Ex Zone 1 and 2 within on- and offshore installations.

The unit is designed to shut down the connected electrical and/or pneumatical equipment and give acoustic and visual alarm when gas is detected.

Dimensions





Main Control Unit

➔ **Explosion protection**

Ex protection type

II 2G Ex dem IIC T4

Certification

ATEX and IECEx

Operating temperature

-20 °C to +40 °C,
other temperature ranges on request

Protection class

IP 66

➔ **Technical data**

Material

trolley and electrical enclosures:
acid stainless steel

Power cable

35 m H07RN-F, 3 x 2.5 mm²

PLC

OMRON

Gas monitoring

0 - 100 % LEL

Level shut down

10 % LEL

Earth fault monitoring/shut off

30 mA

Lifting lugs

Integrated

Mobility

Wheeled, liftable

■ **Electrical data**

Rated voltage

AC 220 to AC 240 V, 50/60 Hz,
others on request

Power Outlet

4 x 16 A Flange socket GHG5118,
other upon request

Dimension (W x H x D)

680 mm x 1275 mm x 625 mm

Total weight

105 kg

Gas Detectors

➔ **Explosion protection**

Ex protection type

II 2G Ex de IIC T6

Certification

ATEX and IECEx

Operating temperature

-20 °C to +45 °C,
(optional -40 °C to +60 °C)

Protection class

IP 66/IP 67

➔ **Technical data**

Material

acid resistant stainless steel

Sensor cable

40 m Radox Tenuis-TW/S EMC

Sensor type

Simtronics GD10P,
other sensors upon request

Connector

DXN1/24 V

■ **Electrical data**

Rated voltage

DC 24 V/3.5 W

Current source

4 to 20 mA

Dimension (W x H x D)

104 mm x 106 mm x 246 mm

Total weight

2.9 kg

Power Control Unit

➔ **Explosion protection**

Ex protection type

II 2G Ex dem IIB T5

Certification

ATEX and IECEx

Operating temperature

-20 °C to +40 °C,
other temperature ranges on request

Protection class

IP 66

➔ **Technical data**

Material

acid resistant stainless steel

Power cable

35 m H07RN-F, 5 x 16 mm²

Earth fault monitoring/shut off

30 mA

Lifting lugs

Integrated

Mobility

Wheeled, liftable

■ **Electrical data**

Rated voltage

AC 380 to 690 V (must be specified)

Power Outlet

1 x 63 A Flange socket GHG
(2 x 63 A as an option)

Dimension (W x H x D)

800 mm x 1290 mm x 600 mm

Total weight

95 kg



TNCLS

Backlighting for level gauges

Features

- Allows a precise reading
- Low-maintenance
- Special installation kits for high/low temperatures

Description

The range of TNCLS Ex em LED backlights are designed for use to illuminate level gauges in all kinds of industry where an explosive atmosphere may be present.

TNCLS offers a long life, low maintenance LED solution to enable the operator to accurately read the level through the gauge glass.

