

## CONTROL PANELS

---



- The right size/material enclosure
- Optimum functionality thanks to the great variety of components
- Customised planning and implementation
- Certified to many standards

BARTEC produces local control stations for use in areas with flammable gases and dusts. Depending on the application area, the control stations are designed with the type of protection “Increased safety” or “Protection by enclosure”. The explosion-protected local control stations are available in aluminium, polyester or stainless steel. When selecting the version, you can choose between a cabinet with door and an enclosure with screw cover. Control, signalling and display devices and remote I/O systems are installed according to customer specifications. The installation of industrial standard equipment in controls for Zone 21, type of protection tb “Protection by enclosure” is possible. The control elements can also be mounted on a mounting rail or in the front wall. Free installation areas can be designated for the subsequent installation of BARTEC control and signalling devices, which are then sealed using blanking plugs. All explosion-protected local control stations are supplied prewired on terminals

**Fields of application**

Chemical and petrochemical industry, process and plant engineering, pharmaceutical and food industry, OFF SHORE areas.

**Explosion protection**

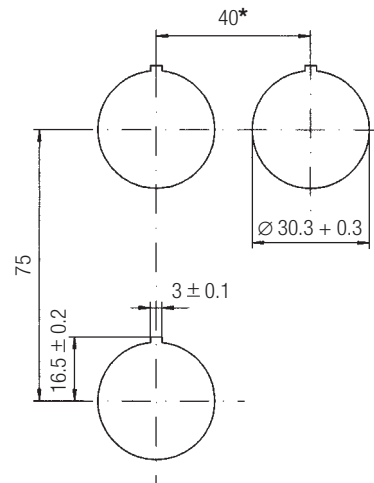
Marking (depending on the components installed)	
for Zone 1	Ⓢ II 2 G Ex db eb ma/mb op is q ia/ib [ib] IIA, IIB, IIC, T6, T5, T4, T3 Gb Ⓢ II 2(1) G Ex db eb ma/mb op is q ia/ib [ia Ga] IIA, IIB, IIC, T6, T5, T4, T3 Gb
for Zone 21	Ⓢ II 2 D Ex tb op is [ib] IIIA, IIIB, IIIC T80 °C, T100 °C, 130 °C Db Ⓢ II 2(1) D Ex tb op is [ia Da] IIIA, IIIB, IIIC T80 °C, T100 °C, 130 °C Db
Ambient temperature (special design on request)	-20 °C to +40 °C -55 °C max. +80 °C (depending on fixtures)
Certification	IBExU 12 ATEX 1099 IECEX IBE 12.0031

**Technical data**

Material	Type 07-3.01 with lid aluminium ALSi 12, pressure or chill casting RAL 7001 silver grey
	Type 07-3.03 with lid glass-fibre reinforced polyester RAL 9005, deep black
	Type 07-3.09 mit door glass-fibre reinforced polyester RAL 9011, graphite black
	Type 07-3.13 with door High-quality stainless steel 1.4301 (304)
	Type 07-3.32 with lid High-quality stainless steel 1.4404 (316L) Enclosure with lid
Seals	EPDM (Standard) -20 °C to +85 °C
	PU (Standard at 07-3109) -20 °C to +80 °C
	Silicone -55 °C to +100 °C
Mechanical strength (acc. to DIN EN 60079-0)	Impact energy 7 Nm
Protection class (higher degree of protection on request)	EN/IEC 60529 max. IP 66
<b>Electrical data</b>	
Rated voltage	up to 1000 V
Rated current	max. 160 A depending on devices fitted

**Mounting dimensions**

for switching and light elements according to EN 60947-5-1



\* Recommended distance for mushroom pushbutton, emergency switch as well as position selector with protective shroud: 100 mm.

2

**Configuration data for control stations**

Type of enclosure	07-3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -
Dimensions	Width _____ Height _____ Depth _____
Nominal voltage	AC _____ V DC _____ V
Threaded glands	_____

Technical data subject to change without notice.



- The right size/material enclosure
- Optimum functionality thanks to the great variety of components
- Customised planning and implementation
- Certified to many standards

BARTEC produces local control stations for use in areas with flammable gases and dusts. Depending on the application area, the control stations are designed with the type of protection “Increased safety” or “Protection by enclosure”. The explosion-protected local control stations are available in aluminium, polyester or stainless steel. When selecting the version, you can choose between a cabinet with door and an enclosure with screw cover. Control, signalling and display devices and remote I/O systems are installed according to customer specifications. The installation of industrial standard equipment in controls for Zone 22, type of protection t “Protection by enclosure” is possible. The control elements can also be mounted on a mounting rail or in the front wall. Free installation areas can be designated for the subsequent installation of BARTEC control and signalling devices, which are then sealed using blanking plugs. All explosion-protected local control stations are supplied prewired on terminals.

**Fields of application**

Chemical and petrochemical industry, process and plant engineering, pharmaceutical and food industry, OFF SHORE areas.

**Explosion protection**

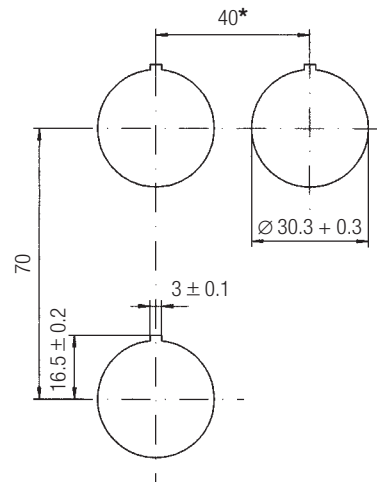
Marking (depending on the components installed)	
Zone 2	Ⓜ II 3 G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ic] IIA, IIB, IIC, T6, T5, T4 Gc Ⓜ II 3(2) G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ib Gb] IIA, IIB, IIC, T6, T5, T4 Gc Ⓜ II 3(1) G Ex db/dc eb/ec ma/mb/mc op is opsh q ia/ib/ic [ib Ga] IIA, IIB, IIC, T6, T5, T4 Gc
Zone 22	Ⓜ II 3 D Ex tc op is [ic] IIIA, IIIB, IIIC T80 °C, T100 °C Dc Ⓜ II 3(2) D Ex tc op is [ib Db] IIIA, IIIB, IIIC T80 °C, T100 °C Dc Ⓜ II 3(1) D Ex tc op is [ia Da] IIIA, IIIB, IIIC T80 °C, T100 °C Dc
Ambient temperature (special design on request)	-20 °C to +40 °C -55 °C max. +80 °C (depending on fixtures)
Certification of RL-2014/34/EU	further approvals on request IBExU 14 ATEX B002 IECEx IBE 14.0028

**Technical data**

Material	Type A7-3.01 with lid aluminium ALSi 12, pressure or chill casting RAL 7001 silver grey
	Type A7-3.03 with lid glass-fibre reinforced polyester RAL 9005, deep black
	Type A7-3.09 mit door glass-fibre reinforced polyester RAL 9011, graphite black
	Type A7-3.13 with door High-quality stainless steel 1.4301 (304)
	Type A7-3.32 with lid High-quality stainless steel 1.4404 (316L) Enclosure with lid
Seals	EPDM (Standard) -20 °C to +85 °C
	PU (Standard at 07-3109) -20 °C to +80 °C
	Silicone -55 °C to +100 °C
Mechanical strength (acc. to DIN EN 60079-0)	Impact energy 7 Nm
Protection class (higher degree of protection on request)	EN/IEC 60529 max. IP 66
<b>Electrical data</b>	
Rated voltage	up to 1000 V
Rated current	max. 160 A depending on devices fitted

**Mounting dimensions**

for switching and light elements according to EN 60947-5-1



\* Recommended distance for mushroom pushbutton, emergency switch as well as position selector with protective shroud: 100 mm.

**Configuration data for control stations**

Type of enclosure	A7-3 <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> -
Dimensions	Width _____ Height _____ Depth _____
Nominal voltage	AC _____ V DC _____ V
Threaded glands	_____

Technical data subject to change without notice.



Aluminium



Stainless steel

Flameproof enclosures BARTEC B or EJB series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22.

These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

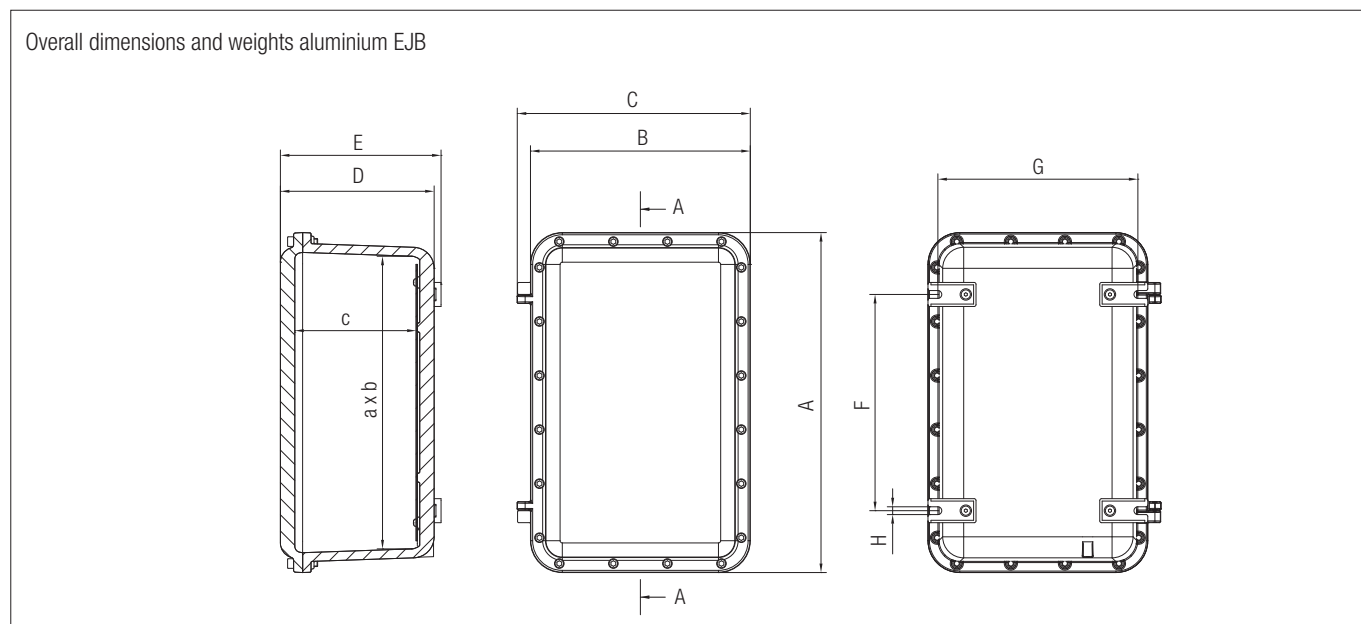
According to EN-IEC 60079-0,-1

### Explosion protection

Marking ATEX	Ⓜ II 2G Ex d IIB+H <sub>2</sub> T6 to T3 Gb Ⓜ II 2D Ex tb IIIC T80°C to T130°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIB+H <sub>2</sub> T6 to T3 Gb Ex II 2D Ex tb IIIC T80°C to T130°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22

### Technical data

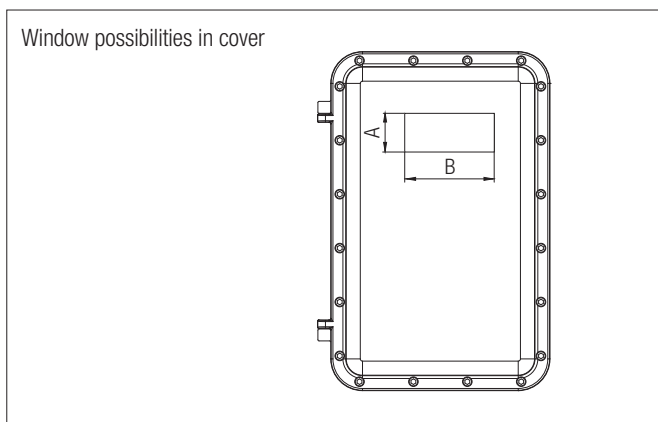
Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0.1% copper) Stainless steel AISI 316L
Surface treatment	External powder type painted RAL9006 (cast aluminium version) unpainted (stainless steel version)  Internal anti-condense painting RAL 2004 (optional)
Earthing and bonding	Internal and external earth bolt (M6)
Enclosure lid	Bolts in stainless steel SS304 for aluminium and SS316 for stainless steel enclosures
Mounting plate	Aluminium enclosure: Galvanized Steel Stainless steel enclosure: Stainless Steel
Mounting brackets	Black epoxy painted aluminium Galvanized steel for EJB 7. / 9.
Hinges	Casted on long side (standard) Aluminium hinges on the short side (optional)
Windows	Windows available in the cover of the enclosure according to below table



**Ordering information**

Name	Dimensions (mm)										Mountingplate mm
	B	A	C	b	a	c	G	D	H	Kg	
EJB11ACMXA0A0A	175	175	132	115	115	91	78	173	13	4	100 x 100 x 2
EJB21ACMXA0A0A	245	285	179	180	220	121	245	160	13	13	140 x 180 x 2
EJB22ACMXA0A0A	200	300	234	135	235	175	188	195	13	10	120 x 220 x 2
EJB23ACMXA0A0A	260	310	207	200	250	155	240	195	13	15	170 x 210 x 2
EJB30ACMXA0A0A	315	415	178	251	351	114	295	294	13	20	220 x 320 x 2
EJB31ACMXA0A0A	315	415	259	251	351	195	295	294	13	24	220 x 320 x 2
EJB51ACMXA0A0A	366	566	269	300	500	201	336	360	13	36	260 x 460 x 3
EJB63ACMXA0A0A	470	670	245	400	600	180	440	500	13	49	340 x 540 x 3
EJB61ACMXA0A0A	470	670	372	400	600	305	440	500	13	58	340 x 540 x 3
EJB73ACMXA0A0A	542	742	311	456	656	213	580	520	16	90	400 x 600 x 3
EJB71ACMXA0A0A	542	742	439	456	656	332	580	520	16	111	400 x 600 x 3
EJB93ACMXA0A0B	660	963	305	544	844	193	650	700	16	145	500 x 800 x 3
EJB91ACMXA0A0B	660	963	472	544	844	347	650	700	16	190	500 x 800 x 3

Technical data subject to change without notice.



