Thread conversion products, breather drains and accessories

Global and North American certified for hazardous areas

EATON

Powering Business Worldwide

Global Termination Solutions

Eaton's Crouse-Hinds Division provides a termination solution for virtually every cable type used in hazardous and industrial environments – both onshore and offshore and above and below ground. Our adaptors, reducers, plugs, drains and additional products are used to support hazardous area installations throughout the world, enhancing safety and productivity in the most severe environmental conditions.

Our thread conversion products are designed for strict adherence to global specifications, meeting international approvals including ATEX, IECEx and CSA certifications. Our products are also suitable for industries made hazardous by the presence of dust.

Eaton's Crouse-Hinds Division thread conversion products are the safest solution for your hazardous area installation. In oil and gas, mining or power generation installations, our products are the reliable and safe way to terminate cable and conduit
installation.

Global Support & Manufacturing

Eaton's Crouse-Hinds Division manufactures in five continents and sells into more than 100 countries. We have dedicated sales support in every major location with local technical sales and engineering teams to support your immediate needs. As one of the largest oil and gas bulk electrical and instrument material suppliers, we can easily provide you a single source for all the components to complete your project on time and on budget.

Content

Product type

Product certification matrix

Product type

	IECEx	ATEX Gas & Dust	ATEX Mining (M2 only)	North America	Russia	India
Adaptors and reducers (metallic) 	■	■	■	■	■	■
'Y' adaptors 'T' adaptors 	■	■	■			
Stopping plugs (metallic) (check individual plugs for certification) 	■	■	■	■	■	■
Breather drains Exe 	■	■	■	■	■	
Breather drains Exde 	■	■	■			

Product selection guide

When selecting Ex certified accessories for use in hazardous areas, it is important to ensure that the product selected not only performs the task required (i.e. adapting the thread), but also maintains the overall integrity of the equipment into which it will be fitted.

To help with the selection of Redapt products, we have prepared the following as a guide. However, when selecting equipment for use in hazardous areas, the appropriate national or international standards or codes of practice must be considered.

Product approvals
Redapt products are manufactured to comply with the relevant standards for which they are designed. This means Redapt products meet with the exacting standards found within hazardous area environments. To assist in ease of use, the Redapt range of adaptors, reducers, stopping plugs and breather drains are approved Exd I and IIC and Exe I and IIC and tested to IP66 and IP68.

Equipment certificates, Ex thread adaptors and Ex stopping plugs
Redapt adaptors and reducers with metric female threads (Ex adaptors) and full range of stopping plugs (Ex stopping plugs) and breather drains are certified as apparatus and granted equipment certificates. This means that they can be fitted into Ex apparatus enclosures without further certification.

Component certificates
Redapt 'Y' and 'T' (twin inlet) adaptors are certified as components, and as such require further approval before they can be fitted to Ex apparatus enclosures. This applies to all products that have a 'U' at the end of the certificate number.

Worldwide compatibility
Keeping pace with the rapidly changing approvals and to ensure worldwide compatibility, Redapt has the following approvals: North American Ex approvals for both methods of hazardous location classification, Zones and Divisions in addition to our existing ATEX and IECEx approvals. Redapt can therefore offer adaptors and reducers Ex d and e I M2 and IIC Gb and/or Class I, Division 1, groups A, B, C, D, or Exe II, Class I, Division 2, etc.

Ingress protection
To ensure that the ingress protection of the equipment is maintained, the accessories need to satisfy the same level of protection as the equipment. The Redapt Exd I and IIC and Exe I and IIC range of adaptors, reducers, stopping plugs and breather drains are fitted with an integral O-ring seal and have been independently tested to IP66 and IP 68.

Material
To ensure the long-term integrity of the installation, care should be taken in selecting the product material; in particular, taking into account any corrosive atmosphere present and/or the potential for corrosion brought about by mating dissimilar metals. As standard we supply brass, which is suitable for most applications. In certain atmospheres, most notably ammonia, or to avoid bi-metallic corrosion and electrolytic action, it may be advisable to select an alternative material or request plated brass.

Thread fit, gauging and length
Parallel threads are gauged to a medium fit (6g, 6H) and are manufactured to provide a minimum of eight full threads, unless otherwise specified. Tapered threads are gauged and dimensioned to provide for five fully engaged threads, unless otherwise specified.

Part numbering system
When ordering or enquiring about adaptors and reducers, the male thread size should always be quoted first, followed by the female.

Dimensions
It is advisable to check the dimensions of the product to ensure that it can be installed into the equipment without fouling. Dimensions are given in the catalogue for regular metric size products; for other dimensions or information, please contact us. *Please note that dimensions are subject to change.*

Product marketing
To ensure clarity the relevant product information is marked on the product, and/or shown on the packaging and/or within the installation instructions.

European directives
Products approved within the ATEX directive will be shipped with detailed installation instructions. The CE mark is applied to the packaging and confirms that Redapt products meet with the essential health and safety requirements of the applicable European directives.

Redapt products are outside the scope of the Electromagnetic Compatibility Directive (EMC) as they are passive.

Product approvals

ATEX directive compliance

The ATEX directive (2014/34/UE) applies to equipment and protective systems intended for use in potentially explosive atmospheres within Europe. The directive outlines the conformity assessment procedures and product classification for Ex products.

Redapt complies with ATEX having had an EC type-examination carried out on our Ex product range and our production QA assessed and approved. This is in line with the requirements for Ex products for use in gas groups I and II.

North American approval

The Canadian Standards Association (CSA) develops standards, tests and certifies products for use in Canada and internationally. CSA international is recognised by the U.S. Occupational Safety and Health Administration (OSHA) under the Nationally Recognised Testing Laboratory (NRTL) scheme and are able to test and certify products for use in hazardous locations within the U.S.A. as well as Canada. Traditionally, Ex products used within North America have been designed and tested for compliance within the 'class and division system'.

Redapt products have been assessed and certified for use throughout North America in both the 'class and division system' and the 'zone system'.

IEC Ex approval

The International Electrotechnical Commission (IEC) has developed the IECEx international certification scheme in an attempt to harmonise national standards used throughout the world with the aim of producing an approval that is recognized globally. The IECEx scheme is based on the 3 zone concept of area classification.

Redapt products have been approved under the IECEx scheme and are compliant with the requirements of the scheme via IEC 60079-x.

TR-UNION approval

The EX EAC certificate and the regulation for equipment used in potentially explosive atmospheres, therefore classified explosion proof, is based on the Technical Regulations 012/2011 of the Eurasian Customs Union (TR CU 012/2011). The Custom Union Technical Regulations regulate the quality of the product on the markets of Russia, Belarus, Kazakhstan and soon of Armenia and Kyrgyzstan. The certificate resulting from the compliance with the provisions of the TR CU 012/2011 is the EX EAC certificate, comparable to European ATEX.

Indian Hazardous Location system

Requirement under Rule 102 of the Petroleum Rules, 2002 lays down that no electrical wiring shall be installed and no electrical apparatus shall be used in petroleum refinery, storage installation, storage shed, service station or any other place where petroleum is refined, blended, stored, loaded/filled or unloaded unless it is approved by the Chief Controller of Explosives (CCoE certificate). It is in this context that electrical equipment which has to be used in a hazardous area covered under Petroleum Rules, 2002 shall require approval from the Chief Controller of Explosives.

Notes

Equipment certificates, Ex thread adaptors and Ex stopping plugs

Redapt adaptors and reducers with metric female threads (Ex adaptors) and full range of stopping plugs (Ex stopping plugs) and breather drains are certified as apparatus and granted equipment certificates. This means that they can be fitted to Ex apparatus enclosures without further certification (see installation instructions).

