

# Insulated (Exd/Exe) adaptors - DB Series



Type DB

## Technical specifications

### Code of protection categories

ATEX: II 2 GD, Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db

IECEx: Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db

### Compliance standards

ATEX: EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31

IECEx: IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31

### Certificate details

ATEX: ITS16ATEX101088X

IECEx: IECEx ITS 16.0049X

### Temperature

-20°C to +130°C

### Ingress protection (IP):

IP64 when fitted without sealing washer. IP66/IP68 when fitted with washer or thread sealant according to manufacturer's instructions

### Part number:

Please refer to part numbering system below

[Download certificates and documents here](#)

The DB series is a Redapt range of insulated adaptors that provide a method of insulating a cable gland and the cable armour from the equipment into which it has been fixed.

Insulated adaptors provide a vital safety precaution for systems with sensitive electronic equipment that are reliant on an interference-free power supply.

Male and female thread are available in different materials if galvanic corrosion is a factor.

With ATEX and IECEx certification for both Exd "Flameproof" and Exe "Increased Safety" environments, insulated adaptors are suited for hazardous-area applications worldwide.

## Materials

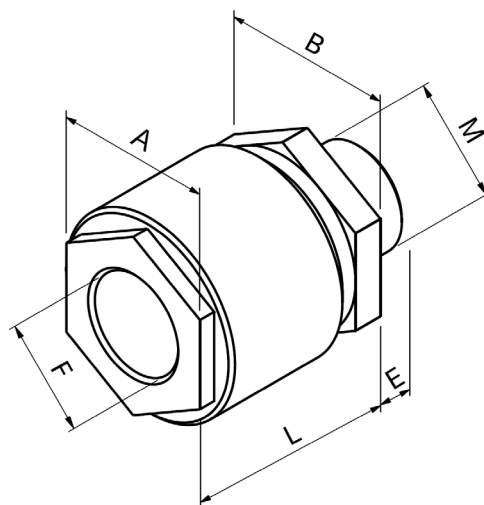
- Brass CZ121
- 316 stainless steel
- Mild steel
- Aluminium

## Threadforms

- Metric
- NPT
- NPSM
- PG
- ISO pipe (BSP)
- ET

## Plating options

- Electroless nickel
- Zinc
- Others on application



## Dimensions

Size	Total length (A)	Male length (B)
M16	64.00 (min.)	15.00 (min.)
M20	64.00 (min.)	15.00 (min.)
M25	64.00 (min.)	15.00 (min.)
M32	64.00 (min.)	15.00 (min.)
M40	64.00 (min.)	15.00 (min.)
M50	64.00 (min.)	15.00 (min.)
M63	64.00 (min.)	15.00 (min.)
M75	64.00 (min.)	15.00 (min.)

# Insulated (Exd/Exe) adaptors - DB Series

## Application

To avoid relying on the contact between cable termination and equipment enclosure for grounding the cable armour, an insulated adaptor can be fitted to both ends of the cable with a grounding device (i.e. earth tag/lug) fitted between the adaptor and the termination. The armour current can then be taken from the grounding device to ground in a controlled, positive manner that can be *inspected* easily.

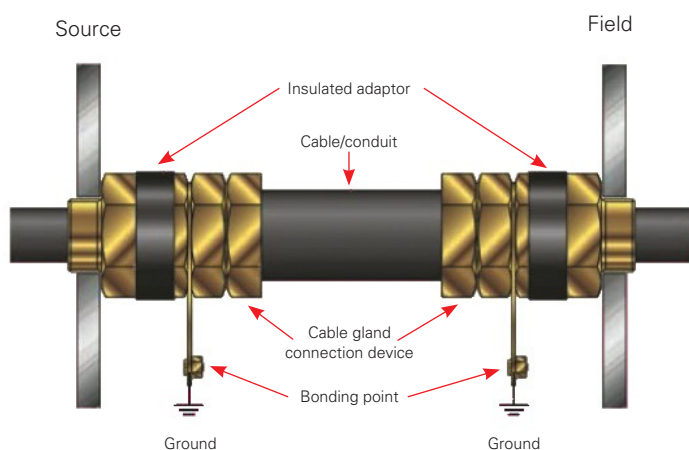
## Single point grounding

In many applications it is sufficient to ground the cable armour at one end. For single point grounding, the insulated adaptors would again be used at both ends of the cable but with the earth tag fitted only to the end where grounding is required.