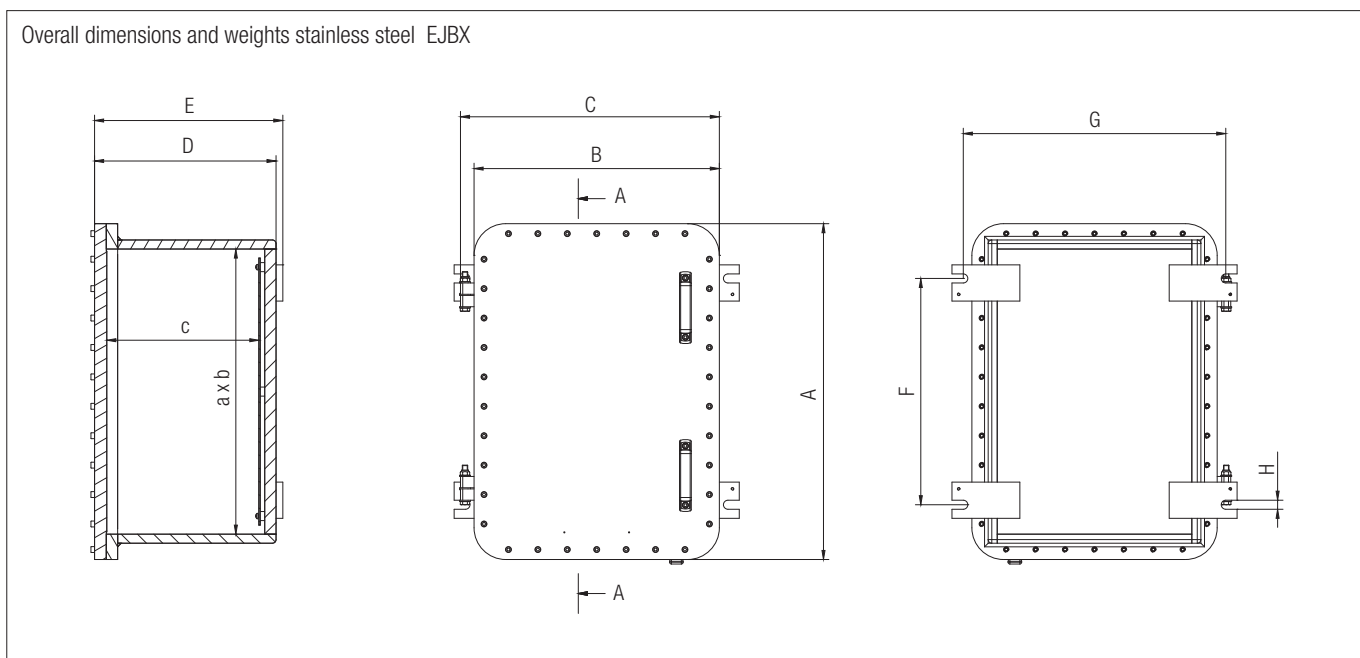
**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction

**Selection chart**

Dimensions (mm)

Window code	EJB11	EJB12	EJB21	EJB22	EJB23	EJB30	EJB31	EJB51	EJB61/63	EJB71/73	EJB91/93	A	B
FR1ST	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	48	48
FR2ST			✓	✓	✓	✓	✓	✓	✓	✓	✓	48	96
FR3ST			✓	✓	✓	✓	✓	✓	✓			48	150
FR4ST					✓	✓	✓	✓	✓			48	200
F1ST	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	60	60
F2ST			✓	✓	✓	✓	✓	✓	✓	✓	✓	75	75
F3ST			✓	✓	✓	✓	✓	✓	✓	✓	✓	75	110
F4ST			✓	✓	✓	✓	✓	✓	✓			75	150
F5ST						✓	✓	✓	✓			150	150
F6ST								✓	✓			75	300
F7ST								✓	✓			150	300
F8									✓			300	300
F9									✓			300	450



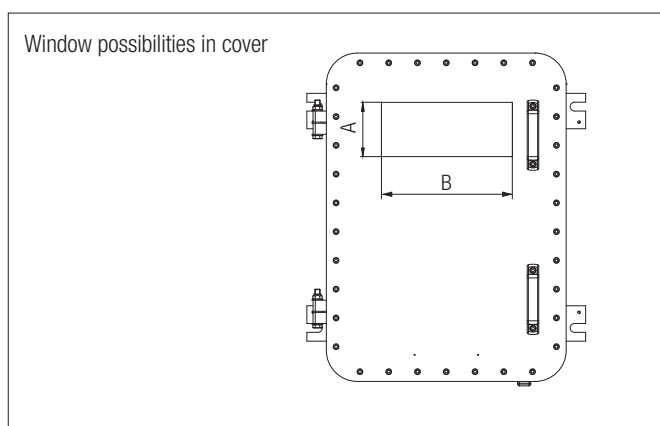
Technical data subject to change without notice.



**Selection chart**

Name	Dimensions (mm)										Mountingplate mm
	B	A	C	b	a	c	G	D	H	Kg	
EJB11X	175	175	132	115	115	91	78	173	13	14	100 x 100 x 2
EJB21X	245	285	179	180	220	127	245	160	13	32	140 x 180 x 2
EJB22X	200	300	234	135	235	175	188	195	13	34	120 x 220 x 2
EJB23X	260	310	207	200	250	152	240	195	13	38	170 x 210 x 2
EJB30X	315	415	178	251	351	114	295	294	13	52	220 x 320 x 2
EJB31X	315	415	259	251	351	195	295	294	13	64	220 x 320 x 2
EJB51X	366	566	269	300	500	207	336	360	13	95	260 x 460 x 3
EJB63X	470	670	245	400	600	307	440	500	13	127	340 x 540 x 3
EJB61X	470	670	372	400	600	180	440	500	13	155	340 x 540 x 3
EJB73X	542	742	308	456	656	210	580	520	16	200	400 x 600 x 3
EJB71X	542	742	429	456	656	335	580	520	16	280	400 x 600 x 3
EJB93X	660	960	305	544	844	200	650	700	16	573	500 x 800 x 3
EJB91X	660	960	462	544	844	360	650	700	16	618	500 x 800 x 3

2



**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction

**Selection chart**

Window code	Dimensions (mm)											A	B
	EJB11X	EJB21X	EJB22X	EJB23X	EJB30X	EJB31X	EJB51X	EJB61X	EJB63X	EJB71/73X	EJB91/93X		
FR1ST	√	√	√	√	√	√	√	√	√			48	48
FR2ST		√	√	√	√	√	√	√	√			48	96
FR3ST		√	√	√	√	√	√	√	√	√	√	48	150
FR4ST		√	√	√	√	√	√					48	200
F1ST	√	√	√	√	√	√	√					60	60
F2ST	√	√	√	√	√	√	√					75	75
F3ST	√	√	√	√	√	√	√	√	√			75	110
F4ST		√	√	√	√	√	√	√	√			75	150
F5ST				√	√	√	√	√	√			150	150
F6ST							√	√	√			75	300
F7ST									√			150	300
F8								√	√			300	300
F9								√	√			300	450



Flameproof enclosures BARTEC C or EJC series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22.

These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

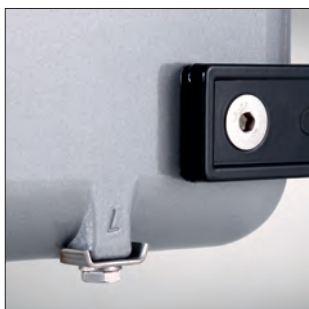
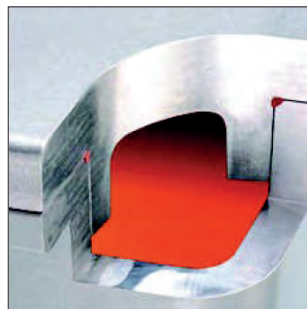
According to EN-IEC 60079-0,-1

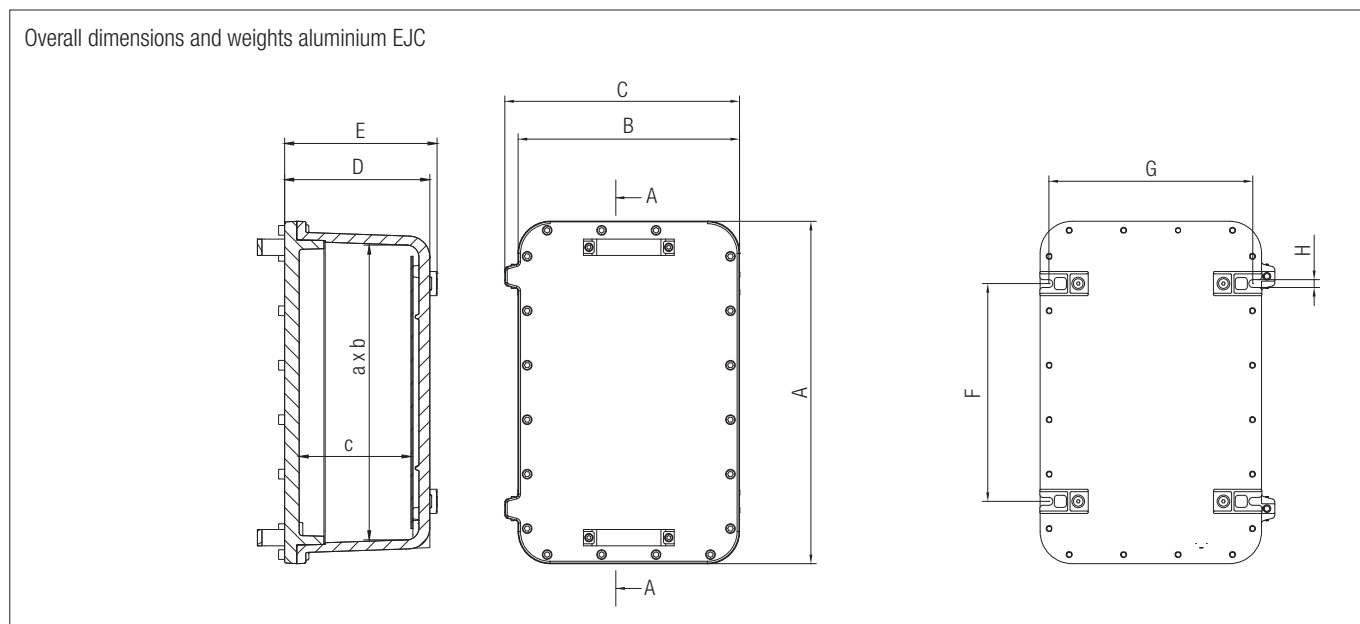
**Explosion protection**

Marking ATEX	Ⓜ II 2G Ex d IIC T6..T3 Gb Ⓜ II 2D Ex tb IIIC T85°C..T150°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIC T6..T3 Gb Ex II 2D Ex tb IIIC T85°C..T150°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22