Component certificates

Products certified as components require further approval before they can be fitted to Ex apparatus enclosures. A certificate number ending with the 'U' suffix denotes a component certificate (see installation instructions).

Aluminium products

Aluminium versions of AD-U, RD-U, PD-U, PA-D, PB-D Series and aluminium versions of DP-E Series are not suitable for Group I applications.

Temperature classification

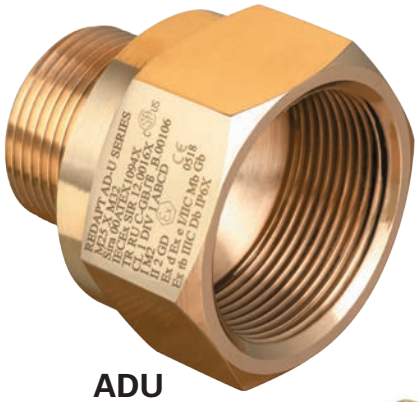
Redapt products do not carry a temperature class or 'T' rating as they are passive and do not generate any heat.

Redapt ADU and RDU metallic (Exde) adapters and reducers

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 4X, 6P; IP66/IP67/IP68

Features:

- Used to change size/threadform of connection device
- Maintains Ex certification while matching threadforms
- International Ex approvals
- IP66, IP68, CSA enclosure type (NEMA) 4X, 6P
- Various threadforms/materials available



ADU

RDU

Certifications and compliances:

Code of protection categories:

- ATEX: I M2, II 2 GD, Ex d I/IIC Mb Gb, Ex e I/IIC Mb Gb, Ex tb IIIC Db, IP6X
- IECEx: Ex d I/IIC, Mb/Gb, Ex e I/IIC, Mb/Gb, Ex tb IIIC Db, IP6X
- EAC: ExdeIU, ExdeIICU, IP66/67/68
- CSA: Ex de IIC IP66/67/68; Class I, Divisions 1 & 2, Groups A, B, C, D; Class II, Groups E, F, G; Class III; enclosure type 4X/6P

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
- CSA: C22.2 No. 30-M1986 (R2012), CAN/CSA 60079-0-11, CAN/CSA 60079-1-11, CAN/CSA 60079-7-12, CAN/CSA 60079-31:12, UL1203-5th Edition

Certificate details:

- ATEX: ITS16 ATEX101340U
- IECEx: IECEx ITS 16.0015U
- EAC: TR RU C-GB.GB06.B.00106
- CSA: 1248014 (LR106084)
- CCoE: P362565/1

Standard materials:

- Brass CZ121
- 316 stainless steel
- Aluminum
- Mild steel

Plating options:

- Electroless nickel
- Zinc
- Others on application

Temperature ratings:

Temperature will depend on the type of o-ring used:

- None: -50°C to +180°C
- Nitrile: -20°C to +80°C (supplied as standard)
- EPDM: -30°C to +125°C
- Neoprene: -20°C to +100°C
- Viton: -5°C to +180°C
- Silicone: -30°C to +180°C
- Fluorosilicone: -50°C to +150°C
- The maximum temperature is limited to +150°C for Group I applications

Dimensions (in inches):

Metric	Bore	NPT	Bore	ISO pipe	Bore	ET	Bore	PG	Bore
M16	0.39	–	–	3/8"	0.39	5/8"	0.39	PG7	0.31
M20	0.55	1/2"	0.59	1/2"	0.59	3/4"	0.55	PG9	0.39
M25	0.71	3/4"	0.75	3/4"	0.75	1"	0.71	PG11	0.53
M32	0.94	1"	0.98	1"	0.98	1 1/4"	0.94	PG13.5	0.55
M40	1.26	1 1/4"	1.26	1 1/4"	1.26	1 1/2"	1.26	PG16	0.63
M50	1.61	1 1/2"	1.50	1 1/2"	1.50	2"	1.61	PG21	0.83
M63	2.09	2"	1.93	2"	1.93	2 1/2"	2.09	PG29	1.14
M75	2.52	2 1/2"	2.36	2 1/2"	2.36	3"	2.52	PG36	1.50
M80 x 2.0	2.72	3"	2.95	3"	2.95	–	–	PG42	1.77
M85 x 2.0	2.87	3 1/2"	3.46	3 1/2"	3.46	–	–	PG48	1.97
M90 x 2.0	3.07	4"	3.94	4"	3.94	–	–	–	–

Sizes M12 to M120 available.

Redapt ADU and RDU metallic (Exde) adapters and reducers

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 4X, 6P; IP66/IP67/IP68

Ordering information:

Part number example

ADU112904

For additional assistance with part number selection, please see adaptors and reducers selection guide on page 29.

AD U 1 1 29 04

Type

AD	Adapter
RD	Reducer

Certification

U	Exd I and IIC & Exe I and IIC
D	Exd I and IIC
E	Exe I and IIC
F	Industrial (marked product)

Material

1	Brass
2	Mild steel
3	Stainless steel
5	Aluminum
6	Nylon 6
7	Red fiber

Plating

0	Unplated
1	Electroless nickel
2	Zinc
6	Chromatized

Digits 6 and 7 represent male thread

Digits 8 and 9 represent female thread

Thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75
11	M80 x 2.0
12	M85 x 2.0
13	M90 x 2.0
14	M100 x 2.0
15	M110 x 2.0
BZ	M120 x 2.0
MT	Special

ET	Thread
17	5/8" ET
18	¾" ET
19	1" ET
20	1¼" ET
21	1½" ET
22	2" ET
23	2½" ET
24	3" ET
ET	Special

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT
36	3" NPT
37	3½" NPT
38	4" NPT
NT	Special

NPSM	Thread
42	½" NPSM
43	¾" NPSM
44	1" NPSM
45	1¼" NPSM
46	1½" NPSM
47	2" NPSM
48	2½" NPSM
49	3" NPSM
50	3½" NPSM
51	4" NPSM
NS	Special

ISO pipe parallel	Thread
55	½" BSPP
56	¾" BSPP
57	1" BSPP
58	1¼" BSPP
59	1½" BSPP
60	2" BSPP
61	2½" BSPP
62	3" BSPP
63	3½" BSPP
64	4" BSPP
BP	Special

ISO pipe taper	Thread
68	½" BSPT
69	¾" BSPT
70	1" BSPT
71	1¼" BSPT
72	1½" BSPT
73	2" BSPT
74	2½" BSPT
75	3" BSPT
76	3½" BSPT
77	4" BSPT
BT	Special

PG	Thread
79	PG7
80	PG9
81	PG11
82	PG13.5
83	PG16
84	PG21
85	PG29
86	PG36
87	PG42
88	PG48
PG	Special

Redapt AYU "Y" (Exde) adapters

IECEx/ATEX
IP66/IP68

Features:

- Provides extra means of connection where space is limited
- Used to change size/threadform of connection device
- Maintains Ex certification while matching threadforms
- International Ex approvals
- IP66, IP68
- Available in brass, stainless steel, mild steel and aluminum

Certifications and compliances:

Code of protection categories:

- ATEX: II 2 GD / I M2, Ex db I Mb, Ex eb I Mb (not aluminum), Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db IP66
- IECEx: Ex db I Mb, Ex eb I Mb (not aluminum), Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db IP6X

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: ITS16 ATEX101340U
- IECEx: IECEx ITS 16.0015U

Standard materials:

- Brass CZ121
- 316 stainless steel
- Mild steel
- Aluminum

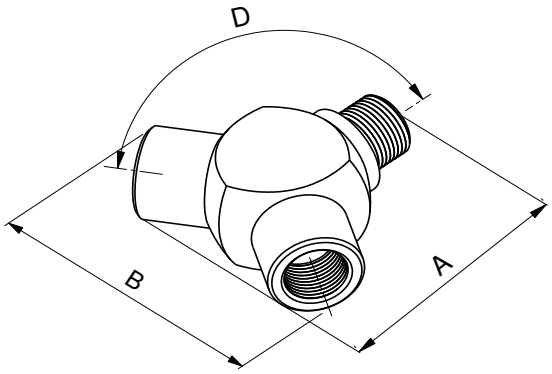
Plating options:

- Electroless nickel
- Zinc
- Others on application

Temperature rating:

- -60°C to +200°C

Dimensions (in inches):



Male size	Female size	A max.	B max.	Angle between entries (D)
M16	M16	2.56	2.95	120°
M20	M20	2.56	2.95	120°
M25	M25	2.64	3.07	120°
M32	M32	2.76	3.19	120°
M40	M40	3.50	4.02	120°
M50	M50	4.09	4.72	120°
M63	M63	5.16	5.94	120°
M75	M75	6.02	6.97	120°
3/8" NPT	3/8" NPT	2.56	2.95	120°
1/2" NPT	1/2" NPT	2.56	2.95	120°
3/4" NPT	3/4" NPT	2.64	3.07	120°
1" NPT	1" NPT	3.07	3.54	120°
1 1/4" NPT	1 1/4" NPT	3.50	4.02	120°
1 1/2" NPT	1 1/2" NPT	4.09	4.72	120°
2" NPT	2" NPT	5.16	5.94	120°
2 1/2" NPT	2 1/2" NPT	6.02	6.97	120°

Redapt AYU "Y" (Exde) adapters

IECEx/ATEX
IP66/IP68

Ordering information:

Part number example
AYU110304

AY U 1 1 03 04

Certification

U	Exd I and IIC & Exe I and IIC
D	Exd I and IIC
E	Exe I and IIC
F	Industrial (marked product)

Material

1	Brass
2	Mild steel
3	Stainless steel
5	Aluminum

Plating

0	Unplated
1	Electroless nickel
2	Zinc

Digits 6 and 7 represent male thread

Digits 8 and 9 represent female thread

Thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT

Redapt ATU "T" (Exde) adapters

IECEx/ATEX
IP66/IP68

Features:

- Provides an opportunity for two cable entries using one equipment entry
- Can be used to change size/threadform of connection device
- Maintains Ex certification while matching threadforms
- International Ex approvals
- IP66, IP68
- Available in brass, stainless steel, mild steel and aluminum

Certifications and compliances:

Code of protection categories:

- ATEX: II 2 GD / I M2, Ex db I Mb, Ex eb I Mb (not aluminum), Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db IP66
- IECEx: Ex db I Mb, Ex eb I Mb (not aluminum), Ex db IIC Gb, Ex eb IIC Gb, Ex tb IIIC Db IP6X

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: ITS16 ATEX101340U
- IECEx: IECEx ITS 16.0015U

Standard materials:

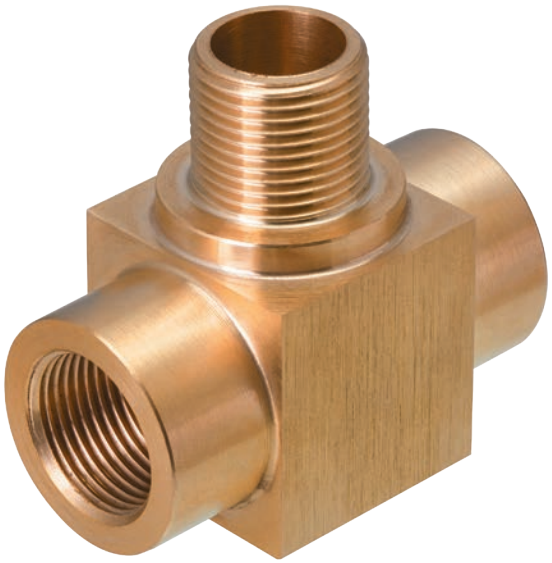
- Brass CZ121
- 316 stainless steel
- Mild steel
- Aluminum

Plating options:

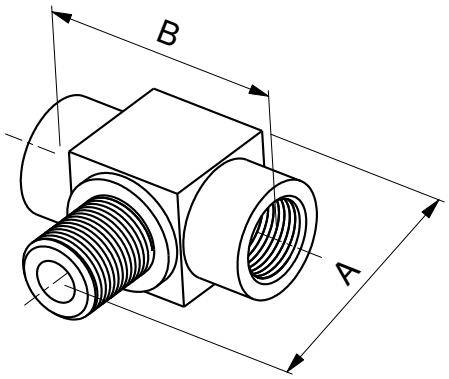
- Electroless nickel
- Zinc
- Others on application

Temperature rating:

- -60°C to +200°C



Dimensions (in inches):



Male size	Female size	A max.	B max.
M16	M16 to M20	1.93	2.36
M20	M16 to M25	2.17	2.56
M25	M16 to M32	2.52	2.83
M32	M16 to M40	2.87	3.15
M40	M16 to M50	3.31	3.54
M50	M16 to M63	3.91	4.13
M63	M16 to M75	4.61	4.72
M75	M16 to M75	4.61	4.72
3/8" NPT	3/8" to 1/2" NPT	1.95	2.36
1/2" NPT	3/8" to 3/4" NPT	2.37	2.56
3/4" NPT	3/8" to 1" NPT	2.74	2.83
1" NPT	3/8" to 1 1/4" NPT	3.32	3.19
1 1/4" NPT	3/8" to 1 1/2" NPT	3.74	3.54
1 1/2" NPT	3/8" to 2" NPT	4.37	4.13
2" NPT	3/8" to 2 1/2" NPT	5.09	4.72
2 1/2" NPT	3/8" to 2 1/2" NPT	5.61	4.72

Redapt ATU "T" (Exde) adapters

IECEx/ATEX
IP66/IP68

Ordering information:

Part number example
ATU110304

AT U 1 1 03 04

Certification

U	Exd I and IIC & Exe I and IIC
D	Exd I and IIC
E	Exe I and IIC
F	Industrial (marked product)

Material

1	Brass
2	Mild steel
3	Stainless steel
5	Aluminum

Plating

0	Unplated
1	Electroless nickel
2	Zinc

Digits 6 and 7 represent male thread

Digits 8 and 9 represent female thread

Thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT

Redapt PDU metallic dome head (Exde) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 4X, 6P; IP66/IP67/IP68

Features:

- International Ex approvals
- IP66, IP68, CSA enclosure type (NEMA) 4X, 6P
- Available in brass, stainless steel, mild steel and aluminum
- Various threadforms available

Certifications and compliances:

Code of protection categories:

- ATEX: I M2, II 2 GD, Ex d I/IIC Mb Gb, Ex e I/IIC Mb Gb, Ex tb IIIC Db, IP6X
- IECEx: Ex d I/IIC Mb/Gb, Ex e I/IIC Mb/Gb, Ex tb IIIC Db IP6X
- EAC: ExdeIU, ExdeIICU, IP66/67/68
- CSA: Ex de IIC IP66/67/68; Class I, Divisions 1 & 2, Groups A, B, C, D; Class II, Groups E, F, G; Class III; enclosure type 4X/6P

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
- CSA: C22.2 No. 30-M1986 (R2012), CAN/CSA 60079-0-11, CAN/CSA 60079-1-11, CAN/CSA 60079-7-12, CAN/CSA 60079-31:12, UL1203-5th Edition

Certificate details:

- ATEX: ITS16 ATEX101335X
- IECEx: IECEx ITS 16.0012X
- EAC: TR RU C-GB.GB06.B.00106
- CSA: 1248014 (LR106084)
- CCoE: P362565/1

Standard materials:

- Brass CZ121
- 316 stainless steel
- Aluminum
- Mild steel

Plating options:

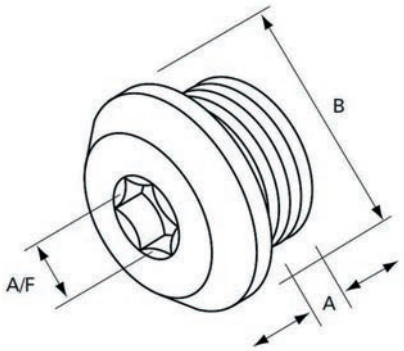
- Electroless nickel
- Zinc
- Others on application

Temperature ratings:

Temperature will depend on the type of o-ring used:

- None: -50°C to +180°C
- Nitrile: -20°C to +80°C (supplied as standard)
- EPDM: -30°C to +125°C
- Neoprene: -20°C to +100°C
- Viton: -5°C to +180°C
- Silicone: -30°C to +180°C
- Fluorosilicone: -50°C to +150°C
- The maximum temperature is limited to +150°C for Group I applications

Dimensions (in inches):



Size	Hex (Allen) key A/F	Thread length (A)	Diameter (B)
M16	0.39	0.59	0.87
M20	0.39	0.59	1.06
M25	0.39	0.59	1.25
M32	0.39	0.59	1.57
M40	0.39	0.59	1.88
M50	0.39	0.59	2.25
M63	0.55	0.59	2.75
M75	0.55	0.59	3.25

Redapt PDU metallic dome head (Exde) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 4X, 6P; IP66/IP67/IP68

Ordering information:

Part number example
PDU110300

PD U 1 1 03 00

Certification

U	Exd I and IIC & Exe I and IIC
D	Exd I and IIC
E	Exe I and IIC
F	Industrial (marked product)

Material

1	Brass
2	Mild steel
3	Stainless steel
5	Aluminum

Plating

0	Unplated
1	Electroless nickel
2	Zinc

Default digit

00	Default digit

Note: No female thread applicable.

Male thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75

ET	Thread
17	5/8" ET
18	¾" ET
19	1" ET
20	1¼" ET
21	1½" ET
22	2" ET
23	2½" ET
24	3" ET
ET	Special

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT
36	3" NPT
37	3½" NPT
38	4" NPT
NT	Special

NPSM	Thread
42	½" NPSM
43	¾" NPSM
44	1" NPSM
45	1¼" NPSM
46	1½" NPSM
47	2" NPSM
48	2½" NPSM
49	3" NPSM
50	3½" NPSM
51	4" NPSM
NS	Special

ISO pipe parallel	Thread
55	½" BSPP
56	¾" BSPP
57	1" BSPP
58	1¼" BSPP
59	1½" BSPP
60	2" BSPP
61	2½" BSPP
62	3" BSPP
63	3½" BSPP
64	4" BSPP
BP	Special

ISO pipe taper	Thread
68	½" BSPT
69	¾" BSPT
70	1" BSPT
71	1¼" BSPT
72	1½" BSPT
73	2" BSPT
74	2½" BSPT
75	3" BSPT
76	3½" BSPT
77	4" BSPT
BT	Special

PG	Thread
79	PG7
80	PG9
81	PG11
82	PG13.5
83	PG16
84	PG21
85	PG29
86	PG36
87	PG42
88	PG48
PG	Special

Redapt PAU and PBU Type A and Type B (Ex d, Ex e) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 3; IP54

Features:

- International Ex approvals
- IP54, CSA enclosure type (NEMA) 3
- Available in brass, stainless steel, mild steel and aluminum
- Various threadforms available

Certifications and compliances:

Code of protection categories:

- ATEX: I M2, II 2 GD, Ex d I/IIC Mb/Gb, Ex e I/IIC Mb/Gb, Ex tb IIIC Db IP66
- IECEx: Ex db I/IIC Mb/Gb, Ex eb I/IIC Mb/Gb, Ex tb IIIC Db IP66
- EAC: ExdIICU
- CSA: Ex d IIC IP54, Class I, Divisions 1 & 2, Groups A, B, C, D; Class II, Groups E, F, G; Class III; enclosure type 3

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
- CSA: C22.2 No. 30-M1986 (R2012), CAN/CSA 60079-0-11, CAN/CSA 60079-1-11, CAN/CSA 60079-31:12, UL1203-5th Edition

Certificate details:

- ATEX: ITS16 ATEX101335X
- IECEx: IECEx ITS 16.0012X
- EAC: TC RU C-GB.MI-O62.B.06226
- INMETRO: NCC 18.0133 X
- CSA: 1248014 (LR106084)

Standard materials:

- Brass CZ121
- 316 stainless steel
- Aluminum
- Mild steel

Plating options:

- Electroless nickel
- Zinc
- Others on application

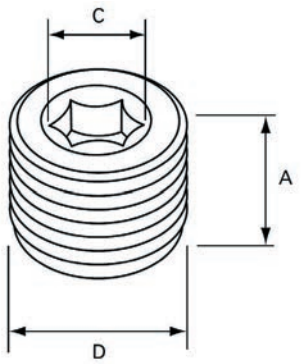
Temperature rating:

- -50°C to +180°C

PBU

PAU

Dimensions (in inches):



Size	Overall length (A)	Hex recess (C)	Diameter (D)
M16	0.59	0.31	0.64
M20	0.59	0.39	0.80
M25	0.59	0.39	1.00
M32	0.59	0.39	1.27
M40	0.59	0.39	1.58
M50	0.59	0.39	1.98
M63	0.59	0.55	2.48
M75	0.59	0.55	2.95

Redapt PAU and PBU Type A and Type B (Ex d, Ex e) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
IECEx/ATEX
NEMA 3; IP54

Ordering information:

Part number example
PAU110300

PA **U** **1** **1** **03** **00**

Type	
PA	Type A externally accessible
PB	Type B tamper-proof

Certification	
U	Ex d I and IIC, Ex e I and IIC

Material	
1	Brass
2	Mild steel
3	Stainless steel
5	Aluminum

Plating	
0	Unplated
1	Electroless nickel
2	Zinc

Default digit	
00	Default digit

Note: No female thread applicable.

Male thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75

ET	Thread
17	5/8" ET
18	¾" ET
19	1" ET
20	1¼" ET
21	1½" ET
22	2" ET
23	2½" ET
24	3" ET
ET	Special

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT
36	3" NPT
37	3½" NPT
38	4" NPT
NT	Special

NPSM	Thread
42	½" NPSM
43	¾" NPSM
44	1" NPSM
45	1¼" NPSM
46	1½" NPSM
47	2" NPSM
48	2½" NPSM
49	3" NPSM
50	3½" NPSM
51	4" NPSM
NS	Special

ISO pipe parallel	Thread
55	½" BSPP
56	¾" BSPP
57	1" BSPP
58	1¼" BSPP
59	1½" BSPP
60	2" BSPP
61	2½" BSPP
62	3" BSPP
63	3½" BSPP
64	4" BSPP
BP	Special

ISO pipe taper	Thread
68	½" BSPT
69	¾" BSPT
70	1" BSPT
71	1¼" BSPT
72	1½" BSPT
73	2" BSPT
74	2½" BSPT
75	3" BSPT
76	3½" BSPT
77	4" BSPT
BT	Special

PG	Thread
79	PG7
80	PG9
81	PG11
82	PG13.5
83	PG16
84	PG21
85	PG29
86	PG36
87	PG42
88	PG48
PG	Special

Redapt PHE hex head (Exe) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
ATEX
NEMA 3; IP54

Features:

- International Ex approvals
- IP6X, CSA enclosure type (NEMA) 3
- Available in brass, stainless steel and aluminum
- Various threadforms available

Certifications and compliances:

Code of protection categories:

- ATEX: II 2GD, Ex e IIC Gb, Ex tb IIIC Db, IP6X
- EAC: ExeIICU
- CSA: Ex d IIC IP54, Class I, Divisions 1 & 2, Groups A, B, C, D; Class II, Groups E, F, G; Class III; enclosure type 3

Compliance standards:

- ATEX: EN 60079-0, EN 60079-7, EN 60079-31
- CSA: C22.2 No. 30-M1986 (R2012), CAN/CSA 60079-0-11, CAN/CSA 60079-31:12, UL1203-5th Edition

Certificate details:

- ATEX: ITS16 ATEX101335X
- EAC: TR RU C-GB.GB06.B.00106
- CSA: 1248014 (LR106084)

Standard materials:

- Brass CZ121
- 316 stainless steel
- Aluminum

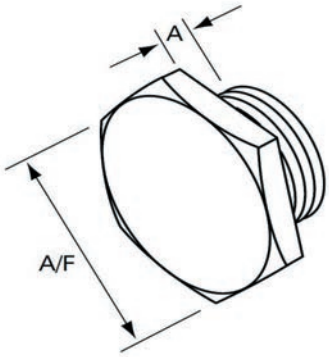
Plating options:

- Electroless nickel
- Zinc
- Chromatized
- Others on application

Temperature rating:

- -50°C to +180°C

Dimensions (in inches):



Size	Minimum A/F	Minimum thread length (A)
M16	0.79	0.47
M20	0.94	0.47
M25	1.14	0.47
M32	1.42	0.47
M40	1.73	0.47
M50	2.13	0.47
M63	2.64	0.47
M75	3.11	0.47

Redapt PHE hex head (Exe) stopping plugs

Cl. I, Div. 1 & 2, Groups A, B, C, D
Cl. II, Groups E, F, G
Cl. III
ATEX
NEMA 3; IP54

Ordering information:

Part number example
PHE110300

PH **E** **1** **1** **03** **00**

Certification

E	Exe I and IIC

Material

1	Brass
3	Stainless steel
5	Aluminum

Plating

0	Unplated
1	Electroless nickel
2	Zinc
6	Chromatized

Default digit

00	Default digit

Note: No female thread applicable.

Male thread type

Metric	Thread
03	M16
04	M20
05	M25
06	M32
07	M40
08	M50
09	M63
10	M75
11	M80 x 2.0
12	M85 x 2.0
13	M90 x 2.0
14	M100 x 2.0
15	M110 x 2.0
BZ	M120 x 2.0
MT	Special

ET	Thread
17	5/8" ET
18	¾" ET
19	1" ET
20	1¼" ET
21	1½" ET
22	2" ET
23	2½" ET
24	3" ET
ET	Special

NPT	Thread
29	½" NPT
30	¾" NPT
31	1" NPT
32	1¼" NPT
33	1½" NPT
34	2" NPT
35	2½" NPT
36	3" NPT
37	3½" NPT
38	4" NPT
NT	Special

NPSM	Thread
42	½" NPSM
43	¾" NPSM
44	1" NPSM
45	1¼" NPSM
46	1½" NPSM
47	2" NPSM
48	2½" NPSM
49	3" NPSM
50	3½" NPSM
51	4" NPSM
NS	Special

ISO pipe parallel	Thread
55	½" BSPP
56	¾" BSPP
57	1" BSPP
58	1¼" BSPP
59	1½" BSPP
60	2" BSPP
61	2½" BSPP
62	3" BSPP
63	3½" BSPP
64	4" BSPP
BP	Special

ISO pipe taper	Thread
68	½" BSPT
69	¾" BSPT
70	1" BSPT
71	1¼" BSPT
72	1½" BSPT
73	2" BSPT
74	2½" BSPT
75	3" BSPT
76	3½" BSPT
77	4" BSPT
BT	Special

PG	Thread
79	PG7
80	PG9
81	PG11
82	PG13.5
83	PG16
84	PG21
85	PG29
86	PG36
87	PG42
88	PG48
PG	Special

Redapt DPE increased safety (Exe) breather/drains

Cl. I, Zone 1, Ex e II
IECEx/ATEX
NEMA 4X
IP66

Features:

- International Ex approvals
- IP66, CSA enclosure type (NEMA) 4X
- Available in two thread lengths: 10mm two drain holes or 15mm three drain holes
- Available in brass, stainless steel, aluminum and glass-filled nylon
- Metric and NPT threads available

Certifications and compliances:

Code of protection categories:

- ATEX: I M2/II 2 GD, Ex e I/II Mb Gb, Ex tb IIIC Db IP66; nylon: II2GD, Ex e IIGb Ex tb IIIC Db IP66
- IECEx: Ex e I/IIC Mb/Gb, Ex tb IIIC Db IP66; nylon: Ex e IIC Gb, Ex tb Db IP66
- EAC: ExeIU nylon, ExeIIU IP66
- CSA: Class I, Zone 1, Ex e II IP66, CSA enclosure type 4X (NEMA 4X)

Compliance standards:

- ATEX: EN 60079-0, EN 60079-7, EN 60079-31
- IECEx: IEC 60079-0, IEC 60079-7, IEC 60079-31
- CSA: CSA standard C22.2 No. 0-M, CSA standard C22.2 No. 0.5, CSA standard C22.2 No. 94, CAN/CSA E79-7-95, UL2279

Certificate details:

- ATEX: ITS16 ATEX101338X
- IECEx: IECEx ITS 16.0014X
- EAC: TR RU C-GB.GB06.B.00106
- CSA: 185887-2500003408 (LR106084)

Standard materials:

- Brass CZ121
- 316 stainless steel
- Aluminum
- Glass-filled nylon

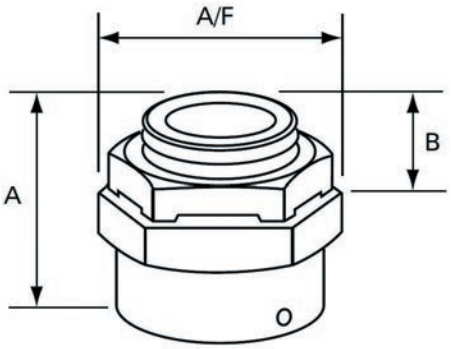
Plating options:

- Electroless nickel
- Zinc
- Others on application

Temperature ratings:

- Metallic body dependent on filter and seal material
- Nylon body: -50°C to +125°C, unless limited by filter material
- HDPE filter: -50°C to 85°C
- Metallic filter dependent on body and interface material
- Nitrile: -30°C to +100°C (supplied as standard)
- EPDM: -50°C to +125°C
- Neoprene: -40°C to +100°C
- Viton: -20°C to +180°C
- Silicone: -50°C to +180°C
- Fluorosilicone: -70°C to +150°C

Dimensions (in inches):



Size	A/F	Minimum overall length (A)	Minimum thread length (B)
M20	1.13	0.91	0.39
M25	1.37	0.91	0.39
M32	1.63	0.91	0.39
½" NPT	1.13	1.10	0.59
¾" NPT	1.37	1.10	0.59
1" NPT	1.63	1.10	0.59

Redapt DPE increased safety (Exe) breather/drains

Cl. I, Zone 1, Ex e II
IECEx/ATEX
NEMA 4X
IP66

Ordering information:

Part number example
DPE3029S3

DP E 3 0 29 S3

Certification

E	Exe I and IIC

Material

1	Brass
3	Stainless steel
4	Glass-filled nylon Ⓐ

Plating

0	Unplated
1	Electroless nickel
2	Zinc

Thread type

04	M20
05	M25
06	M32
29	½" NPT
30	¾" NPT
31	1" NPT

Thread length

S1	10mm, 2 holes, with castellated locknut
S2	10mm, 2 holes, without castellated locknut
S3	15mm, 3 holes, with castellated locknut
S4	15mm, 3 holes, without castellated locknut

Note: NPT threaded breather/drains are only available in S3 and S4 options.