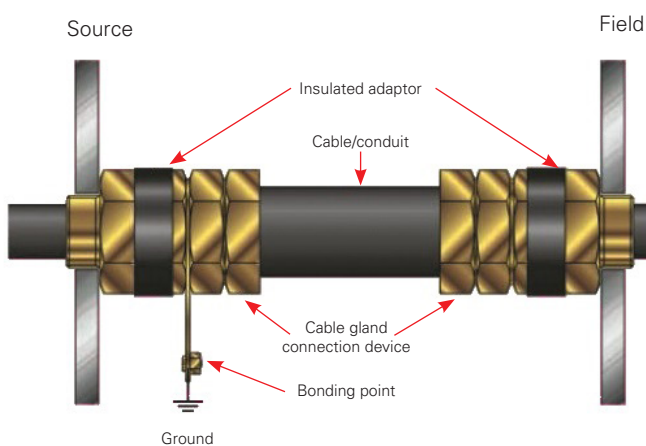
Single point grounding can:

- Reduce the circulating currents that can cause heating of high capacity cables.
- Reduce the risk of damage to electronic equipment within the enclosure in the event of a short circuit to ground through the enclosure.
- Reduce the problems of electrical noise on the armour affecting the clean earth required for some sensitive instruments.

## Standard application



## Single point grounding



Note: Graphic representation only - actual appearance may differ.

# Insulated (Exd/Exe) adaptors - Product coding

Product	Digits 1 & 2
Exd / Exe Insulated ADAPTOR	<b>DB</b>

Certification	Digit 3
<b>U</b>	Exd I and IIC & Exe I and IIC

Material	Digit 4
<b>1</b>	Brass
2	Mild steel
3	Stainless steel
5	Aluminium

Note: glass filled nylon insulating material

Plating	Digit 5
<b>0</b>	Unplated
1	Electroless nickel
2	Zinc

## Notes:

- Threadform codes below to be used for both male and female threads.
- For mixed materials or additional thread options please contact us.

## Digits 6 & 7, Male thread – Digits 8 & 9, Female thread

Metric	ET imperial conduit	NPT	NPSM	ISO pipe parallel (BSPP)	ISO pipe taper (BSPT)	PG
03 M16	17 5/8" ET	<b>29 1/2" NPT</b>	42 1/2" NPSM	55 1/2" BSPP	68 1/2" BSPT	79 PG7
<b>04 M20</b>	18 3/4" ET	30 3/4" NPT	43 3/4" NPSM	56 3/4" BSPP	69 3/4" BSPT	80 PG9
05 M25	19 1" ET	31 1" NPT	44 1" NPSM	57 1" BSPP	70 1" BSPT	81 PG11
06 M32	20 1 1/4" ET	32 1 1/4" NPT	45 1 1/4" NPSM	58 1 1/4" BSPP	71 1 1/4" BSPT	82 PG13.5
07 M40	21 1 1/2" ET	33 1 1/2" NPT	46 1 1/2" NPSM	59 1 1/2" BSPP	72 1 1/2" BSPT	83 PG16
08 M50	22 2" ET	34 2" NPT	47 2" NPSM	60 2" BSPP	73 2" BSPT	84 PG21
09 M63	23 2 1/2" ET	35 2 1/2" NPT	48 2 1/2" NPSM	61 2 1/2" BSPP	74 2 1/2" BSPT	85 PG29
10 M75	24 3" ET	36 3" NPT	49 3" NPSM	62 3" BSPP	75 3" BSPT	86 PG36

## Example

Digits 1 & 2	Digit 3	Digit 4	Digit 5	Digits 6 & 7	Digits 8 & 9
<b>DB</b>	<b>- U</b>	<b>- 1</b>	<b>- 0</b>	<b>- 29</b>	<b>- 04</b>
Insulated adaptor	Exd / e certified	Brass	Unplated	1/2" NPT (male)	M20 (female)

Always quote male thread first.