**Technical data**

Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0,1% copper)
Surface treatment	External painted RAL 9006 (standard) Internal anti-condense painting RAL 2004 (optional)
Earthing and bonding	Internal and external earth bolt (M6)
Enclosure lid	Bolts in stainless steel SS304
Mountingplate	Galvanized steel
Mounting brackets	Black epoxy painted aluminium
Hinges	Casted on long side
Windows	Windows available in the cover of the enclosure according to below table
Enclosure design	International patent n° PTC/EP2010/054076





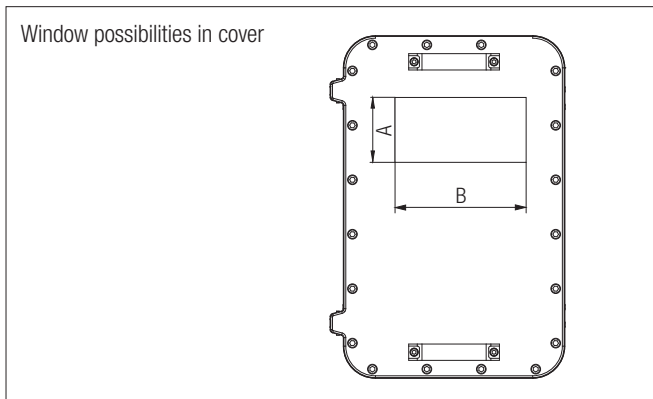
**Selection chart**

Name	Dimensions (mm)									Kg	Mountingplate (mm)
	B	A	C	b	a	c	G	D	H		
EJC21ACMXA0A0B	285	245	179	220	180	119	245	160	13	15	140 x 180 x 2
EJC30ACMXA0A0B	315	415	176	251	351	125	295	294	13	22	220 x 320 x 2
EJC31ACMXA0A0B	315	415	257	251	351	206	295	294	13	23	220 x 320 x 2
EJC51ACMXA0A0B	366	566	268	500	300	207	335	360	13	40	260 x 460 x 3
EJC63ACMXA0A0B	470	670	247	402	602	180	438	500	13	53	340 x 540 x 3
EJC61ACMXA0A0B	470	670	372	402	602	307	438	500	13	62	340 x 540 x 3

**Selection chart**

Dimensions (mm)							
Window code	EJC21	EJC30	EJC31	EJC51	EJC61	EJC63	
FR1ST	√	√	√	√	√	√	48 48
FR2ST	√	√	√	√	√	√	48 96
FR3ST	√	√	√	√	√	√	48 150
FR4ST	√	√	√	√	√	√	48 200
F1ST	√	√	√	√	√	√	60 60
F2ST	√	√	√	√	√	√	75 75
F3ST	√	√	√	√	√	√	75 110
F4ST	√	√	√	√	√	√	75 150
F5ST	√	√	√	√	√	√	150 150
F6ST				√	√	√	300 75
F7ST				√	√	√	300 150
F8ST					√	√	300 300
F9ST					√	√	450 300
FR1ST *	√						48 48
F1ST *	√						60 60

Technical data subject to change without notice.



**Window simbology**

FR1ST up to FR4ST Reduced window  
 F1ST up to F9ST Standard window  
 F8 and F9 Standard window with fixing frame  
 It's possible to have other kind of window sizes (not standard) when keeping maximum size as above as restriction



Aluminium



Stainless steel

Flameproof enclosures BARTEC C or GUB series are designed to be installed in industrial plants, where potential hazardous atmospheres occur. These areas are either classified as zone 1 and 2 or as zone 21 and 22. These enclosures are designed to contain regular industrial electrical components or equipment on the mounting plate like fuses, transformers, circuit breakers, relays, PLC etc. and to be fully integrated in the hazardous area as control- or distribution panel.

Depending on the installed components; observe the specifications on the type label.

According to EN-IEC 60079-0,-1

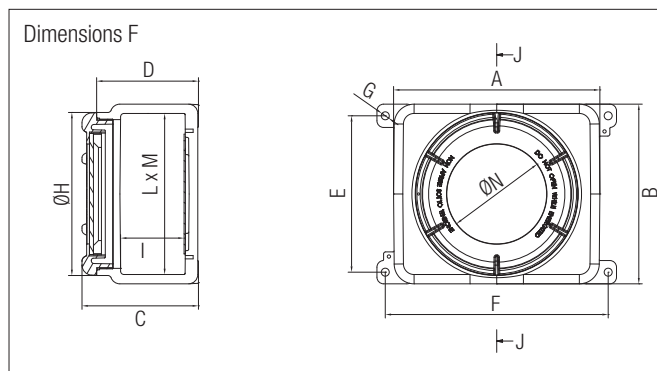
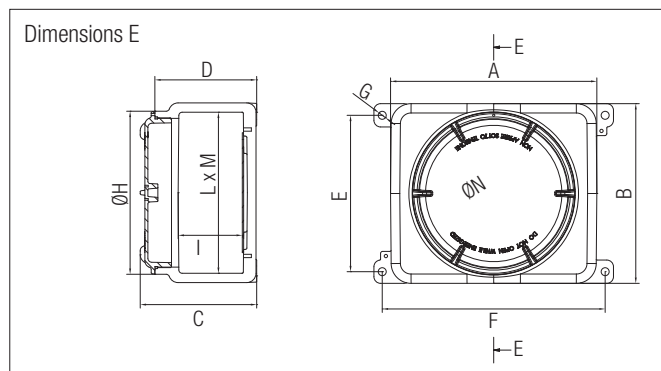
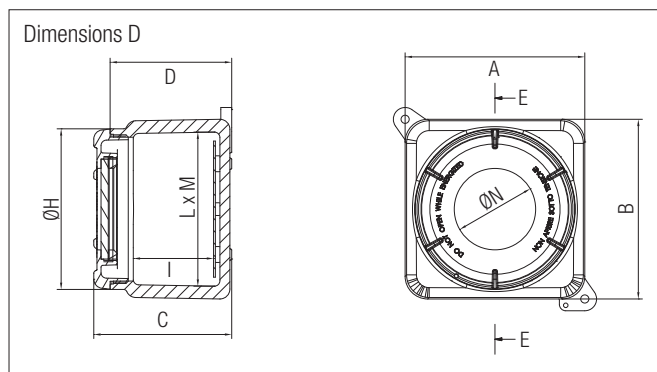
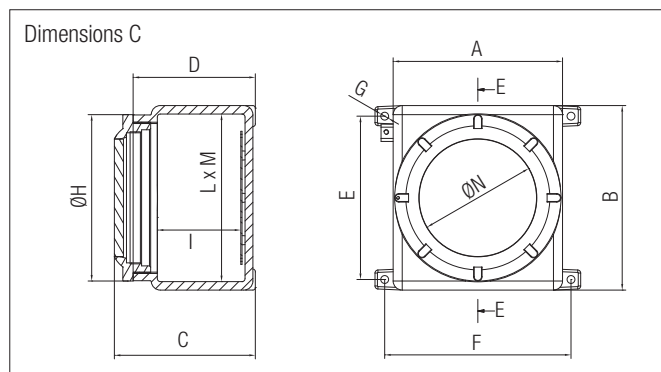
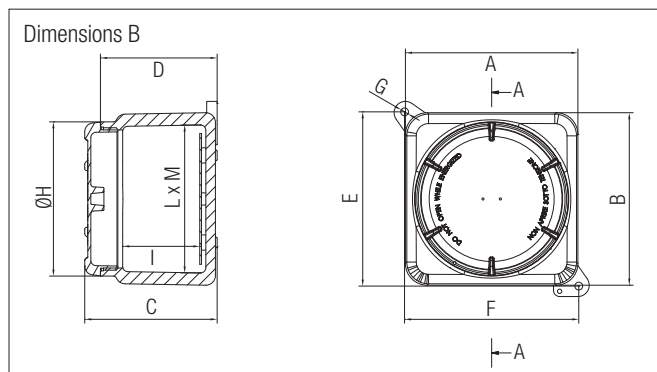
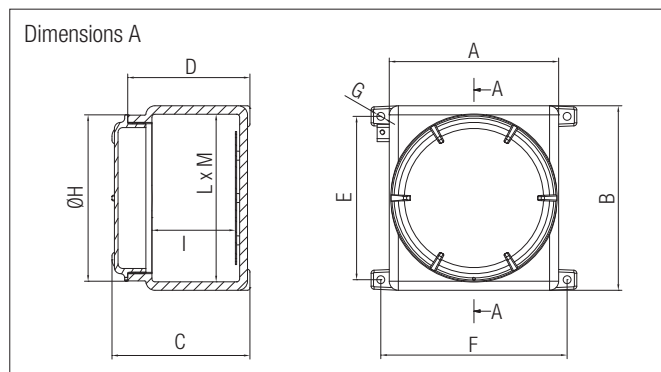
### Explosion protection

Marking ATEX	Ⓜ II 2G Ex d IIC T6 to T3 Gb Ⓜ II 2D Ex tb IIIC T85°C to T200°C Db
Certification	DEKRA 13 ATEX 0209
Marking IECEx	Ex II 2G Ex d IIC T6..T3 Gb Ex II 2D Ex tb IIIC T85°C..T200°C Db
Certification	IECEx DEK 13.0075
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	Depending on the installed parts; observe specifications on the type label.  -20 °C to +40 °C standard -40 °C to +55 °C optional -55 °C to +80 °C maximum for some applications
Approved for zones	1, 2 and 21, 22

### Technical data

Protection class (acc. to IEC 60529)	max. IP 66
Enclosure material	Copper free aluminium alloy (< 0,1% copper) Stainless steel 316
Surface treatment	External powder type painted RAL9006 (cast aluminium version) unpainted (stainless steel version)  Internal anti-condense painting RAL 2004 (optional)
Earthing an bonding	Internal and external earth bolt (M6)
Hardware	Stainless steel SS304 for aluminium and SS316 for stainless steel enclosures
Mountingplate	Aluminium enclosure: Galvanized Steel Stainless steel enclosure: Stainless Steel
Mounting brackets	Casted / welded
Windows	Windows available in screw cover

Overall dimensions and weights Aluminium GUB



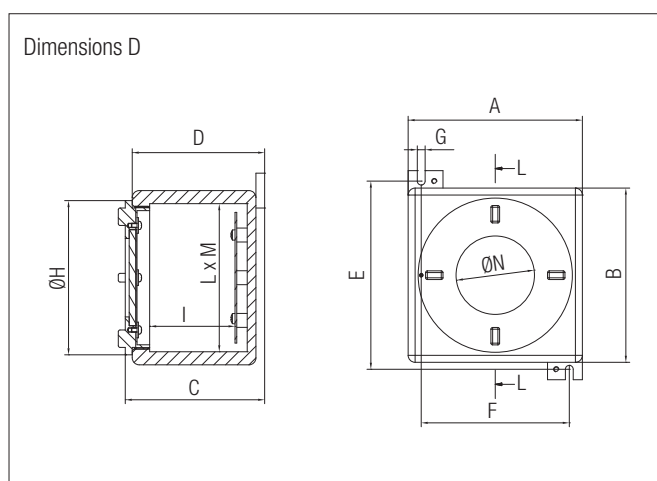
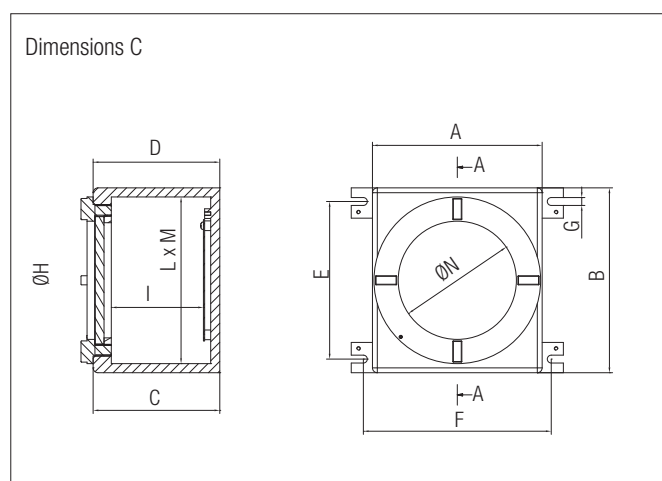
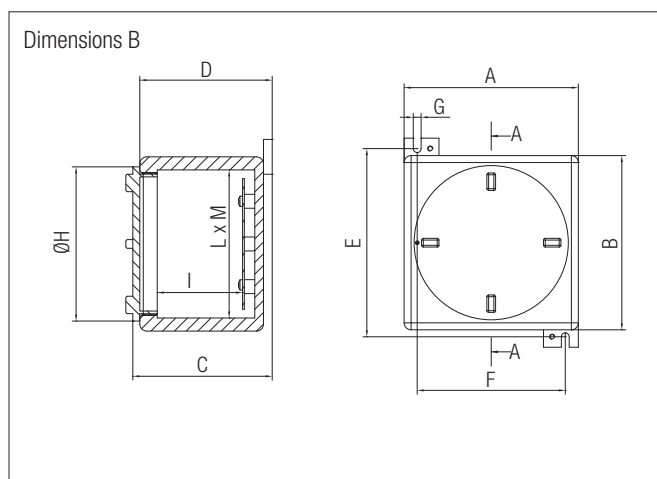
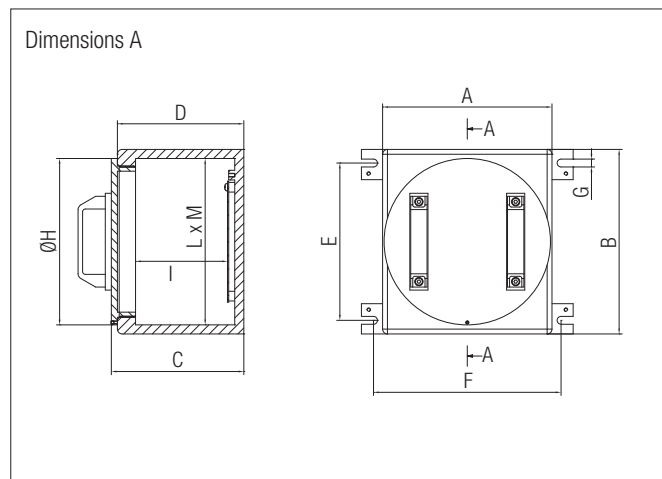
2