Ⓐ Glass-filled nylon version is only available in S3 and S4 options, and is supplied complete with a brass castellated locknut.

Redapt BDU flameproof (Exde) breather/drains

IECEx/ATEX
IP66

Features:

- Provides method of draining moisture within enclosures
- Allows air within enclosure to breathe with surrounding atmosphere
- International Ex approvals
- IP66
- Available in brass and stainless steel
- Metric and NPT threads available

Certifications and compliances:

Code of protection categories:

- ATEX: I M2, II 2 GD, Ex e I/IIC Mb Gb, Ex d I/IIC Mb Gb, Ex tb IIIC Db IP6X
- IECEx: Ex e I/IIC Mb Gb, Ex d I/IIC Mb Gb, Ex tb IIIC Db IP6X

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: ITS16 ATEX101338X
- IECEx: IECEx ITS 16.0014X

Standard materials:

- Brass CZ121
- 316 stainless steel

Plating options:

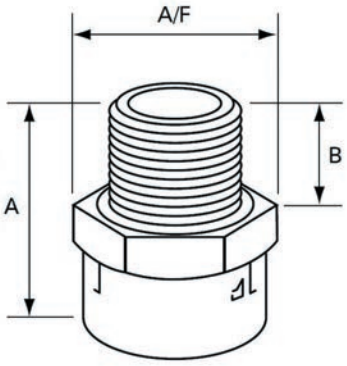
- Electroless nickel
- Zinc
- Others on application

Temperature ratings:

Temperature range dependent on o-ring used (supplied on metric only):

- Nitrile: -20°C to +80°C
- EPDM: -30°C to +125°C
- Neoprene: -20°C to +100°C
- Viton: -5°C to +150°C
- Silicone: -30°C to +150°C (supplied as standard)
- Fluorosilicone: -50°C to +150°C

Dimensions (in inches):



Size	Hex A/F	Overall length (A)	Male thread length (B)
M20	1.06	1.22	0.63
M25	1.25	1.22	0.63
½" NPT	1.06	1.38	0.79
¾" NPT	1.25	1.38	0.79

Ordering information:

Part number example

BDU3004D1

BD U 3 0 04 D1

Certification

U	Exd I and IIC & Exe I and IIC

Material

1	Brass
3	Stainless steel

Plating

0	Unplated
1	Electroless nickel
2	Zinc

Thread type

04	M20
05	M25
29	½" NPT
30	¾" NPT

O-ring material

D0	No o-ring
D1	Silicone
D2	Fluorosilicone
D3	Viton
D4	EPDM
D5	Neoprene
D6	Nitrile

Accessories

Ordering information:

Green composite washers

NPT thread size	D	Thickness (E)	Cat. #
1/4"	18.0	1.5	**CAP239014**
3/8"	22.0	1.5	**CAP239038**
1/2"	31.0	1.5	**CAP239012**
3/4"	35.0	1.5	**CAP239034**
1"	43.0	1.5	**CAP239010**
1 1/4"	59.0	1.5	**CAP239114**
1 1/2"	69.0	1.5	**CAP239112**
2"	79.0	2.0	**CAP239020**
2 1/2"	94.0	2.0	**CAP239212**
3"	110.0	2.0	**CAP239300**
3 1/2"	119.0	2.0	**CAP239312**
4"	130.0	2.0	**CAP239414**

All dimensions in millimeters.

Temperature range: -60°C to +140°C.

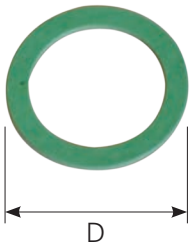
Outer diameter dimensions may be subject to change.

Metric thread size	D	Thickness (E)	Cat. #
10	15.0	1.2	**CAP221045**
12	18.0	1.2	**CAP221245**
16	22.0	1.2	**CAP221645**
20	27.0	1.2	**CAP222045**
25	35.0	1.5	**CAP222545**
32	43.0	1.5	**CAP223245**
40	55.0	1.5	**CAP224045**
50	69.0	1.5	**CAP225045**
63	82.0	2.0	**CAP226345**
75	94.0	2.0	**CAP227545**
90	110.0	2.0	**CAP229045**
110	130.0	2.0	**CAP221145**

All dimensions in millimeters.

Temperature range: -60°C to +140°C.

Outer diameter dimensions may be subject to change.



Locknuts

NPT thread size	Cat. # Nickel-plated brass	Cat. # 316L stainless steel
1/2"	**CAP280124**	**CAP280129**
3/4"	**CAP280134**	**CAP280139**
1"	**CAP280144**	**CAP280149**
1 1/4"	**CAP280154**	**CAP280159**
1 1/2"	**CAP280164**	**CAP280169**
2"	**CAP280174**	**CAP280179**
2 1/2"	**CAP280184**	**CAP280189**
3"	**CAP280194**	**CAP280199**
3 1/2"	**CAP280204**	**CAP280209**
4"	**CAP280214**	**CAP280219**

All dimensions in millimeters.

Metric thread size	Cat. # Nickel-plated brass	Cat. # 316L stainless steel
16	**CAP221694**	**CAP221699**
20	**CAP222094**	**CAP222099**
25	**CAP222594**	**CAP222599**
32	**CAP223294**	**CAP223299**
40	**CAP224094**	**CAP224099**
50	**CAP225094**	**CAP225099**
63	**CAP226394**	**CAP226399**
75	**CAP227594**	**CAP227599**
90	**CAP229094**	**CAP229099**
110	**CAP221104**	**CAP221109**

All dimensions in millimeters.

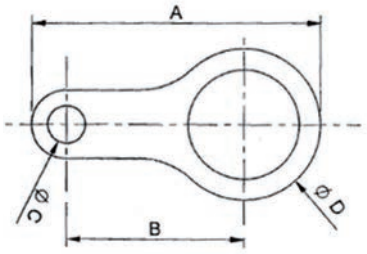
Earth tags

NPT thread size	A	B	C	D	Cat. # Nickel-plated brass	Cat. # 316L stainless steel
1/2"	61.5	33.0	10.5	28.6	**CAP567064**	**CAP567069**
3/4"	73.0	36.0	12.2	34.0	**CAP567084**	**CAP567089**
1"	73.0	41.0	12.2	42.0	**CAP567104**	**CAP567109**
1 1/4"	86.5	44.5	13.5	54.0	**CAP567134**	**CAP567139**
1 1/2"	111.5	58.0	13.5	67.0	**CAP567154**	**CAP567159**
2"	125.5	67.0	13.5	77.0	**CAP567174**	**CAP567179**
2 1/2"	137.5	73.0	13.5	89.0	**CAP567194**	**CAP567199**
3"	167.0	93.0	13.5	109.5	**CAP567214**	**CAP567219**
3 1/2"	188.0	107.3	13.5	121.5	**CAP567224**	**CAP567229**
4"	214.0	125.0	13.5	138.0	**CAP567244**	**CAP567249**

All dimensions in millimeters.

Metric thread size	A	B	C	D	Cat. # Nickel-plated brass	Cat. # 316L stainless steel
16	48.5	30.0	6.5	24.5	**CAP567034**	**CAP567039**
20	53.8	33.0	7.0	28.6	**CAP567054**	**CAP567059**
25	61.5	36.0	10.5	34.0	**CAP567074**	**CAP567079**
32	73.0	41.0	12.2	42.0	**CAP567094**	**CAP567099**
40	86.5	44.5	13.5	54.0	**CAP567124**	**CAP567129**
50	111.5	58.0	13.5	67.0	**CAP567154**	**CAP567159**
63	125.5	67.0	13.5	77.0	**CAP567184**	**CAP567189**
75	137.5	73.0	13.5	89.0	**CAP567194**	**CAP567199**
90	167.0	93.0	13.5	109.5	**CAP567214**	**CAP567219**
110	214.0	125.0	13.5	138.0	**CAP567234**	**CAP567239**

All dimensions in millimeters.



