

# Female to female unions (Exde) – UF-U Series

## Technical specification

Redapt UF-U unions provide a method of matching electrical thread forms on hazardous area approved equipment whilst ensuring the integrity and Ex approval of the installation is maintained.

Manufactured as a three-piece assembly to facilitate easy in-line installation, Redapt's unions provide a running joining whilst eliminating exposed threads and are particularly suitable for use where a coupler would be impractical. Designed for hazardous area applications and the range is certified to protection concepts Ex d "Flameproof" and Ex e "Increased Safety" for use in Zone 1 and Zone 2 applications. Also certified Ex tb "dust tight" for use in Zone 21 & 22 applications.



Type UF-U

### Certifications and compliances

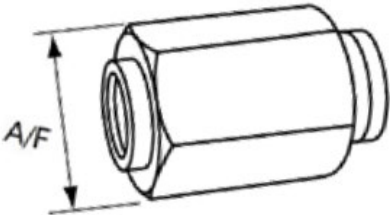


#### Code of protection categories

- ATEX:** I M2/II 2 GD
- IECEC:** Ex db I/IIC Mb/Gb, Ex eb I/IIC Mb/Gb, Ex tb IIIC Db (Aluminium not mining)
- CSA:** Ex db I/IIC Mb/Gb, Ex eb I/IIC Mb/Gb, Ex tb IIIC Db IP6X  
Ex db / Ex eb IIC Gb IP54  
CII Div 1 Gr ABCD CII Gr EFG CIII; Type 3

#### Compliance standards

- ATEX:** EN 60079-0, EN 60079-1, EN 60079-7, EN 60079-31
- IECEC:** IEC 60079-0, IEC 60079-1, IEC 60079-7, IEC 60079-31
- CSA:** CAN/CSA C22.2 No. 60079-0, No. 60079-1, No. 60079-7, ANSI/UL 60079-0, 60079-1, 60079-7, UL1203



#### Certificate details

- ATEX:** ITS16ATEX101339X
- IECEC:** IECEX ITS 16.0013X
- CSA:** CSA01CA1248014X
- EAC:** TC RU C-GB.MO62.B.06225
- INMETRO:** NCC 18.0133X

#### Temperature

-60°C to +200°C

#### Ingress protection (IP):

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

#### Dimensions

| Size | A/F    |
|------|--------|
| M20  | 37.59  |
| M25  | 42.42  |
| M32  | 55.88  |
| M40  | 55.88  |
| M50  | 80.01  |
| M63  | 90.17  |
| M75  | 114.30 |

#### Plating options

- Electroless nickel
- Zinc
- Chromated
- Others on application

#### Threadforms

- Metric
- NPT
- PG
- ISO Pipe (BSP)
- ET

# Female to female unions (Exde) – Product coding

| Product                | DIGITS 1 & 2 |
|------------------------|--------------|
| Female to female UNION | UF           |

| Certification | DIGIT 3                       |
|---------------|-------------------------------|
| U             | Exd I and IIC & Exe I and IIC |

| Material | DIGIT 4         |
|----------|-----------------|
| 1        | Brass           |
| 2        | Mild steel      |
| 3        | Stainless steel |
| 5        | Aluminium       |

| Plating | DIGIT 5            |
|---------|--------------------|
| 0       | Unplated           |
| 1       | Electroless nickel |
| 2       | Zinc               |
| 6       | Chromated          |

DIGITS 6 & 7 Female thread ; DIGITS 8 & 9 Female thread

| Metric        | ET imperial conduit | NPT           | NPSM           | ISO pipe parallel (BSPP) | ISO pipe taper (BSPT) | PG         |
|---------------|---------------------|---------------|----------------|--------------------------|-----------------------|------------|
| 02 M12        |                     |               |                |                          |                       |            |
| 03 M16        | 17 5/8" ET          | 29 1/2" NPT   | 42 1/2" NPSM   | 55 1/2" BSPP             | 68 1/2" BSPT          | 79 PG7     |
| 04 M20        | 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    |
| 11 M80 x 2.0  | ET Special          | 37 3 1/2" NPT | 50 3 1/2" NPSM | 63 3 1/2" BSPP           | 76 3 1/2" BSPT        | 87 PG42    |
| 12 M85 x 2.0  |                     | 38 4" NPT     | 51 4" NPSM     | 64 4" BSPP               | 77 4" BSPT            | 88 PG48    |
| 13 M90 x 2.0  |                     | NT Special    | NS Special     | BP Special               | BT Special            | PG Special |
| 14 M100 x 2.0 |                     |               |                |                          |                       |            |
| 15 M110 x 2.0 |                     |               |                |                          |                       |            |
| BZ M120 x 2.0 |                     |               |                |                          |                       |            |

Note: threadform codes below to be used for both male and female threads.

## Example

| Digits 1&2 | Digit 3         | Digit 4 | Digit 5       | Digits 6 & 7    | Digits 8 & 9 |
|------------|-----------------|---------|---------------|-----------------|--------------|
| UF         | - U             | - 1     | - 1           | - 29            | - 04         |
| Union      | Exd/e certified | Brass   | Nickel-plated | 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   |
|------|-----------|-------|
| 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

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<br>BS2279 (BS21)                                  |
| Europe | <b>G</b> (Parallel) <b>GK</b> (Taper)<br><b>R</b> (Parallel) <b>RK</b> (Taper) |
| Japan  | <b>PF</b> (Parallel) JISB 303                                                  |
| CIS    | <b>K mpy</b> (Taper)                                                           |

## BSP ISO pipe thread

ISO R/7; UNI 6125

| Size | Pipe Dia. | TPI   |
|------|-----------|-------|
| ⅝"   | 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 | —            | —        | —            | —   |