Selection chart

Name	Dimensions (mm)										kg	lay-out	Window mountingplate	
	A	B	C	E	F	I	L	M	Ø H	Ø glass (mm)			(mm)	
GUB00A0A0	135	135	111	110	150	50	110	110	113	2	C	80 x 80 x 2		
GUB0A0A0	168	168	145	172	172	97	137	137	154	4	C	110 x 110 x 2		
GUB1A0A0	198	198	152	200	200	88	170	170	176	5	C	150 x 150 x 2		
GUB03A0A0	280	305	228	270	308	133	248	270	275	13.5	A	200 x 220 x 2		
GUB23A0A0	270	310	174	315	275	100	243	283	244	9.8	E	180 x 180 x 2		
GUB4A0A0	420	420	281	380	460	147	384	384	410	31.7	A	280 x 280 x 2		
GUB5A0A0	600	600	382	545	460	208	550	550	580	105.6	A	490 x 490 x 3		
GUBW1A0A0	198	198	152	200	200	88	170	170	176	5.1	D	90	150 x 150 x 2	
GUBW030A0	280	305	228	270	308	133	248	270	275	14.2	B	195	200 x 220 x 2	
GUBW23A0A0	270	310	174	315	275	100	243	283	244	10.3	F	150	180 x 180 x 2	
GUBW4A0A0	420	420	281	380	460	147	384	384	410	30	B	230	280 x 280 x 3	

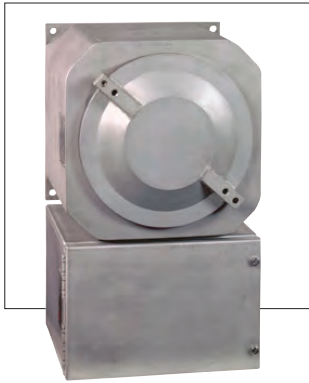
Technical data subject to change without notice.

Overall dimensions and weights Stainless steel GUB INX



Selection chart

Name	Dimensions (mm)												kg	lay-out
	A	B	C	D	E	F	Ø G	H	I	L	Ø M	Ø N		
GUE1 INX AISI316	135	135	100	92	152	105	7	113	47	111	111	-	7	B
GUB0 INX AISI316	170	170	141	133	185	145	9	154	82	140	140	-	13	B
GUB1 INX AISI316	200	200	160	152	216	170	9	177	98	170	170	-	19	b
GUB03 INX AISI316	280	310	219	209	260	310	13	275	152	250	280	-	50	A
GUB23 INX AISI316	310	270	165	157	235	350	12	224	110	290	250	-	32	B
GUB4 INX AISI316	420	420	234	226	380	460	13	405	148	390	390	-	83	A
GUB5 INX AISI316	600	600	320	310	550	630	13	600	203	550	550	-	280	A
GUBW1 INX AISI316	200	200	160	152	216	170	9	177	98	170	170	90	19	d
GUBW03 INX AISI316	280	310	219	209	260	310	13	275	152	250	280	195	50	C
GUBW23 INX AISI316	310	270	165	157	235	350	12	224	110	290	250	150	32	D
GUB4 INX AISI316	420	420	234	226	380	460	13	405	148	390	390	230	83	C



## Features

- Flexible product range with many standard sizes
- IP 66 ingress protection as standard
- Wide temperature ranges
- Flexible certification
- May be used with Ex e/Ex i connection box
- Optional window on lid, sides or back
- High operational reliability
- Non invasive maintenance schedule

## Typical applications

- Motor starter
- Alarm panel
- Intrinsically safe circuits
- Transformer
- Charging unit
- Terminal boxes

## Options

- Ex d enclosure with windows in lid
- lamps or switches in lid or base, for Ex d enclosure, as well as Ex e enclosure

The TNCD range of enclosures is designed to meet the harshest of environments and are ideal for any rugged application where a potentially explosive atmosphere may be present. Our range is comprised of many standard sizes, all manufactured in 316L/CF3M stainless steel providing long term corrosion resistance. The enclosures allow for the use of standard electrical components inside. Thus subsequent replacement and maintenance 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 connection boxes. The enclosures are supplied empty with component certification or as assembled turn-key systems.

## Explosion protection

Marking      Ⓢ II 2G, II 2(1)G, II 2D and EPL Gb/Db  
 Ex d [Ia Ga][Ib Gb][op is Ga] IIC T6-T4 Gb  
 Ex tb [Ia Da][Ib Db] IIIC T85°C - T135°C Db

Certification  
 ATEX            NEMKO 03ATEX263U  
                     TÜV 12ATEX102320X

IECEX            IECEX NEM 10.0001U  
                     IECEX TUN 12.0018X

INMETRO        DNV 16.0018U  
                     DNV 16.0019

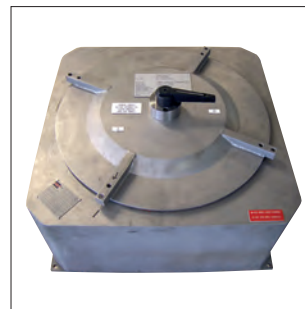
EAC              TC RU C-NO.Г508.В.02029

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

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

## Technical data

Material	Stainless steel 316L/CF3M
Protection class	IP 66
Temperature	-20 °C to +40 °C optional -50 °C to +60 °C
Surface treatment	Shot blasted and acid pickled



Control and indication equipment can be fitted directly into the cover of an Ex d enclosure, or in the optional Ex e box.



**Viewing window for TNCD**

TNCD	max. diameter
1919xx	Ø 65 mm
2828xx	Ø 100 mm
3838xx	Ø 100 mm
5757xx	Ø 154 mm

The window is placed in centre of the lid. Windows (Ø 65 mm) can also be placed on the sides or back wall.

Measurement table for **Ex d IIC Explosion proof enclosures** (mm)

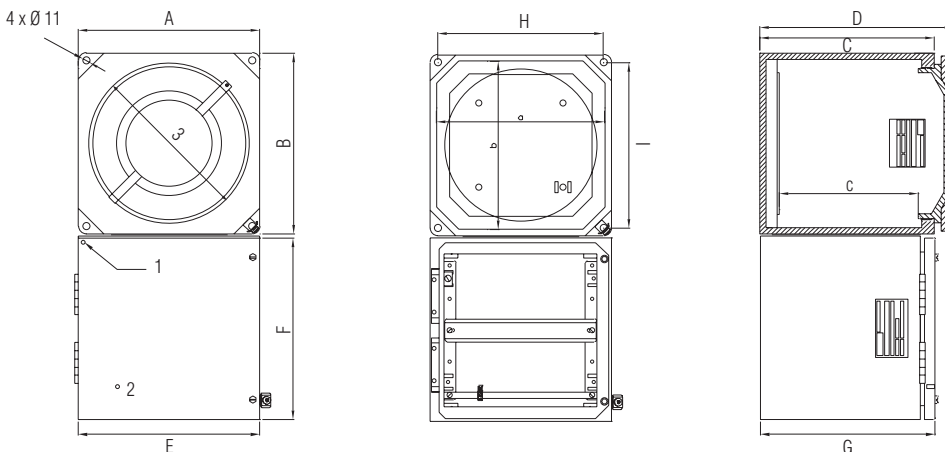
External dimensions						Internal dimensions			Weight (kg)	Fixing dimensions	
TNCD	Width A	Height B	Depth C	Total depth D	Lid aperture	Width a (mm)	Height b (mm)	Depth c (mm)		H	I
191918	190	190	180	205	M 152	167	167	134	16	166	166
282827	280	280	270	295	M 237	257	257	225	37	256	256
383827	380	380	270	295	M 337	357	357	225	60	356	356
575727	570	570	270	300	M 500	550	550	213	125	546	546

Other sizes upon request.

Measurement table for **Ex e connection boxes**

External dimensions				Weight (kg)
TNCD	Width E (mm)	Height F (mm)	Depth G (mm)	
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

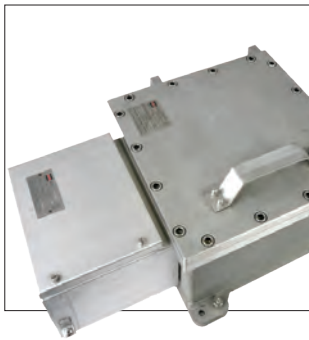
**Dimensions**



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

Technical data subject to change without notice.



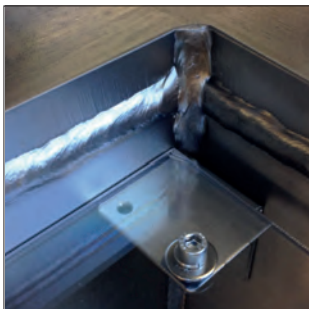


## Features

- Flexible product range with many standard sizes
- IP 66 ingress protection as standard
- Wide temperature ranges
- Flexible certification
- May be used with Ex e/i connection box
- Optional window on sides or lid
- High operational reliability
- Non invasive maintenance schedule
- Atex, IECEx and TR-CU approvals

## Typical applications

- Motor starter
- Alarm panel
- Intrinsically safe circuit
- Transformer
- Charging unit
- Terminal boxes



## Options

- Ex d enclosure with windows in lid or base
- Lamps or switches in lid or base, for Ex d enclosure, as well as Ex e enclosure
- Left, right hinged or without hinges, enclosures without hinges are supplied with a support below the lid

The TNBCD range of enclosures is designed to meet the harshest of environments and are ideal for any rugged application where a potentially explosive atmosphere may be present. Our range is comprised of many standard sizes, all manufactured in 316L stainless steel providing long term corrosion resistance. The enclosures allow for the use of standard electrical components inside. Thus subsequent replacement and maintenance 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 connection boxes. The enclosures are supplied empty with component certification or as assembled turn-key systems.

## Explosion protection

Marking	Ⓔ II 2G, II 2(1)G, II 2D and EPL Gb/Db Ex d [ib Ga][ib Gb][op is Ga] IIB T6-T4 Gb Ex tb [ia Da][ib Db] IIIB T85°C to T135°C Db
Certification ATEX (Component/System)	NEMKO 03ATEX264U TÜV 12 ATEX 101309X
IECEx (Component)	IECEx NEM 10.0003U IECEx TUN 12.0014X
EAC (Component)	TC RU C- NO.ГБ08.В.01606
Directives	EN/IEC: 60079-0, 60079-1, 60079-31
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

## Technical data

Material	Stainless steel 316L/CF3M
Protection class	IP 66 (IP 67 and IP 68 upon request)
Temperature	-20 °C to +40 °C optional -50 °C to +60 °C
Surface treatment	Shot blasted and acid pickled

Control and indication equipment can be fitted directly into the cover of an Ex d enclosure, or in the optional Ex e box.