Accessories

Ordering information (continued):

Serrated washers

Metric thread size	D	Cat. # Galvanized steel	Cat. # 316L stainless steel
16	25.5	**CAP280016**	**CAP280069**
20	32.5	**CAP280020**	**CAP280029**
25	39.5	**CAP280025**	**CAP280259**
32	49.5	**CAP280032**	**CAP280329**
40	64.5	**CAP280040**	**CAP280409**
50	80.5	**CAP280050**	**CAP280509**
63	100.0	**CAP280063**	**CAP280639**
75	112.0	**CAP280075**	**CAP280759**
90	123.0	**CAP280090**	**CAP280099**

NPT thread size	D	Cat. # 316L stainless steel
1/2"	25.5	**CAP290129**
3/4"	32.5	**CAP290139**
1"	39.5	**CAP290149**
1 1/4"	49.5	**CAP290159**
1 1/2"	64.5	**CAP290169**
2"	80.5	**CAP290179**
2 1/2"	100.0	**CAP290189**
3"	112.0	**CAP2901299**

Shrouds

ADE gland size	Diameter (A)	Cat. #
4	16.0	**CAP506040**
5	20.0	**CAP506050**
6	25.0	**CAP506060**
7	31.0	**CAP506070**
8	43.0	**CAP506080**
9	52.0	**CAP506090**
10	59.0	**CAP506100**
11	67.0	**CAP506110**
12	75.0	**CAP506120**
13	90.0	**CAP506130**
14	100.0	**CAP506140**
15	116.0	**CAP506150**
16	127.0	**CAP506160**

All dimensions in millimeters.

Material is PVC.

Additional thread conversion products and accessories from Redapt

		IECEx	ATEX Gas & Dust	ATEX Mining (M2 only)	North America	Russia	India
Swivel adaptors		■	■	■		■	
90 degree adaptors		■	■	■	■		
Male to male and female to female (IECEx only) **adaptors**		■	■		■	■	
Insulated adaptors		■	■	■			
Cable gland stopper boxes		■	■			■	
Unions			■		■	■	
Earth lead adaptors		■	■		■	■	
Threaded earth plates			■				
Flexible conduit stopper boxes		■	■			■	
Flexible conduit							

For further information please visit our website www.redapt.co.uk.

Ingress protection (IP)

Hazardous area standards generally state a minimum IP rating of IP54 or NEMA 3 for degree of protection against solid foreign objects and against water. However, it is essential when selecting Redapt products to ensure that the product will maintain the IP or NEMA rating of the equipment and the integrity of the installation.

The following table contains definitions detailing the environmental protection levels that Redapt products are capable of maintaining:

IP codes are based on the IEC standard dust/water 50269 – degrees of protection provided by enclosures

1st numeral – protection against solid objects

2nd numeral – protection against water

IP54
- Dust protected. Prevents ingress of dust sufficient to cause harm.
- Protected from splashing water from any direction.

IP66
- Dust-tight. No ingress of dust possible.
- Protected against heavy seas or powerful jets of water. Prevents ingress sufficient to cause harm.

IP67
- Dust-tight. No ingress of dust possible.
- Protected against harmful ingress of water when immersed between a depth of 150mm to 1m.

IP68
- Dust-tight. No ingress of dust possible.
- Protected against submersion. Suitable for continuous immersion in water at stated depth. (Depth stated for Redapt products = 2m for 60 minutes duration)

North American and Canadian markets define environmental protection as CSA and NEMA enclosure types

Type 3
- Type 3 enclosures are intended for outdoor use primarily to provide a degree of protection against rain, sleet, windblown dust and damage from external ice formation.

Type 4
- Type 4 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against wind blown dust and rain, splashing water, hose directed water and damage from external ice formation.

Type 4X
- Type 4X enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against corrosion, wind blown dust and rain, splashing water, hose directed water and damage from external ice formation.

Type 6
- Type 6 enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose directed water, the entry of water during occasional temporary submersion at a limited depth and damage from external ice formation.

Type 6P
- Type 6P enclosures are intended for indoor or outdoor use primarily to provide a degree of protection against hose directed water, the entry of water during prolonged submersion at a limited depth and damage from external ice formation.

Thread dimension chart

ISO metric

BS 3643 1.5mm pitch		
Size	**Major dia.**	**TPI**
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**
½"	21.34	14.00
¾"	26.67	14.00
1"	33.40	11.50
1¼"	42.16	11.50
1½"	48.26	11.50
2"	60.33	11.50
2½"	73.03	8.00
3"	88.90	8.00
3½"	101.60	8.00
4"	114.30	8.00

PG

BS 3643 1.5mm pitch		
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

BS 3643 1.5mm pitch	
UK	**BSP P**arallel or **T**aper BS2279 (BS21)
Europe	**G** (Parallel) **GK** (Taper) **R** (Parallel) **RK** (Taper)
Japan	**PF** (Parallel) JIS B 303
CIS	**K mpy** (Taper)

BSP ISO pipe thread

ISO R/7; UNI 6125		
Size	**Pipe Dia.**	**TPI**
⅜"	16.66	19.00
½"	20.96	14.00
¾"	26.44	14.00
1"	33.25	11.00
1¼"	41.91	11.00
1½"	47.80	11.00
2"	59.61	11.00
2½"	75.18	11.00
3"	87.88	11.00

ET imperial conduit

BS31		
Size	**Major dia.**	**TPI**
⅝"	15.88	18.00
¾"	19.05	16.00
1"	25.40	16.00
1¼"	31.75	16.00
1½"	38.10	14.00
2"	50.80	14.00
2½"	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	–	⅝"
M20	½"	11, 13.5	½"	¾"
M25	¾"	16	¾"	1"
M32	1"	21	1"	1¼"
M40	1¼"	29	1¼"	1½"
M50	1½"	36	1½"	2"
M63	2"	42, 48	2"	2½"
M75	2½"	–	2½"	3"
M90 x 2.0	3"	–	3"	–
M100 x 2.0	3½"	–	–	–
M110 x 2.0	–	–	–	–
M120 x 2.0	–	–	–	–

Adaptors and reducers selection guide

STEP 1 – To obtain the correct reference number, select the male size from the left hand column, then refer horizontally across the page to the female size (i.e. M32 (male) x M40 (female) = 208). Reference numbers in blue are adaptors; other references are reducers.

