



# Non-Metallic Systems

## Hi-Spec PB Type A



### Technical Characteristics

|                                    |   |          |          |
|------------------------------------|---|----------|----------|
| Conforms to                        | BSI Kitemark KM-35161<br>Low voltage directive  |          |          |
| Approvals and Standards            |   |          |          |
| Degree of mechanical protection    | High Tensile Strength   |          |          |
| Degree of protection               | IP66 - As standard<br>IP67 - As standard  |          |          |
| UV protection                      | Very High   |          |          |
| Fitting Characteristics            | Straight fitting - Fixed external male thread   |          |          |
| Application                        | For insertion into threaded entries or knockouts using a locknut to secure  |          |          |
| Normal operating temperature range | Application   | Min Temp | Max Temp |
|                                    | Static  | - 60°C   | +260°C   |
|                                    | Dynamic   | - 45°C   | +250 °C  |
| For use with - Conduit Series      | Hi-Spec braided - <a href="#">PKTC</a> , <a href="#">PKSS</a> , <a href="#">PRTC</a> & <a href="#">PRSS</a>   |          |          |

### Fire performance

For fire performance information, please refer to relevant conduit data sheet as highlighted above.



|                  |                                     |
|------------------|-------------------------------------|
| Testing data     | Click or See page <a href="#">3</a> |
| Type of material | Nickel Plated Brass body & back nut |

### Image



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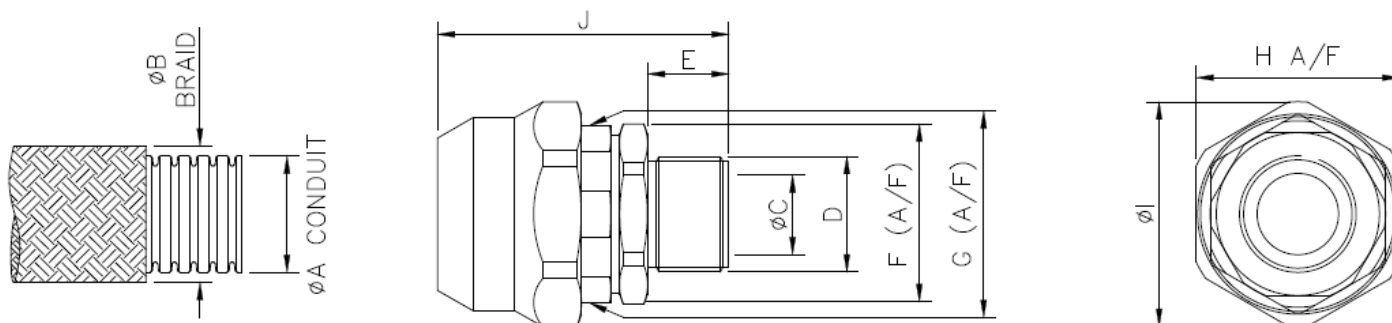
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### Dimensional & Thread Data

| Part No<br>Metric Threads | To Suit<br>Conduit<br>øA | Braid<br>øB | Thread<br>D | Nominal Dimensions (mm) |      |      |      |      |      |      | Weight<br>(kg) |
|---------------------------|--------------------------|-------------|-------------|-------------------------|------|------|------|------|------|------|----------------|
|                           |                          |             |             | Bore<br>øC              | E    | F    | G    | H    | I    | J    |                |
| PBF13/M16/A               | 13.0                     | 14.1        | M16x1.5     | 12.0                    | 12.0 | 22.0 | 24.0 | 28.0 | 30.5 | 43.0 | 0.083          |
| PBF16/M16/A               | 15.8                     | 17.2        | M16x1.5     | 12.0                    | 12.0 | 24.0 | 25.4 | 30.0 | 33.0 | 46.0 | 0.098          |
| PBF21/M20/A               | 21.2                     | 23.6        | M20x1.5     | 16.0                    | 14.0 | 28.0 | 30.0 | 35.0 | 39.0 | 50.0 | 0.126          |
| PBC28/M25/A               | 28.5                     | 30.0        | M25x1.5     | 19.0                    | 15.0 | 38.0 | 38.0 | 45.0 | 49.0 | 55.0 | 0.224          |
| PBC34/M32/A               | 34.5                     | 36.0        | M32x1.5     | 26.5                    | 18.0 | 42.0 | 45.0 | 50.0 | 55.0 | 62.0 | 0.292          |
| PBC42/M40/A               | 42.4                     | 45.5        | M40x1.5     | 35.0                    | 15.0 | 54.0 | 57.0 | 75.0 | 77.0 | 80.0 | 0.602          |



| Metric      | Standard thread conforming to EN60423 & BS3643 |                            |       |
|-------------|--|----------------------------|-------|
| Thread Size | Ext Thread Outside Diameter                    | Int Thread Inside Diameter | Pitch |
| M12         | 12mm   | 10.9mm                     | 1.5mm |
| M16         | 16mm   | 14.4mm                     | 1.5mm |
| M20         | 20mm   | 18.4mm                     | 1.5mm |
| M25         | 25mm   | 23.4mm                     | 1.5mm |
| M32         | 32mm   | 30.4mm                     | 1.5mm |
| M40         | 40mm   | 38.4mm                     | 1.5mm |
| M50         | 50mm   | 48.4mm                     | 1.5mm |
| M63         | 63mm   | 61.4mm                     | 1.5mm |