**Viewing window** for TNBCD

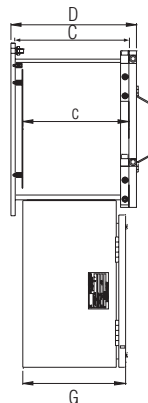
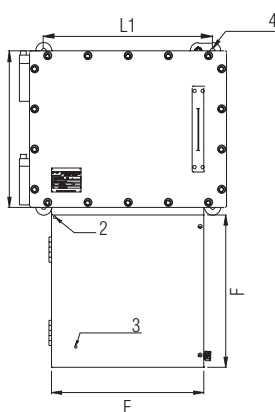
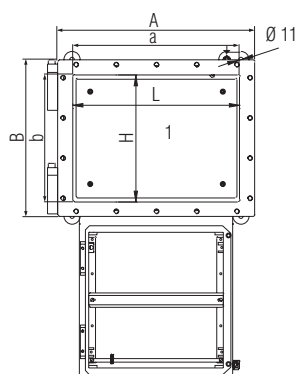
Type	view area	diameter
2526xx	136 mm x 136 mm	Ø 154 mm
3233xx	206 mm x 206 mm	Ø 154 mm
3545xx	236 mm x 336 mm	Ø 154 mm
3857xx	266 mm x 364 mm	Ø 154 mm

**Measurement table** for Ex d IIB Explosion proof enclosures (mm)

External dimensions						Internal dimensions				Fixing dimensions		Mounting plate	
TNBCD	Width A	Height B	Depth C	Total depth D	Window depth	Width a	Height b	Depth c	Weight (kg)	L1	H1	L	H
262531	300	290	280	312	65/100	226	216	262	49	230	290	210	196
323321	360	370	180	212	65/100	286	296	163	57	360	300	266	280
453535	490	390	320	352	65/100/154	416	316	303	94	420	390	400	296
573835	615	420	320	352	65/100/154	541	346	303	122	545	420	525	326

Other sizes upon request.

**Dimensions**



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

Technical data subject to change without notice.



## Features

- Flexible product range with many standard sizes
- Protection class IP 66
- Suitable for demanding environments
- Wide temperature range (-40 °C to +60 °C)
- Several earthing alternatives
- May be used with a Ex e/Ex i connection box
- Window in lid/door may be fitted
- Simplified inspection routines with extended intervals

The DE8BC range comprises many standard sizes of enclosures manufactured in stainless steel 316L. 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/Ex i junction boxes. The enclosures can be delivered empty with U-component certificate or supplied fully assembled according to client demands.

## Explosion protection

Marking	⊕ II 2 G/D or 2[1]G/D and EPL GG/Db Ex d IIB +H2 T4 to T6 Gb Ex d [ia] IIB +H2 T6 Gb Ex tb IIIC T85 °C to 135 °C Db
Certification ATEX	INERIS 09ATEX9017U INERIS 09ATEX0061X
IECEX	IECEX INE 13.0001U IECEX INE 13.0088X
INMETRO	DNV 16.0017/DNV 16.0016 U
EAC	TC RU C- NO.ГБ08.В.02030
Directives	EN/IEC 60079-0, EN/IEC 60079-1, EN/IEC 60079-31

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

## Technical data

Material	Stainless steel 316L
Protection class	IP 66
Temperature	-40 °C to +60 °C
Surface treatment	shot blasted
Earthing	M10

## Applications

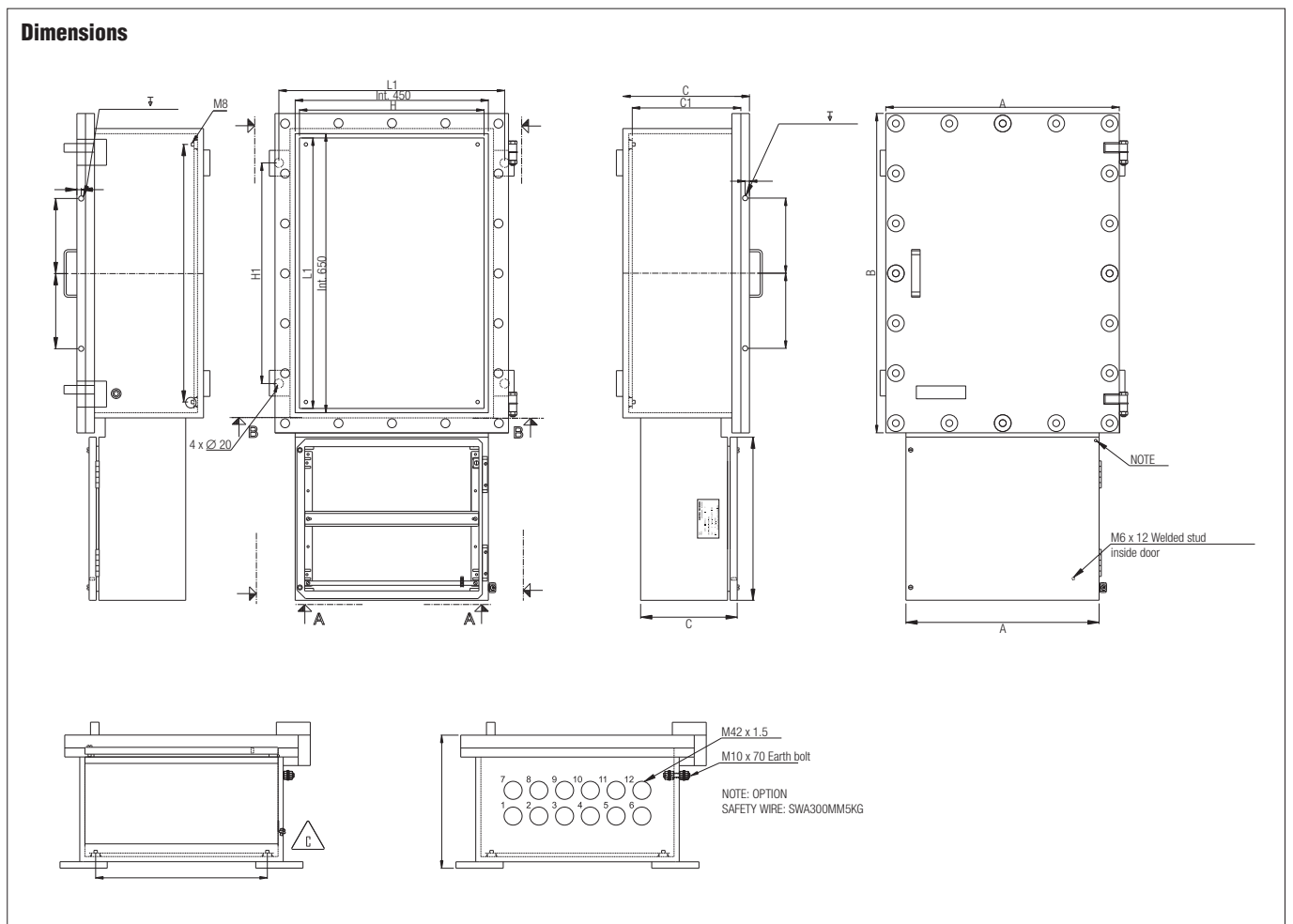
Junction box, control station, uninterrupted power supply, transformer, distribution board, motor starter, umbilical splitter box



**External dimensions** Ex d IIB Explosion proof enclosures

DE8BC..	Width A (mm)	Height B (mm)	Depth C (mm)	Usful depth C1 (mm)	External fixing H1 x L1 (mm)	Fixing holes (mm)	Base plate useful surface H x L, fixing holes (mm)	Max. heat dissipation W (mm)	Weight (kg)
DE8BC32I	338	438	261	192	234 x 326	Ø 12	230 x 330	250	74
DE8BC351I	358	478	261	192	274 x 346	Ø 12	255 x 380	250	85
DE8BC43I	438	538	321	252	334 x 426	Ø 12	330 x 430	380	122
DE8BC44I	548	548	323	252	334 x 526	Ø 20	430 x 430	380	155
DE8BC54I	548	648	323	252	414 x 526	Ø 20	430 x 530	410	180
DE8BC64I	548	748	323	252	514 x 526	Ø 20	430 x 630	470	205
DE8BC75I	668	868	332	253	614 x 630	Ø 20	530 x 730	600	319
DE8BC86I	768	968	378	297	714 x 734	Ø 20	630 x 830	600	447
DE8BC107I	868	1168	400	294	908 x 868	Ø 20	730 x 1030	1200	660
DE8BC108I	868	1168	445	339	908 x 868	Ø 20	730 x 1030	1400	675
DE8BC148I	944	1594	509	417	1200 x 900	Ø 20	780 x 1430	2000	1110

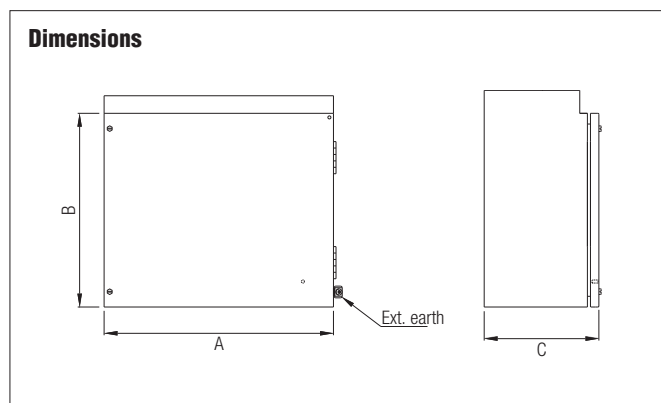
Dimension tolerance: ± 5 mm



## External dimensions Ex e II Increased safety enclosures

TNCN	Width A (mm)	Height B (mm)	Depth C (mm)	No. of command/signal unit	No. of Ammeter	Max. heat dissipation W (mm)	Weight (kg)
354522	350	450	200	9	2	25	6
453822	450	380	220	18	4	42	8
575727	570	570	270	40	4	72	13
767632	760	760	300	108	5	120	22

Dimension tolerance:  $\pm 5$  mm

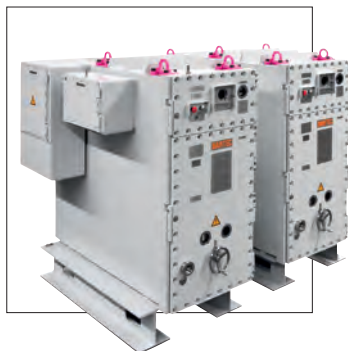


## Assembly possibilities between DE8BC and TNCN

TNCN	DE8BC..									
	43	44	54	64	75	86	107	108	148	
354522	X	X	X	X	X	X	X	X	X	X
453822		X	X	X	X	X	X	X	X	X
575727						X	X	X	X	X
767632							X	X	X	X

X: possibility of combination

Technical data subject to change without notice.



- Max. rated voltage 11kV
- External 800 A busbar system
- Medium voltage and control system separated from each other in two independent Ex d compartments
- Setting all parameters from outside without opening the door

8SN7 is the BARTEC medium voltage switchgear up to 11 kV suitable for hazardous areas like offshore, chemical industries or power plants. Each 8SN7 panel consists of a single unit which can be equipped with a withdrawable circuit breaker or contactor, earthing switch, as well as with all the accessories for conventional units. 8SN7 switchgear is designed for free outdoor standing. On request special accessories like base frame or canopy are available.

The enclosure is in three versions available:

- Carbon steel painted/gap surfaces protected with MOLYKOTE®
- Body with carbon steel painted and gap surfaces with stainless steel (316L)
- Stainless steel complete painted or unpainted

### Explosion protection

Marking ATEX	⊕ II 2G Ex d IIB T5 Gb
Certification	BVS 14ATEX E 143X
Marking IECEx	Ex II 2G Ex d IIB T5 Gb
Certification	BVS 17.0002X

### Electrical data

	Vacuum circuit breaker	Vacuum contactor
Operational voltage	up to 11 kV	up to 7.2 kV
Rated current, bus bar	800 A	
Derated current, VCB	630 A (50 °C)	
Rated current, devices	1250 A	400 A
Rated short time withstand current	33 kA/3 s	
Frequency	50 Hz	50 Hz

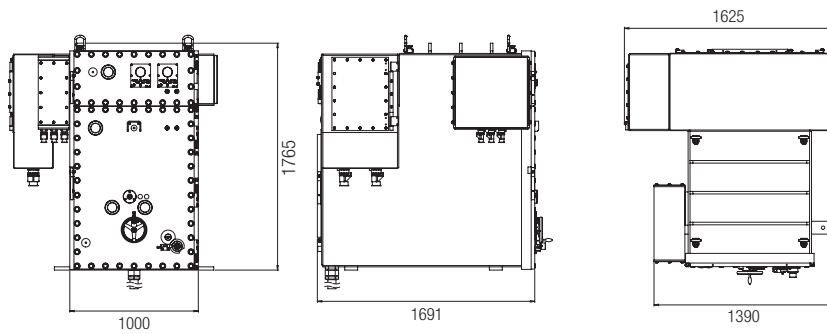
### Mechanical data

Dimension (H x W x D)	1.7 x 1.0 x 1.7 m	1.7 x 0.85 x 1.7 m
Weight	3500 kg	3200 kg
Protection class	IP 66	IP 66
Ambient temperature	0 °C to +50 °C	0 °C to +50 °C
Relative humidity	100 % with space heater	100 % with space heater
Crane eyes	4	4