Female Size

	Metric														NPT									PG							
Male	M16	M20	M25	M32	M40	M50	M63	M75	M80	M85	M90	M100	M110	M120	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48
M16	201	201													216										201	201	201						
M20	301	202	203												217	218									301	202	202	202	204				
M25	303	303	257	206											303	219	221								303	303	303	257	204				
M32	305	305	305	206	208										305	305	221	223							305	305	305	305	207	258			
M40	307	307	307	307	208	209									307	307	307	223	224						307	307	307	307	307	208	209		
M50	309	309	309	309	309	259	211								309	309	309	309	225	226					309	309	309	309	309	309	210	210	211
M63	310	310	310	310	310	310	211	212							310	310	310	310	310	226	227				310	310	310	310	310	310	310	310	211
M75	311	311	311	311	311	311	311	212	261	213	213				311	311	311	311	311	311	360	228			311	311	311	311	311	311	311	311	311
M80	311	311	311	311	311	311	311	261	261	214	214																						
M85	312	312	312	312	312	312	312	214	214	214	214																						
M90	312	312	312	312	312	312	312	312	214	214	214	215			312	312	312	312	312	312	312	229	230	231									
M100	313	313	313	313	313	313	313	313	313	313	215	215	262	263	313	313	313	313	313	313	313	313	230	231									
M110	325	325	325	325	325	325	325	325	325	325	325	262	262	263																			
M120	326	326	326	326	326	326	326	326	326	326	326	326	263	263																			

	Metric										NPT											PG								
NPT	M16	M20	M25	M32	M40	M50	M63	M75	M90	M100	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"	3 1/2"	4"	5"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48
1/2"	314	232	234								245	246										314	232	232	232	265				
3/4"	315	315	234	235							315	246	247									315	315	315	234	235				
1"	316	316	316	236	237						316	316	248	249								316	316	316	316	236	237			
1 1/4"	317	317	317	317	237	238					317	317	317	249	250							317	317	317	317	317	237	238		
1 1/2"	318	318	318	318	318	238	240				318	318	318	318	250	251						318	318	318	318	318	318	238	239	240
2"	319	319	319	319	319	319	240	241			319	319	319	319	319	251	252					319	319	319	319	319	319	319	319	240
2 1/2"	320	320	320	320	320	320	320	242	243		320	320	320	320	320	320	253	254				320	320	320	320	320	320	320	320	320
3"	321	321	321	321	321	321	321	321	243	244	321	321	321	321	321	321	321	254	255			321	321	321	321	321	321	321	321	321
3 1/2"	322	322	322	322	322	322	322	322	322	244	322	322	322	322	322	322	322	322	255	256		322	322	322	322	322	322	322	322	322
4"	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	323	256	264	323	323	323	323	323	323	323	323	323
5"	–	–	–	–	–	–	–	–	–	–	327	327	327	327	327	327	327	327	327	327	–	–	–	–	–	–	–	–	–	–

	Metric								NPT							PG								
PG	M16	M20	M25	M32	M40	M50	M63	M75	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	PG7&9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48
7&9	201	201							216							201	201	201						
11	202	202	203						217	218						301/202	202	202	202					
13.5	301	202	203						217	218						301	202	202	202	204				
16	302	203	203						218	218	221					302	302	203	203	204				
21	304	304	205	206	206				304	220	221					304	304	304	304	205	258			
29	306	306	306	306	208	209			306	306	223	223	224			306	306	306	306	208	209			
36	308	308	308	308	308	209	211		308	308	308	224	224			308	308	308	308	308	308	209	210	211
42	324	324	324	324	324	210	211		324	324	324	324	324	226		324	324	324	324	324	324	324	210	211
48	310	310	310	310	310	310	211	211	310	310	310	310	310	226	227	310	310	310	310	310	310	310	310	211

EATON'S CROUSE-HINDS 26

Adaptors and reducers selection guide

STEP 2 – Having obtained the reference number, go to the relevant column within the dimension tables to obtain the adaptor or reducer's dimensions. Please note that these dimensions refer to metallic products only.

Adaptors

Metric x metric, metric x PG, PG x metric, PG x PG																			
Reference numbers	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	257	258	259
Hex across flats	23.4	27.0	30.5	33.0	36.0	37.6	37.6	47.2	55.9	61.2	70.1	90.2	106.4	106.4	114.3	23.4	31.8	41.3	57.2
Hex across corners	26.8	31.0	35.0	38.0	41.5	43.2	43.2	53.4	64.3	70.4	81.8	103.7	122.4	122.4	131.4	26.8	36.1	47.7	66.0
Male thread length	16	16	16	16	16	16	16	16	16	16	16	16	16	20	20	15	16	16	16
Female thread length	17	17	17	17	17	17	17	17	17	17	17	17	22	22	22	20	17	17	17
Total length	38.5	38.5	38.5	38.5	38.5	38.5	38.5	38.5	39.5	39.5	39.5	39.5	45.0	49.0	49.0	42.0	38.5	38.5	39.5

Metric x NPT, PG x NPT																			
Reference numbers	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	261	262	263	-
Hex across flats	27.0	30.5	32.0	37.6	37.6	41.3	47.2	55.9	57.2	70.1	80.0	106.4	106.4	114.3	127.0	90.2	120.7	139.7	-
Hex across corners	31.0	35.0	36.7	43.2	43.2	47.5	53.4	64.3	66.0	81.8	92.0	122.4	122.4	131.4	147.0	104.1	139.4	161.3	-
Male thread length	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	20	20	-
Female thread length	20	20	20	20	25	25	26	26	26	27	40	35	42	42	44	22	22	22	-
Total length	42	42	42	42	47	47	47	48	48	48	58	58	62	62	62	48	48	49	-

NPT x metric, NPT x PG																			
Reference numbers	232	233	234	235	236	237	238	239	240	241	242	243	244	260	265	-	-	-	-
Hex across flats	23.4	28.6	30.5	37.6	37.6	44.5	55.9	70.1	70.1	90.2	90.2	106.4	114.3	90.2	33.0	-	-	-	-
Hex across corners	26.8	32.9	35.0	43.2	43.2	51.1	64.3	70.4	81.8	103.7	103.7	122.4	131.4	103.7	38.0	-	-	-	-
Male thread length	20	20	20	20	25	25	25	25	25	25	35	35	35	16	20				
Female thread length	17	17	17	17	17	17	17	17	17	17	17	22	22	35	77	-	-	-	-
Total length	43	43	43	43	48	48	49	49	49	49	59	64	64	58	43	-	-	-	-

NPT x NPT																			
Reference numbers	245	246	247	248	249	250	251	252	253	254	255	256	264	-	-	-	-	-	-
Hex across flats	23.4	30.5	37.6	37.6	47.2	55.9	70.1	80.0	80.0	106.4	114.3	127.0	158.8	-	-	-	-	-	-
Hex across corners	26.8	35.0	43.2	43.2	53.4	64.3	81.8	92.0	92.0	122.4	131.4	146.0	183.3	-	-	-	-	-	-
Male thread length	20	20	20	25	25	25	25	25	35	35	35	35	35	-	-	-	-	-	-
Female thread length	20	20	25	25	25	25	25	35	35	35	35	35	47	-	-	-	-	-	-
Total length	46	46	51	56	56	57	57	67	77	77	78	78	81	-	-	-	-	-	-

Reducers

Metric and PG																			
Reference numbers	301	302	303	304	305	306	307	308	309	310	311	312	313	324	325	326	-	-	-
Hex across flats	27.0	30.5	31.8	36.0	37.6	44.5	47.2	55.9	57.2	70.1	90.2	106.4	114.3	61.2	120.7	127.0	-	-	-
Hex across corners	31.0	35.0	36.7	41.5	43.2	51.1	53.4	64.3	66.0	81.8	103.7	122.4	131.0	70.7	139.4	146.6	-	-	-
Male thread length	16	16	16	16	16	16	16	16	16	16	16	20	20	16	16	16	-	-	-
Total length	26	26	26	26	26	26	26	27	27	27	27	31	31	27	28	28	-	-	-

NPT																			
Reference numbers	314	315	316	317	318	319	320	321	322	323	327	-	-	-	-	-	-	-	-
Hex across flats	23.4	27.9	34.9	44.5	52.1	61.2	80.0	90.2	106.4	120.7	146.0	-	-	-	-	-	-	-	-
Hex across corners	26.8	32.1	40.2	51.1	59.9	70.4	92.0	103.7	122.4	138.8	168.6	-	-	-	-	-	-	-	-
Male thread length	20	20	25	25	25	25	35	35	35	35	35	-	-	-	-	-	-	-	-
Total length	30	30	35	35	35	36	46	46	46	47	47	-	-	-	-	-	-	-	-

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Printed in USA
Form No. 5400-0119
January 2019

Powering Business Worldwide