➤ Explosion protection

Ex protection type

Ex II 2G Ex em II T4

Certification

DNV-2002-OSL-ATEX-0195

Ambient temperature

-20 °C to +45 °C

Protection class

IP 66

➤ Technical data

Material

stainless steel 316L

Surface treatment

acidized

Earthing

M6 inside and outside

Cable entry

to be specified max. 2 x M25 in top and/or bottom, and/or entries in side

Power consumption

approx. 3 VA per module

Voltage

AC 220 to 240 V or AC 254 V.
Other voltages upon request

Frequency

50/60 Hz

Humidity

100 %

Terminals

4 x 2.5 m²

Illumination colour

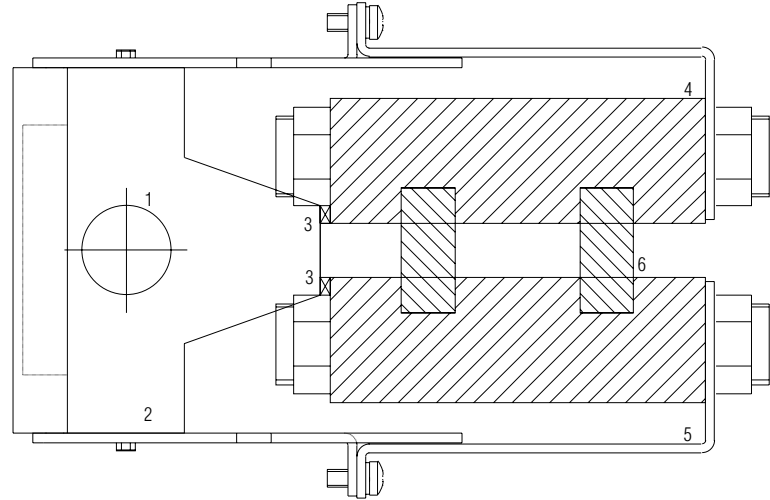
yellow

Guidelines

EN/IEC: 60079-0, 60079-7, 60079-18



Typical installation



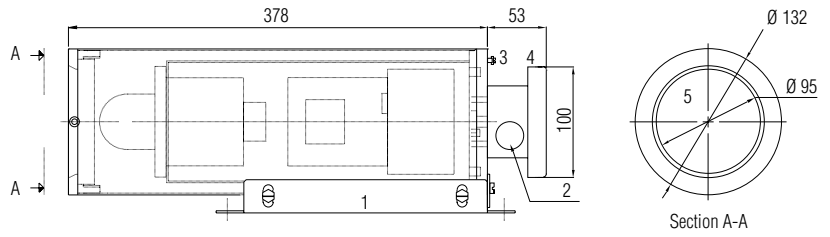
- | | |
|----------------------------|--------------------|
| 1 Cable entrance, max. M25 | 4 Level gauge |
| 2 Backlight | 5 Mounting bracket |
| 3 Gasket | 6 Level glas |

Dimensions	Total length (A) mm	Light exposure (B) mm	Weight kg
27-1	270	250	2.3
30-1	300	280	2.5
34-1	340	320	2.7
36-1	360	340	2.8
27-2	540	520	4.3
30-2	600	580	4.6
34-2	680	660	5.1
36-2	720	700	5.3
27-3	810	790	6.2
30-3	900	880	6.7
34-3	1020	1000	7.3
36-3	1080	1060	7.5
27-4	1080	1060	7.9
30-4	1200	1180	8.5
34-4	1360	1340	9.3
36-4	1440	1420	9.6

Several units can be assembled to one unit
 Type key: TNCLS L-X, L = Module length,
 X = No. of modules, Total length: A = L*X
 Other sizes on request.

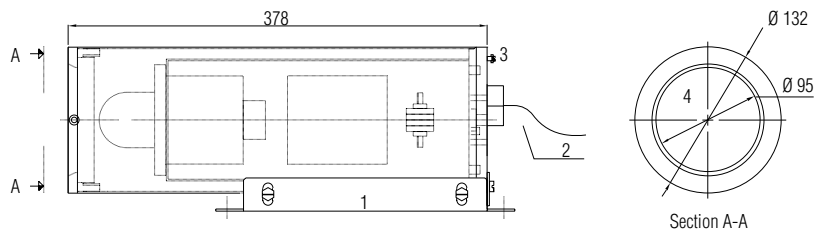


Dimensions Ex de



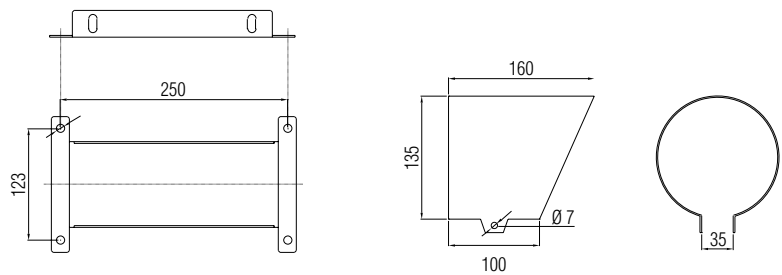
- 1 Bracket
- 2 M25 Entry
- 3 Earth stud
- 4 Ex e junction box
- 5 Window

Dimensions Ex d Flying lead



- 1 Bracket
- 2 Flying lead
- 3 Earth stud
- 4 Window

Dimensions



Mounting bracket
SS316L
Ordering code: TPS14007

Canopy for extra protection against glaring (optional)
SS316L
Ordering code: TPS14003



Flashing lamps TNFCD TNFCDM

Features

- Seawater resistant
- Customized version

Description

BARTEC TECHNOR's flashing beacon is an efficient solution for use in Ex-zones offshore as well as onshore, and has been supplied to installations in the demanding environments of the North Sea for more than 25 years.

TNFCD flashing lights are available as Ex de, Ex d or non-Ex. TNFCDM is Ex d only.

Beacon operates when power is applied. TNFC can optionally use external triggering, and can be supplied with a siren card for acoustic warning.