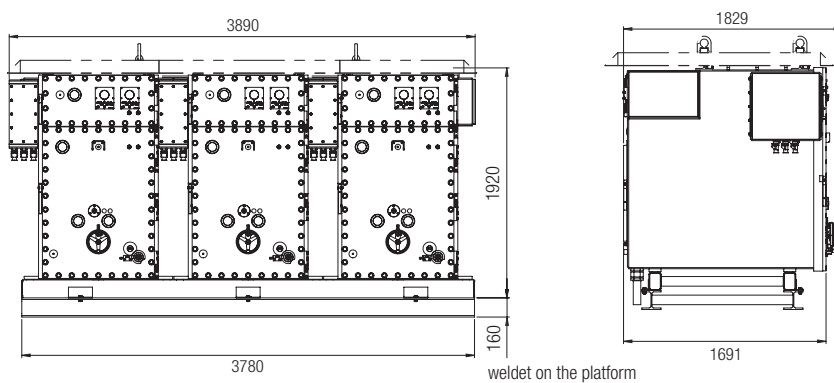
### Options

Base frame	X	X
Canopy	X	X

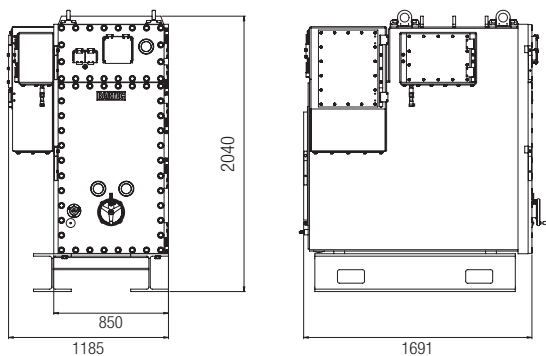
**Dimensions** Single Switchgear Vacuum Circuit Breaker



**Dimensions** Ring Main Unit



**Dimensions** Single Switchgear Vacuum Contactor



**Ordering information**

Version	Order no.
Single Switchgear Vacuum Circuit Breaker	8SN7-VCB-...
Single Switchgear Vacuum Contactor	8SN7-VC-...

Technical data subject to change without notice.



- Variety of covers
- Variety of connection possibilities
- Bushings can be fitted on all sides
- Flange surfaces for mounting enclosures
- Low weight

As flameproof control unit, this Ex d enclosure from BARTEC provides a compact solution for the installation of standard industrial products, whereby components such as contactors and relays are installed in a flameproof enclosure. The enclosure is light, flexible with respect to wiring systems, may be flange mounted and can be equipped with electrical or mechanical line bushings on the sides and in the lid. The different versions of lids enable the installation of display units or devices with control buttons. The installation of Ex i assemblies is also permitted.

### Types of connection

Flameproof control units may be connected either with direct cable entry by means of Ex d cable glands or indirectly using an Ex e junction box. The electrical connection between Ex d and Ex e area takes place using Ex d line bushings with terminals. Control devices and display units can be installed in the junction box

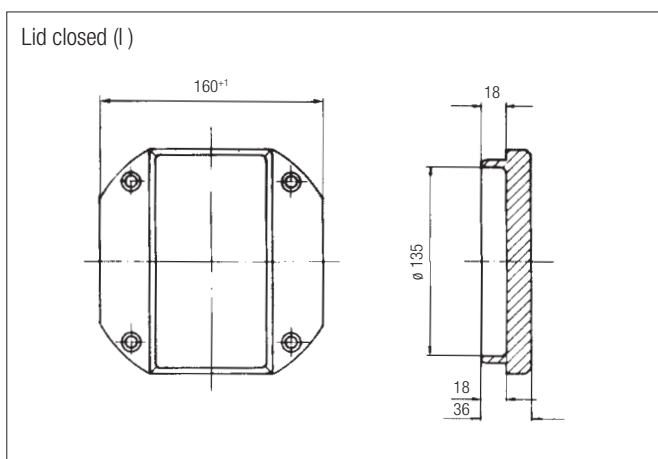
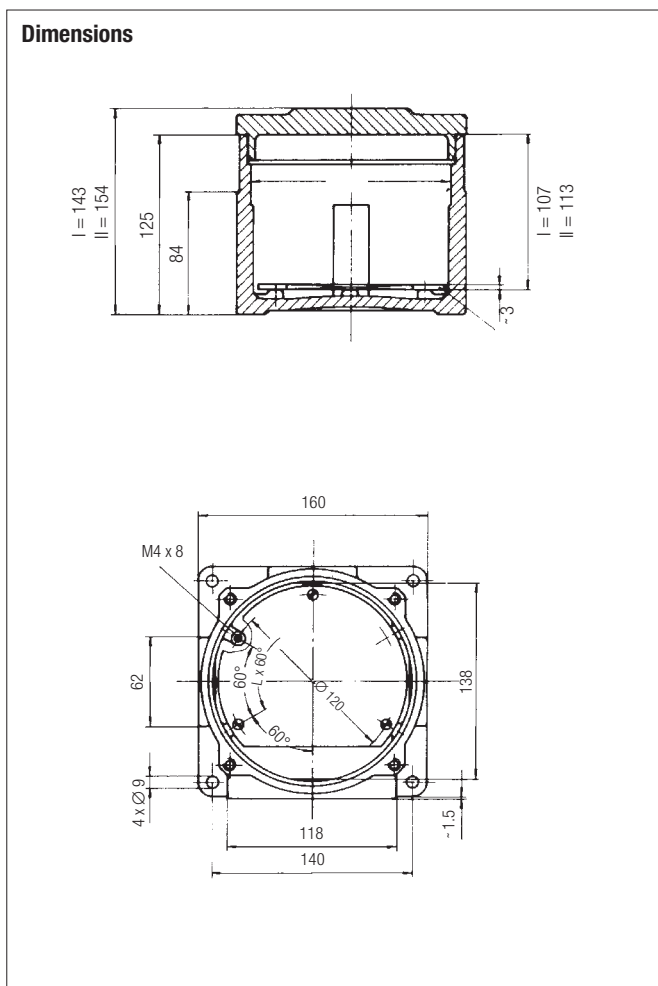
### Explosion protection

Marking max.	Dependent on the installed components; Observe the information on the type label.
Marking ATEX	Ⓢ II 2G Ex db eb ia/ib [ib] IIA, IIB resp. IIC T6, T5 resp. T4 Gb  Ⓢ II 2(1)G Ex db eb ia/ib [ia] IIA, IIB resp. IIC T6, T5 resp. T4 Gb
Certification	PTB 03 ATEX 1138
Ambient temperature	Dependent on the installed components; Observe the information on the type label.
Operating temperature	-20 °C to +55 °C
Approved for	Zone 1 and 2

### Technical data

Power dissipation	max. 67 W (depending on version and type of protection)
Protection class	max. IP 54 (EN/IEC 60529)
Rated cross-section of conductor	max. 16 mm <sup>2</sup>
Weight	approx. 4 kg (depending on the version)
Enclosure material	aluminium
Rated voltage	max. 690 V
Rated current	max. 104 A





Versions to specification, please give particulars in pain text.

**Ordering information**

Version	Order no.
Flameproof control unit Ex d	07-4230-11

Technical data subject to change without notice.



The TNXCD/TNXCC range of Ex d IIC/Ex de IIC enclosures are manufactured in SS316L/CF-3M and are designed as slim, compact, multipurpose tubular enclosures.

## Features

- Laser distance measuring
- Laser gas spectrum analysis and detection
- Global positioning receiver antenna
- Omni directional radio antenna
- Pan-Tilt-Zoom camera
- Static camera
- Xenon Flood light
- Motion Reference Unit (MRU)
- Flameproof rotating axel

## Explosion protection

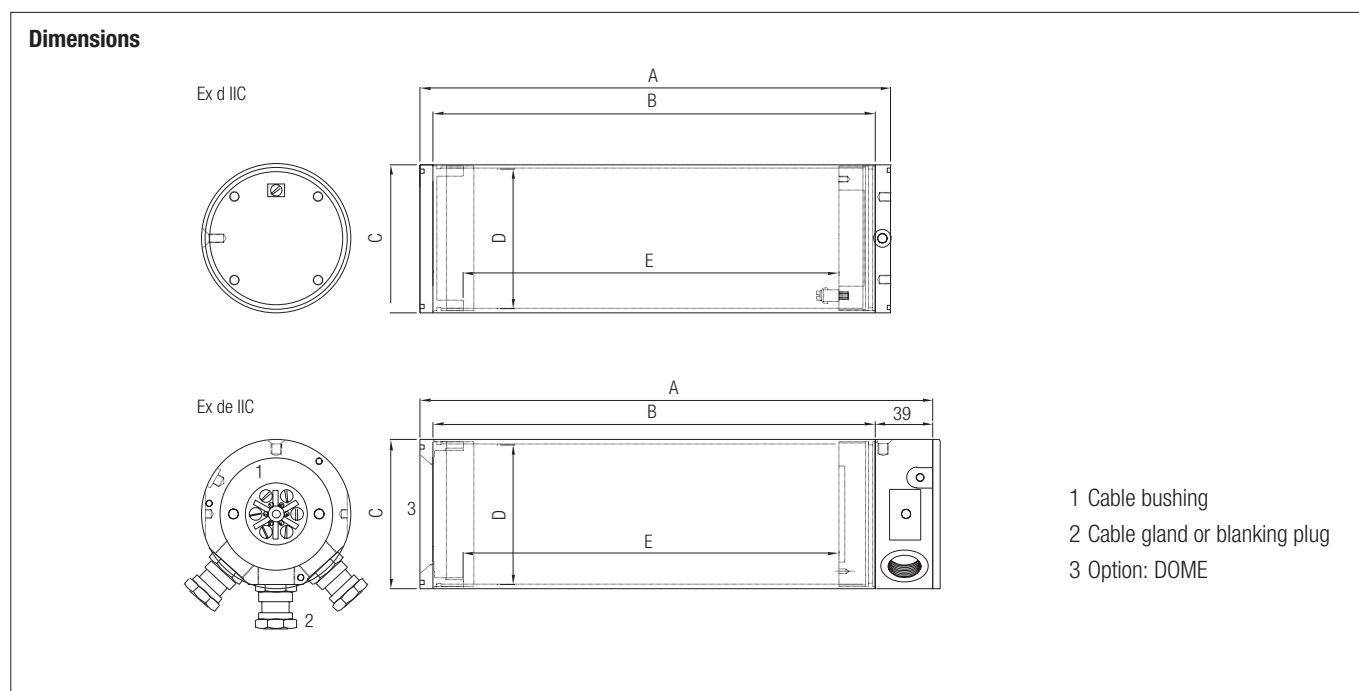
Marking Empty enclosure	⊕ IIC2G/D and EPL Gb/Db Ex d IIC Gb/Ex de IIC Gb
Certification ATEX	DNV-2003-OSL-ATEX-0436U TUV 12 ATEX 101150U DNV-2004-OSL-ATEX-0115
IECEX	TUN 12.0013U
Directives	EN/IEC 60079-0, EN 60079-1, EN 60079-7, EN 50281

Other approvals and certificates, see [www.bartec.de](http://www.bartec.de)

## Technical data

Material	acid resistant stainless steel 316L/CF-3M
Protection class	IP 66 (IP 67 and IP 68 on request)
Ambient temperature	max. -50 °C to +60 °C
Entries	Ex e glands and Ex d bushings, or Ex d glands only
Standard Ex e gland size	M25
Ex d gland size	according to specification
Ex d bushing	max. M42, number and core size according to specification





**Ordering information** TNXCD, Ex d IIC

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 (mm)
XCD1003200	217	193	101	95	155	N/A	3.3	Ø 68
XCD1003360	384	360	101	95	315	N/A	4.1	Ø 68
XCD1303100	120	100	132	126	55	N/A	4.0	Ø 95
XCD1303200	220	200	132	126	155	N/A	5.3	Ø 95
XCD1303360	380	360	132	126	315	N/A	7.0	Ø 95
XCD1553184	194	184	158	149	134	N/A	7.0	Ø 112
XCD1953290	310	290	195	187	238	N/A	13.0	Ø 155

**Ordering information** TNXCD, Ex de IIC

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 (mm)
XCD1002200	248	193	100	95	155	39	3.9	68
XCD1002360	415	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
XCD1551184	257	184	158	149	134	59	10.2	112
XCD1951290	389	290	195	187	238	59	17.1	155

Technical data subject to change without notice.