# Thread dimension chart

## ISO metric

### BS 3643 1.5mm pitch

Size	Major dia.	TPI
M12	11.97	16.93
M16	15.97	16.93
M20	19.97	16.93
M25	24.97	16.93
M32	31.97	16.93
M40	39.97	16.93
M50	49.97	16.93
M63	62.97	16.93
M75	74.97	16.93

### 2.0mm pitch

M80	79.97	12.70
M85	84.97	12.70
M90	89.97	12.70
M100	99.97	12.70
M110	109.97	12.70
M120	119.97	12.70

## NPT

### ANSI/ASME B1.20.1

Size	Pipe dia.	TPI
1/2"	21.34	14.00
3/4"	26.67	14.00
1"	33.40	11.50
1 1/4"	42.16	11.50
1 1/2"	48.26	11.50
2"	60.33	11.50
2 1/2"	73.03	8.00
3"	88.90	8.00
3 1/2"	101.60	8.00
4"	114.30	8.00

## PG

### DIN 40430

Size	Major dia.	TPI
PG7	12.50	20.00
PG9	15.20	18.00
PG11	18.60	18.00
PG13.5	20.40	18.00
PG16	22.50	18.00
PG21	28.30	16.00
PG29	37.00	16.00
PG36	47.00	16.00
PG42	54.00	16.00
PG48	59.30	16.00

## Alternate ISO pipe thread designations

UK	<b>BSP</b> Parallel or Taper BS2279 (BS21)
Europe	<b>G</b> (Parallel) <b>GK</b> (Taper) <b>R</b> (Parallel) <b>RK</b> (Taper)
Japan	<b>PF</b> (Parallel) JIS B 303
CIS	<b>K mpy</b> (Taper)

## BSP ISO pipe thread

### ISO R/7; UNI 6125

Size	Pipe Dia.	TPI
3/8"	16.66	19.00
1/2"	20.96	14.00
3/4"	26.44	14.00
1"	33.25	11.00
1 1/4"	41.91	11.00
1 1/2"	47.80	11.00
2"	59.61	11.00
2 1/2"	75.18	11.00
3"	87.88	11.00

## ET imperial conduit

### BS31

Size	Major dia.	TPI
5/8"	15.88	18.00
3/4"	19.05	16.00
1"	25.40	16.00
1 1/4"	31.75	16.00
1 1/2"	38.10	14.00
2"	50.80	14.00
2 1/2"	63.50	14.00
3"	76.20	14.00

## Thread dimension substitution chart

Metric	NPT (or NPS)	PG	BSP ISO Pipe	ET
M16	–	7, 9	–	5/8"
M20	1/2"	11, 13.5	1/2"	3/4"
M25	3/4"	16	3/4"	1"
M32	1"	21	1"	1 1/4"
M40	1 1/4"	29	1 1/4"	1 1/2"
M50	1 1/2"	36	1 1/2"	2"
M63	2"	42, 48	2"	2 1/2"
M75	2 1/2"	–	2 1/2"	3"
M90 x 2.0	3"	–	3"	–
M100 x 2.0	3 1/2"	–	–	–
M110 x 2.0	–	–	–	–
M120 x 2.0	–	–	–	–

# Part numbering system

## Codes

Page No.	Product	Digits 1 & 2
<b>Adaptors and reducers</b>		
14-17	<b>AD</b>	Adaptor
14-17	RD	Reducer
18	TA	Swivel - in-line male to female
18	TC	Swivel - in-line female to female
18	TD	Swivel - in-line male to male
18	TP	Swivel - 90° male to female
18	TQ	Swivel - 90° female to female
18	TR	Swivel - 90° male to male
19	AY	'Y' adaptor
20	AT	'T' adaptor
21	AR	90° adaptor
22	AM	Male to male adaptor
23	AF	Female to female adaptor
24-25	DB	Insulated adaptor
<b>Stopping Plugs</b>		
26-27	PD	Dome head plug
28	PA	Type A plug
28	PB	Type B plug
<b>Breather Drains</b>		
31	DP	Breather drain (Exe)
32	BD	Breather drain (Exde)
<b>Other products</b>		
34	UN	Union - male to female
34	UF	Union - female to female
35	AE	Earth lead adaptor

Certification	Digit 3
<b>U</b>	Exd I and IIC & Exe I and IIC
D	Exd I and IIC
E	Exe I and IIC
F	Industrial (marked product)

Material	Digit 4
<b>1</b>	Brass
2	Mild steel
3	Stainless steel
4	Glass filled nylon
5	Aluminium
6	Nylon 6
7	Red fibre

Plating	Digit 5
0	Unplated
<b>1</b>	Electroless nickel
2	Zinc
6	Chromated

## Example

Digits 1 & 2	Digit 3	Digit 4	Digit 5	Digits 6 & 7	Digits 8 & 9
<b>AD</b>	<b>- U</b>	<b>- 1</b>	<b>- 1</b>	<b>- 29</b>	<b>- 04</b>
Adaptor	Exd/e certified	Brass	Nickel-plated	1/2" NPT (male)	M20 (female)

Always quote male thread first.