NOTE: Dimensions are nominal

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### BS EN 61386 Classification

|  | Fitting | Compression | Impact | Min temp | Max temp | bending | electrical | IP solids | IP water | Corrosion | Tensile | Non-flame Propogating | Suspended load |
|--|---------|-------------|--------|----------|----------|---------|------------|-----------|----------|-----------|---------|-----------------------|----------------|
|  | PB      | N/A         | 4      | 5        | 6        | N/A     | 1          | 6         | 7        | 0         | 3       | 1                     | 0              |

### Mechanical Properties

| Test Type               | Methods / Standards | Requirements                                      | Value   |
|-------------------------|---------------------|---|---------|
| Tensile Strength        | IEC61386-1          | 2 mins at Specified Value ( <i>PKSS Conduit</i> ) | Class 3 |
| Tensile Strength        |                     | Ultimate Pullout ( <i>PKSS Conduit</i> )          | 850N    |
| Impact Strength @ -45°C | IEC61386-1          | No visible damage                                 | Class 4 |
| Impact Strength @ -5°C  | IEC61386-1          | No visible damage                                 | Class 5 |
| Impact Strength @ 23°C  | IEC61386-1          | No visible damage                                 | Class 5 |

Tensile Tests to IEC 61386 gives the minimum classification value only. Actual values will depend on the type and size of the fittings used and will always be greater than the minimum – Impact strength is the minimum classification value at the minimum temperature – actual values will depend on size and temperature. Specific values available on request.

### Thermal Properties

| Test Type              | Methods / Standards | Requirements                 | Value           |
|------------------------|---------------------|------------------------------|-----------------|
| Dynamic Applications   | IEC 61386-23        | 5000 Operations at MBR 2hrs  | -45°C to +260°C |
| Static Short Term Temp |                     | Temporary Use (3000hrs)      | -60°C to +260°C |
| Static Long Term Temp  |                     | Permanent Use (30,000) Hours | -45°C to +260°C |

### Chemical Resistance Chart

| Key:                   | <div style="display: flex; justify-content: space-between;"> <span style="color: green;">●</span> Suitable :</div> <div style="display: flex; justify-content: space-between;"> <span style="color: yellow;">●</span> Limited Suitability :</div> <div style="display: flex; justify-content: space-between;"> <span style="color: red;">●</span> Unsuitable :</div> <div style="display: flex; justify-content: space-between;"> <span style="color: black;">●</span> Not Tested :</div> |                          |                         |  |
|------------------------|---|--------------------------|-------------------------|--|
| ● Astm No.1            | ● Diesel oil  | ● Methyl Bromide         | ● Sulphur Dioxide (Gas) |  |
| ● Astm No.2            | ● Diethylamine  | ● MEK                    | ● Sulphuric Acid (10%)  |  |
| ● Astm No.3            | ● Ethanol   | ● Nitric Acid (10%)      | ● Sulphuric Acid (70%)  |  |
| ● Acetic Acid (10%)    | ● Ether   | ● Nitric Acid (70%)      | ● Toluene               |  |
| ● Acetone              | ● Ethylamine  | ● Oxalic Acid            | ● Transformer Oil       |  |
| ● Aluminium Chloride   | ● Ethylene Glycol   | ● Ozone (Gas)            | ● 1,1,1-Trichloroethane |  |
| ● Aniline              | ● Ethyl Ethanoate   | ● Paraffin oil           | ● Trichloroethylene     |  |
| ● Benzaldehyde         | ● Freon 32  | ● Petrol                 | ● Turpentine            |  |
| ● Benzene              | ● Hydrochloric Acid (10%)   | ● Phenol                 | ● Vegetable Oil         |  |
| ● Carbon tetrachloride | ● Hydrochloric Acid (36%)   | ● Sea Water              | ● Vinyl Acetate         |  |
| ● Chlorine water       | ● Hydrogen Peroxide (35%)   | ● Silver Nitrate         | ● Water                 |  |
| ● Chloroform           | ● Hydrogen Peroxide (87%)   | ● Skydrol                | ● White Spirit          |  |
| ● Citric Acid          | ● Lactic Acid   | ● Sodium Chloride        | ● Zinc Chloride         |  |
| ● Copper Sulphate      | ● Lubricating oil   | ● Sodium Hydroxide (10%) |                         |  |
| ● Cresol               | ● Methanol  | ● Sodium Hydroxide (60%) |                         |  |

The information above is given as a guide only and is based on published technical data and experience.

The chemical resistance of the above products is dependant on factors such as chemical exposure, concentration of the chemical and temperature. The above chemicals are valid for a temperature of 23°C. Use of the above table is at the users own discretion and risk. Those using it must satisfy themselves that their application presents no health and safety risks. The end user should assess compatibility with their application and contact Thomas & Betts for further information.

ADHERENCE TO THE CURRENT WIRING REGULATIONS BS7671 OR NEC WIRING REGULATIONS (FOR USA) IS STRONGLY ADVISED.

MINIMUM BEND RADIUS FOR FLEXING IS DEPENDANT UPON MINIMUM TEMPERATURE, BENDING FREQUENCY AND CHEMICAL ENVIRONMENT.

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The Company's policy is one of continuous improvement and reserves the right to change specifications at any time without prior notice.