BARTEC offers two type series of explosion proof encapsulated enclosures for using electric components in hazardous (potentially explosive areas). Within the scope of the EC model test certification, these can be fitted with industrial standard units, such as e.g. small-type motors, printed circuit boards and cameras. The mounted parts are evaluated by BARTEC, fitted into a suitable housing and provided as a complete device with the corresponding ATEX marking. This housing series offers optimum solution approaches for control, regulating and display devices in Zone 1 and zone 21 hazardous areas.

**Explosion protection**

Marking ATEX	Typ 07-61**-****/**** ⓧ II 2G Ex db eb op is ia/ib [ib] IIC T6...T4 Gb ⓧ II 2(1)G Ex db eb op is ia/ib [ja Ga] IIC T6...T4 Gb ⓧ II 2D Ex tb op is ia/ib [ib] IIIC T80°C, T95°C, T130°C Db ⓧ II 2(1)D Ex tb op is ia/ib [ja Da] IIIC T80°C, T95°C, T130°C Db
Certification	EPS 14 ATEX 1696 X
Marking IECEx	Typ 07-61**-****/**** Ex db eb op is ia/ib [ib] IIC T6...T4 Gb Ex db eb op is ia/ib [ja Ga] IIC T6...T4 Gb Ex tb op is ia/ib [ib] IIIC T80°C, T95°C, T130°C Db Ex tb op is ia/ib [ja Da] IIIC T80°C, T95°C, T130°C Db
Certification	IECEx EPS 14.0042 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	

**Technical data**

Protection class	min. IP 54/IEC 60529
Enclosure material	Aluminum, stainless steel or brass
Surface	bare, electro-plated or varnished









**Ordering information**

Version	Order no.
Control, regulating and display devices	07-61.1-... 07-61.2-...

Technical data subject to change without notice.

The control, regulating- and display devices are assembled out of the following modules to suit the required function. The size of the equipment depends on the components, power dissipation and the required housing volume.

**Ordering information**

Front flange	Enclosure	Rear flange
<p>closed</p> <p>e. g. for vibration measuring instrument or printed circuit board installation</p> 	<p>Ø 30 mm to max. 25 cm<sup>3</sup> volume                  Ø 45 mm to max. 100 cm<sup>3</sup> volume                  Ø 60 mm to max. 200 cm<sup>3</sup> volume                  Ø 90 mm to max. 1000 cm<sup>3</sup> volume                  Ø 120 mm to max. 2750 cm<sup>3</sup> volume                  Ø 140 mm to max. 8625 cm<sup>3</sup> volume                  Ø 160 mm to max. 8625 cm<sup>3</sup> volume                  Ø 180 mm to max. 8625 cm<sup>3</sup> volume                  Ø 200 mm to max. 8625 cm<sup>3</sup> volume</p>	<p>with multicore tube encapsulated directly in the housing</p> <p>only up to a maximum 60 mm housing diameter</p> 
<p>with shaft bushing</p> <p>e. g. for small motors, rotary encoders or switches</p> 		<p>with cable entry</p> 
<p>with inspection glass</p> <p>e. g. for cameras, optoelectronic units Displays</p> 		<p>with Ex d screwed cable gland</p> <p>not suitable for gas subgroup IIC when sparking parts have been fitted.</p> 
		<p>Flange with Ex e connection housing</p> 



- High IP-protection class
- Small design
- Simple installation

These up to 4 W potentiometers show that Ex potentiometers can be small and compact. The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen cemented wire-wound resistors and carbon film resistors and developed a standard-program range. The metal Ex d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2. The potentiometer is fitted into an enclosure that meets the requirements of an approved type of protection in conformance to IEC/EN 60079-0.

**Explosion protection**

Marking ATEX	II 2G Ex db IIC Gb I M2 Ex db I Mb
Certification	PTB 03 ATEX 1025 U
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-55 °C to +40 °C/+60 °C/+80 °C

**Technical data**

Protection class	min. IP 54 EN/IEC 60529
Enclosure	nickel-plated brass (CuZn)
Tightning torque	200 Ncm (for nuts)
Resistance characteristic	linear
Electrical connection	cores 4GAF - 0.75

**Cemented wire-wound resistors**

Resistance values/ power ratings	see ordering information
Resistance tolerance	± 5 %
Linearity tolerance	max. 3 % of final value
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 250°/270°
End stop strength	30 Ncm
Weight	180 g (with cores (0.5 m))

**Carbon-film resistors on ceramic**

Resistance values/ power ratings	see ordering information
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 270°
End stop strength	100 Ncm
Weight with cores (0.5 m)	200 g

**Precision wire-wound resistors**

Resistance values/ power ratings	min. IP 54 EN/IEC 60529
Insulation resistance	≥ 1000 MΩ
Resistance tolerance	± 5 %
Linearity tolerance	to 500 Ω ± 1 % > 500 Ω ± 0.5 %
Rotation	electr./mech. 320°
End stop strength	100 Ncm
Weight	170 g (with cores (0.5 m))

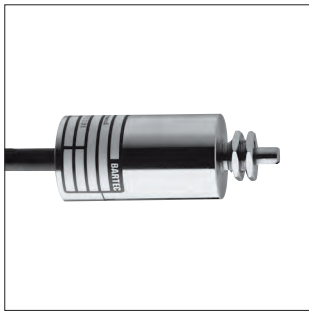
Dimensions (mm)	Ordering information				Temperature class/ power rating	Complete order no. (indicate resistance values in plain text)
Cemented wire-wound resistors for high power ratings  	Resistor type/ standard resistance values <b>(stock items printed bold)</b>				T6/2,5 W resp. T4/4 W	07-6612- □ 111 resp. 07-6613- □ 111
	Cemented wire-wound resistors higher power ratings					
Carbon-film resistors Precision wire-wound resistors  	10 Ω	68 Ω	<b>470 Ω</b>	3.3 kΩ	T6/2 W           T6/0.5 W	07-6612- □ 113
	12 Ω	82 Ω	<b>560 Ω</b>	3.9 kΩ		
15 Ω	<b>100 Ω</b>	<b>680 Ω</b>	<b>4.7 kΩ</b>			
18 Ω	120 Ω	820 Ω	<b>5.6 kΩ</b>			
22 Ω	150 Ω	1 kΩ	<b>6.8 kΩ</b>			
27 Ω	180 Ω	1.2 kΩ	8.2 kΩ			
33 Ω	<b>220 Ω</b>	1.5 kΩ	<b>10 kΩ</b>			
39 Ω	<b>270 Ω</b>	1.8 kΩ				
47 Ω	<b>330 Ω</b>	<b>2.2 kΩ</b>				
56 Ω	390 Ω	<b>2.7 kΩ</b>				
Carbon film resistors						
	100 Ω	1 kΩ	10 kΩ	100 kΩ	T6/2 W           T6/0.5 W	07-6612- □ 113
	220 Ω	2.2 kΩ	22 kΩ	220 kΩ		
	470 Ω	4.7 Ω	47 kΩ	470 kΩ		
				1 MΩ		
Precision wire-wound resistors						
	10 Ω	100 Ω	1 kΩ	10 kΩ	T6/0.5 W	07-6612- □ 112
	20 Ω	200 Ω	2 kΩ	20 kΩ		
	50 Ω	500 Ω	5 kΩ			
Special versions - please indicate particulars in plain text						
<ul style="list-style-type: none"> <li>• Anti-rotation pin on front of enclosure</li> <li>• Threaded holes on front of enclosure</li> <li>• Side entry of leads</li> <li>• Other resistance values</li> </ul>						

2

Accessories/Order no.

Rotary knob shaft Ø 6 mm Order no. 03-5401-0001  	Pointer knob shaft Ø 6 mm Order no. 03-5401-0002  	Scale 0 to 100 Order no. 05-0144-0112 (270°) Order no. 05-0144-0127 (320°)  	Slip clutch adjustable to 50 Ncm, shaft Ø 6 mm Order no. 03-5600-0001  
--	---	--	--

Technical data subject to change without notice.



- High IP-protection class
- Simple installation
- No further approvals required

This standard range of up to 8 W potentiometers with wire-wound resistors show that Ex potentiometers can be small and compact. The external dimensions are approximately the same as those of standard industrial potentiometer enclosures. Central fixing in a single hole and the standard size of shaft have been included. From the variety of resistors on the market we have chosen the most commonly used types and developed a standard program range. The metal Ex d enclosures are tailored to the dimensions of the resistors and feature a standard 30 mm diameter. The potentiometers have been designed so that the stated nominal capacities can be fully exploited at temperature class T6 or T5 and be deployed in zones 1 and 2. In addition to the standard models all other versions such as tandem potentiometers, potentiometers with microswitches, non-standard shafts or larger resistor diameters can be encapsulated in enclosures of up to 120 mm diameter.

### Explosion protection

Marking ATEX	II 2G Ex db eb IIC T6 bzw. T5 Gb II 2D Ex tb IIIC T80 °C resp. T95 °C Db
Certification	EPS 14 ATEX 1696 X
Marking IECEx	Ex db eb IIC T6 bzw. T5 Gb Ex tb IIIC T80 °C resp. T95 °C Db
Certification	IECEx EPS 14.0042 X
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to +70 °C

### Technical data

Protection class	min. IP 54 EN/IEC 60529
Enclosure	metal
Tightening torque	200 Ncm (for nuts)
Resistance characteristic	linear
Electrical connection	cable H05VV-F4G 0.75

GY BK BN GNYE

### Cemented wire-wound resistors

Resistance values/ power ratings	see ordering information
Resistance tolerance	± 5 %
Linearity tolerance	max. 3 % of final value
Insulation resistance	≥ 100 MΩ
Rotation	electr./mech. 250°/270°
End stop strength	30 Ncm
Weight	2.5 W 6 W 8 W (with cable (1 m)) 250 g 320 g 550 g

### Carbon-film resistors on ceramic

Resistance values/ power ratings	see ordering information
Isolationswiderstand	≥ 100 MΩ
Rotation	electr./mech. 270°
End stop strength	100 Ncm
Weight	240 g (with cable (1 m))

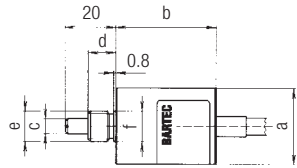
### Precision wire-wound resistors

Resistance values/ power ratings	see ordering information
Resistance tolerance	1 turn ± 5 %/10 turns > 50 Ω ± 3 %
Linearity tolerance	1 turn to 500 Ω ± 1 % > 500 Ω ± 0.5 % 10 turns potentiometer ± 0.25 %
Insulation resistance	min. 1 000 MΩ
Rotation	electr./mech. 1 turn 320° ± 2° 10 turns 10 x 360° +10°
Weight	1 turn 210 g/10 turns 300 g (with cable (1 m))
End stop strength	1 turn 100 Ncm/10 turns 30 Ncm

Technical data subject to change without notice.



**Dimensions (mm)**



**Ordering information**

Resistor type/  
standard resistance values  
(stock items printed bold)

Temperature  
class/  
power rating

Complete  
order no.  
(indicate resistance values  
in plain text)

a	b	c	d	e	f				
Ø 30	55	Ø 6	11	M12 x 1.5	Ø 12	Cemented wire-wound resistors higher power ratings			
						10 Ω    180 Ω    3.3 kΩ	to	<b>T6/2,5 W</b>	07-6622- □ 111
						12 Ω    220 Ω    3.9 kΩ	10 k Ω	resp. <b>T5/3 W</b>	resp.
						15 Ω    270 Ω    4.7 kΩ			07-6623- □ 111
						18 Ω    330 Ω    5.6 kΩ			
Ø 45	90	Ø 6	11	M12 x 1.5	Ø 12	22 Ω    390 Ω    6.8 kΩ			
						27 Ω    470 Ω    10 kΩ	to	<b>T6/5 W</b>	07-6624- □ 111
						33 Ω    560 Ω    12 kΩ	20 k Ω	resp. <b>T5/6 W</b>	resp.
						39 Ω    680 Ω    15 kΩ			07-6625- □ 111
						47 Ω    820 Ω    18 kΩ			
Ø 60	87	Ø 6	11	M12 x 1.5	Ø 12	56 Ω    1 kΩ    20 kΩ			
						68 Ω    1.2 kΩ    22 kΩ	to	<b>T6/7 W</b>	07-6626- □ 111
						82 Ω    1.5 kΩ    27 kΩ	30 k Ω	resp. <b>T5/8 W</b>	resp.
						100 Ω    1.8 kΩ    30 kΩ			07-6627- □ 111
						120 Ω    2.2 kΩ			
Ø 30	45	Ø 6	11	M12 x 1.5	Ø 12	150 Ω    2.7 kΩ			
						Carbon-film resistors	<b>T6/2 W</b>	07-6622- □ 113	
						100 Ω    1k Ω    10 k Ω    100 k Ω			
						220 Ω    2.2 k Ω    22 k Ω    220 k Ω			
						470 Ω    4.7 k Ω    47 k Ω    470 k Ω			
						1 M Ω			
						Precision wire-wound resistors			
						<b>T6/1,2 W</b>			
						07-6622- □ 112			
						10 Ω    100 Ω    1 kΩ    10 kΩ			
						20 Ω    200 Ω    2 kΩ    20 kΩ			
						50 Ω    500 Ω    5 kΩ			
Ø 38	50	Ø 6.35	8	3/8-32	Ø 10.3	10 turns potentiometer*			
						<b>T6/2 W</b>	07-6624- □ 102		
						20 Ω    500 Ω    10 kΩ	Lead length:		
						50 Ω    1 kΩ    20 kΩ	100 mm to 1000 mm		
						100 Ω    2 kΩ    50 kΩ	In 100-mm steps		
200 Ω    5 kΩ    100 kΩ	5 = standard 500 mm								