Explosion protection

Ex protection type

TNFCD

Ex II 2G Ex d IIC T4 or Ex de IIC T4

TNFCDM

Ex II 2G/D Ex d IIC T4

Certification

NEMKO 01 ATEX 430

Ambient temperature

-20 °C to +60 °C

(-50 °C to +60 °C upon request)

Protection class

IP 66 (IP67 upon request)

Technical data

Material

TNFCD/TNFCDM stainless steel 316L/CF-3M

Surface treatment SS316L

shot blasted/machined

Ground terminal

inside and outside

Cable entry

TNFCD Standard M25

TNFCDM Standard M25, M20 or flying lead on request

Real humidity

100 %

Dome colours

red, yellow, blue, green, orange, clear

Flash frequency

1 Hz

Flash energy

TNFCD 10 joule

TNFCDM 5 joule

Weight

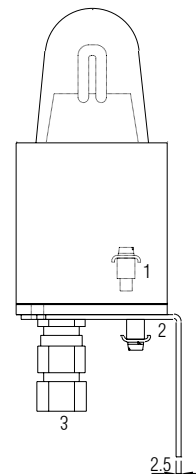
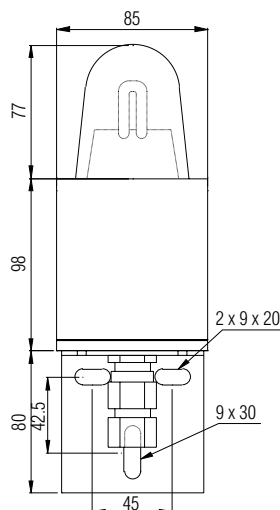
TNFCD 5.1 kg

TNFCDM 2.5 kg

Guidelines

EN/IEC: 60079-0, 60079-1, 60079-7

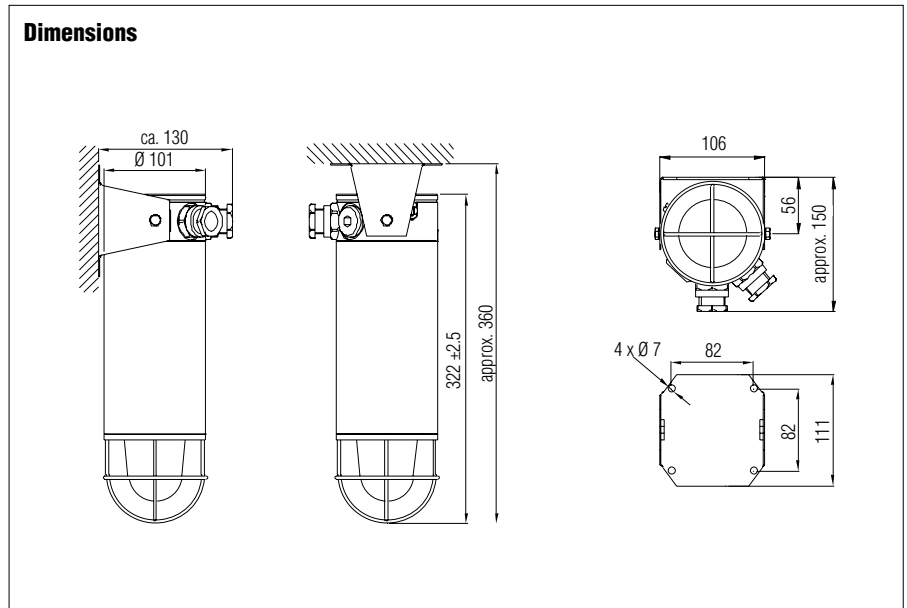
Dimensions



- 1 Internal earth
- 2 External earth
- 3 Ex d approved cable gland must be used



Dimensions



Flashing lamp TNFCD

Rated voltage	Voltage range	Rated current	Power consumption	Supply frequency	Typical start current	Triggering	Fuse	Siren card for acoustic warning
AC 220 to 254 V	±10 %	110 mA	24 VA	50/60 Hz	>1 A in max. 1 msec.	direct, telephone, DC 24 to 48 V, fail safe	1 to 2 A < time-lag fuse is recommended	8 W, 20 W or 25 W for Ex loudspeaker (8 ohm, 20 ohm or 100 V line)
AC 110 to 120 V	±10 %	220 mA	24 VA	50/60 Hz				
DC 24 to 48 V	±10 %	DC 24 V/670 mA DC 48 V/330 mA	16 VA					

Flashing lamp TNFDM

Rated voltage	Voltage range	Power consumption	Typical start current	Triggering
AC 220 to 254 V	AC 190 to 272 V	100 mA	1 A in max. 1 msec	direct
AC 110 to 127 V	±20 %	100 mA		
DC 24 V	-10 % to +20 %	380 mA		
DC 48 V	-10 % to +20 %	200 mA		

BARTEC protects
people and
the environment
by the safety

of components,
systems
and plants.