\* Max. wall thickness for installing a switch panel = 2.5 mm

Special versions, Please indicate particulars in plain text

- Anti-rotation pin on front of enclosure
- Threaded holes on front of enclosure
- Side entry of cable
- Other resistance values

**Accessories/Order no.**

Rotary knob shaft Ø 6 mm Order no. 03-5401-0001	Pointer knob shaft Ø 6 mm Order no. 03-5401-0002	Scale 0 - 100 Order no. 05-0144-0112 (270 °) 05-0144-0127 (320 °)	More turn drive* shaft Ø 6.35 mm Order no. 03-5425-0001	Slip clutch, adjustable to 50 Ncm, shaft Ø 6 mm Order no. 03-5600-0001



The limit value transmitters of Types 07-31...-.../... are deployed in conjunction with pneumatic actuators on valves and fittings. They serve to signal the "open/closed" status of a fitting. This end position is communicated by means of up to a maximum of 6 limit switches in the "Ex d" type of protection or by means of 6 proximity initiators in conformance to NAMUR in the "Ex i" type of protection. In intrinsically safe proximity initiators there is a choice of slot initiators or V3 initiators. The limit monitors are available in polyester, aluminium and stainless steel. The metal versions can be used in temperatures down to -60 °C – depending on the fitted components. To ensure mechanical adaptability to the pneumatic actuators, we supply 4 consoles according to VDI/VDE 3845. The BARTEC limit monitors can be used in hazardous (potentially explosive) areas in Zone 1 and 2 in accordance with the certified explosion sub-groups IIA, IIB and IIC and the temperature classes T5/T6 and in Zone 21 and 22 in accordance with the certified max. surface temperature.

**Explosion protection**

Marking max.	dependent on the installed parts
Marking	⊕ II 2G Ex db eb mb ia resp. ib IIC T6 or T5 Gb ⊕ II 2(1)G Ex db eb ia/ib [ia]
Certification	IBExU02ATEX1126 IECEX IBE 13.0038
Other approvals and certificates, see <a href="http://www.bartec.de">www.bartec.de</a>	
Ambient temperature	-20 °C to max. +40 °C option -60 °C to max. +70 °C

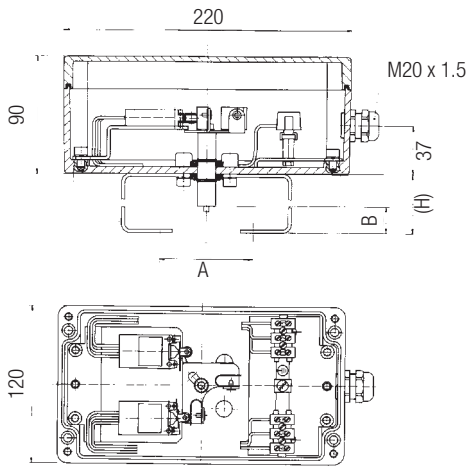
**Technical data**

Protection class	Enclosure IP 65/67 according to EN/IEC 60529
Material	Type 07-31A cast aluminium Type 07-31B polyester black Type 07-31D high quality stainless steel
Mounting console and connection dimensions	according to DIN EN ISO 5211 F05 resp. VDI/VDE 3845
Cable entry	Ex cable glands M20 x 1.5 (7 to 13)

**Ordering information** for Standard-Limit Monitors

		Console Dimensions (mm)			
		A	B	H	
	<b>Aluminium enclosure</b>	black	(220 x 120 x 90 mm)	for Zone 1 + 2 and 21 + 22	Order no.
<b>Ex ed</b> Picture 1	Console VDI/VDE 3845	130	50	75	07-31A1-2209/9005
	Console VDI/VDE 3845	130	30	55	07-31A1-2209/9004
	Console VDI/VDE 3845	80	30	55	07-31A1-2209/9003
	Console VDI/VDE 3845	80	20	45	07-31A1-2209/9002
	Connection dimensions DIN EN ISO 5211 F05	without console			07-31A1-2209/9001
	<b>Polyester enclosure</b>	black	(220 x 120 x 90 mm)	for Zone 1 + 2 and 21 + 22	
<b>Ex ed</b> Picture 1	Console VDI/VDE 3845	130	50	75	07-31B1-2209/9004
	Console VDI/VDE 3845	130	30	55	07-31B1-2209/9003
	Console VDI/VDE 3845	80	30	55	07-31B1-2209/9002
	Console VDI/VDE 3845	80	20	45	07-31B1-2209/9001
	Connection dimensions DIN EN ISO 5211 F05	without console			07-31B1-2209/9007
	<b>Polyester enclosure</b>	black	(110 x 75 x 55 mm)	for Zone 1 + 2 and 21 + 22	
<b>Ex ed</b> Picture 2	Console VDI/VDE 3845	130	50	75	07-31B1-1105/9005
	Console VDI/VDE 3845	130	30	55	07-31B1-1105/9004
	Console VDI/VDE 3845	80	30	55	07-31B1-1105/9003
	Console VDI/VDE 3845	80	20	45	07-31B1-1105/9002
	Connection dimensions DIN EN ISO 5211 F05	without console			07-31B1-1105/9001
	<b>Stainless-steel enclosure</b>		(150 x 150 x 80 mm)	for Zone 1 + 2 and 21 + 22	
<b>Ex ed</b> Picture 3	Console VDI/VDE 3845	130	50	75	07-31D1-1508/9006
	Console VDI/VDE 3845	130	30	55	07-31D1-1508/9005
	Console VDI/VDE 3845	80	30	55	07-31D1-1508/9004
	Console VDI/VDE 3845	80	20	45	07-31D1-1508/9003
	Connection dimensions DIN EN ISO 5211 F05	without console			07-31D1-1508/9002

Picture 1



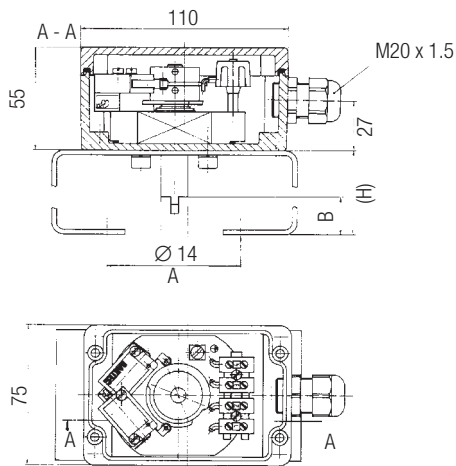
Aluminium enclosure 220 x 120 x 90 mm  
 Polyester enclosure 220 x 120 x 90 mm

Built-in  
 2 microswitches  
 Ex protection type Ex e d IIC  
 Switching function changeover contact

Cable connection via Ex e modular terminals.

The version with enclosure dimensions 220 x 120 x 90 mm optionally provides additional terminals for the connection of a magnetic valve.

Picture 2

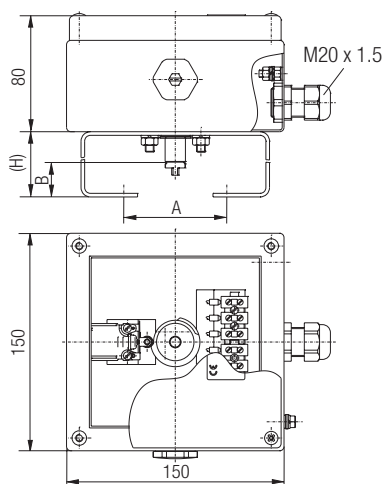


Polyester enclosure 110 x 75 x 55 mm

Built-in  
 2 micro-switches  
 Ex protection type Ex e d IIC  
 Switching function NO contact

The cable is connected to Ex e-rail-mounted terminals.

Picture 3



Stainless-steel enclosure 150 x 150 x 80 mm

Fitted components  
 2 microswitches  
 Ex protection type Ex e d IIC  
 Switching function Changeover contact

The cable is connected to Ex e-rail-mounted terminals.

Technical data subject to change without notice.

## Customer requirements Control stations

### Customer

Company

Street

Zip code/city

Country

Contact person

E-mail

Phone

Fax

### BARTEC (to be filled by BARTEC staff)

Sales employee

Offer  Order

Project name/application number

Customer number

Order value

Deadline Offer

Delivery

### System options

Please fill in the appropriate form

Flameproof control station  Form 1

Local control station  Form 2

Enclosures for small control, regulating and display devices  Form 3

Was a similar system already supplied?  Yes  No

Description

Available documents

Wiring diagram  Technical description

Drawings/pictures  I/O list

### Technical informations

Neutral phase  Yes  No

Rated current A

Frequency Hz

Power kW

Rated voltage V  DC  AC

### Certification

ATEX

IECEx

TR-CU

INMETRO

Others

NEC 500 Class I  Div. 1  Div. 2

NEC 505 Class I  Zone 1  Zone 2

### Area of application

Gas  Zone 1 (2G)  Zone 2 (3G)

Temperature class  T3  T4  T5  T6

IP rating  54  65  66  \_\_\_\_\_

Dust  Zone 21 (2D)  Zone 22 (3D)

Maximum surface temperature  80 °C  95 °C

Sub Ex area  IIA  IIB

IIB + H2  IIC

Temperature range  -20 °C to +40 °C

Other °C

Installation area  Indoor  Outdoor

**Flameproof control stations**

Enclosure sizes (mm)

Length                      Width                      Height

or max. available installation dimensions (mm)

Length                      Width                      Height

Direct cable entry     Yes                       No

Ex e/Ex i connection range     Yes                       No

Material Ex d             SS316                       Alu RAL 9006

Circuit breaker operatable from outside     Yes                       No

Markers for internal wiring     Yes                       No

Cable diameter available     Yes                       No

Kind of cable                       armoured                       unarmoured

In case of Ex de solution

Actuators to be placed in     Ex d section                       Ex e section

Material Ex e                       SS316     GRP     Alu

**Installations/customer provision**

**Installations/customer provision/free delivery**

Quantity	Manufacturer	Type	Dimensions (mm)	Power dissipation (W)	Data sheet

**Direct cable entry - Terminals**

Quantity	Nominal cross section (mm <sup>2</sup> )	Ex i or Ex e

**Direct cable entry - Cable glands**

Quantity	Thread size	Clamping range

**Ex e/Ex i connection range - Terminals**

Quantity	Nominal cross section (mm <sup>2</sup> )	Ex i or Ex e

**Ex e/Ex i connection range - Cable glands**

Quantity	Thread size	Clamping range	Ex i or Ex e



**Enclosures for small control, regulating and display devices**

**Type**

<input type="checkbox"/> 07-61.1..	$V \leq 100 \text{ cm}^3$
<input type="checkbox"/> 07-61.2..	$100 \text{ cm}^3 \leq V \leq 8625 \text{ cm}^3$

**Enclosure material**

<input type="checkbox"/> Aluminium bare	RAL colour
<input type="checkbox"/> Aluminium varnished	
<input type="checkbox"/> Stainless steel V2A	
<input type="checkbox"/> Stainless steel V4A	

**Mounting type**

<input type="checkbox"/> Front-mounted
<input type="checkbox"/> Rear flange for floor-/wall-mounting
<input type="checkbox"/> Special request:

**Information about mounting parts**

**Rotating electrical machines**

e. g. Motors/power-wheel instruments

Max. rotation	U/min
Max. voltage	V
Power input	A
Power consumption	W
Shaft version	<input type="checkbox"/> like examples <input type="checkbox"/> like drawings
Fittings exchangeably	<input type="checkbox"/> yes <input type="checkbox"/> no

**Transmitter/Receiver**

Max. voltage	V
Power input	A
Power consumption	W
Radiation intensity	
Inspection glass, size	mm

**Instruments without spindle/inspection glass**

(e. g. vibration measuring instrument)

Max. voltage	V
Power input	A
Power consumption	W

