ISR™ fittings
Industrial strain-relief fittings
ISR™ FITTINGS

ISR fittings
The design standard for high-performance industrial strain-relief fittings

Temperature range
- -50 °C to 110 °C

Certifications and standards
- Class/zones system
  - Ex e IIC Gb Ex ta IIC Da IP66
- Class/divisions system
  - CLI Div2 ABCD CLI Div2 FG CLIII Div2 type 4X

Class I, Zone 1, 2 / Class II, Zone 20, 21, 22
- Ex, e, IIC, Gb
- Group II gas protection “increased safety”
- Where arcs and sparks don’t normally occur
- IIC: acetylene, hydrogen and all other gases

Ex, ta, IIC, Da
- Dust atmospheres
- IIC: conductive and other types of dusts

IP66
- Ingress protection
- Dust-tight and powerful water jets

Zone 1, 2, 20, 21, 22 / Class I Division 2 and Class II, III Division 1

CLI, DIV2, ABCD
- Gas and vapors protection
  - A: acetylene
  - B: hydrogen
  - C: ethylene
  - D: propane and methane

CLII, DIV1, EFG
- Dust protection
  - E: Metal
  - F: Coal
  - G: Flour, grain

CLIII, DIV1
- Fibers and flyings protection
- Type 4X
  - Environmental protection from dust and water
  - Corrosion resistant

Class I, Zone 1,2, 20, 21, 22 / Class I, II, III Division 2

Class I, Zone 1, AEx, e, IIC
- Gas protection “increased safety”
- Where arcs and sparks don’t normally occur
- IIC: acetylene, hydrogen and all other gases

Zone 20, AEx, ta
- Dust atmospheres
- IIC: conductive and other types of dusts
ISR fittings
Superior 100% pull-out performance with no external clamping

The ISR fitting consistently exceeds IEC standards for 100% pull-out resistance with no external cable clamping.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Cat. no.</th>
<th>Hub size in.</th>
<th>Torque lbf-in. (Nm)</th>
<th>Throat dia. in. (mm)</th>
<th>Min. dia. in. (mm)</th>
<th>Max. dia. in. (mm)</th>
<th>A (thread)</th>
<th>B (ref.) † in. (mm)</th>
<th>C (O.D.) in. (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISR050-053</td>
<td>¼</td>
<td>400 (45.19)</td>
<td>0.535 (13.59)</td>
<td>0.325 (8.25)</td>
<td>0.525 (13.34)</td>
<td>0.5-14 NPT</td>
<td>1.65 (41.91)</td>
<td>1.350 (34.29)</td>
</tr>
<tr>
<td>ISR050-062</td>
<td>¼</td>
<td>400 (45.19)</td>
<td>0.630 (16.00)</td>
<td>0.425 (10.79)</td>
<td>0.620 (15.75)</td>
<td>0.5-14 NPT</td>
<td>1.683 (42.75)</td>
<td>1.500 (38.10)</td>
</tr>
<tr>
<td>ISR075-082</td>
<td>¾</td>
<td>600 (67.79)</td>
<td>0.825 (20.96)</td>
<td>0.585 (14.86)</td>
<td>0.815 (20.70)</td>
<td>0.75-14 NPT</td>
<td>1.790 (45.47)</td>
<td>1.700 (43.18)</td>
</tr>
<tr>
<td>ISR100-102</td>
<td>1</td>
<td>800 (90.39)</td>
<td>1.035 (26.29)</td>
<td>0.785 (19.94)</td>
<td>1.025 (26.04)</td>
<td>1-11.5 NPT</td>
<td>1.818 (46.18)</td>
<td>1.900 (48.26)</td>
</tr>
<tr>
<td>ISR125-122</td>
<td>1¼</td>
<td>1100 (124.28)</td>
<td>1.225 (31.12)</td>
<td>0.985 (25.02)</td>
<td>1.215 (30.86)</td>
<td>1.25-11.5 NPT</td>
<td>1.993 (50.62)</td>
<td>2.320 (58.93)</td>
</tr>
<tr>
<td>ISR125-137</td>
<td>1¼</td>
<td>1100 (124.28)</td>
<td>1.380 (35.05)</td>
<td>1.185 (30.10)</td>
<td>1.370 (34.80)</td>
<td>1.25-11.5 NPT</td>
<td>1.918 (48.72)</td>
<td>2.320 (58.93)</td>
</tr>
<tr>
<td>ISR150-156</td>
<td>1½</td>
<td>1300 (146.88)</td>
<td>1.560 (39.62)</td>
<td>1.335 (33.91)</td>
<td>1.550 (39.37)</td>
<td>1.50-11.5 NPT</td>
<td>1.945 (49.40)</td>
<td>2.580 (65.53)</td>
</tr>
<tr>
<td>ISR200-179</td>
<td>2</td>
<td>1600 (180.77)</td>
<td>1.795 (45.59)</td>
<td>1.525 (38.73)</td>
<td>1.785 (45.34)</td>
<td>2-11.5 NPT</td>
<td>2.017 (51.23)</td>
<td>3.012 (76.50)</td>
</tr>
<tr>
<td>ISR200-206</td>
<td>2</td>
<td>1600 (180.77)</td>
<td>2.070 (52.58)</td>
<td>1.755 (44.58)</td>
<td>2.055 (52.20)</td>
<td>2-11.5 NPT</td>
<td>2.010 (51.05)</td>
<td>3.200 (81.28)</td>
</tr>
</tbody>
</table>

† Reference dimension before installation.
The ISR difference

**Chuck ring**
- Fiber-reinforced nylon construction and unique over-molded design provide both strength and flexibility
- Acts as a built-in clamp — superior 100% pull-out performance eliminating need for external clamping
- Jaws grasp cable jacket over a large surface, preventing damage and tearing
- Flexible TPE belt positions the chucks radially, allowing uniform cable engagement

**Gland nut**
- Distinctive domed profile
- High-strength, corrosion-resistant copper-free aluminum construction (less than 0.4%)
- Heavy-duty, wide hex design for ease of installation
- Smooth, snag-free contour design prevents injury and sheds water
- Laser-etched certification markings are visible no matter where it is installed

**Body**
- High-strength, corrosion-resistant copper-free aluminum construction (less than 0.4%)
- Small turning radius allows close spacing of fittings
- Fine thread for easy tightening, ample anti-seizing grease prevents “cold-welding” to gland nut threads
- Anti-rotation splines prevent cable and bushings from twisting and deforming during tightening
- Biting, box-side teeth ensure electrical ground with enclosure and allow draining of trapped moisture to prevent corrosion
- O-ring seated in a recessed shoulder prevents over-compression of sealing bushing

**Sealing bushing**
- High-tech silicone polymer performs in extreme temperature conditions (-50 °C to 110 °C)
- Wide surface of engagement provides dependable seal against dust and liquids
- Excellent engagement even on irregular cable shapes

**Interface sealing o-ring**
- Wide and flexible — adapts easily to variations in knockout dimensions
- Wide sealing footprint to prevent moisture and dust from migrating into enclosure
ISR™ fittings
Meet 100% of cable pull-out requirements with no need for external clamping

Developed for the drill rig industry, with input from industry end users.

The majority of strain-relief fittings on the market today are designed to meet 25% of the IEC pull-out requirements for surface applications and, as per IEC standard 60079, require that the installer provide additional clamping as close as possible to the point at which cables exit the enclosure to ensure that pulling and twisting are not transferred to the terminations. The external clamping requirement adds time, complexity and cost to the installation process. In the event that additional clamping is not provided, the integrity of electrical systems as well as compliance with IEC standards is compromised.

With its unique design and integral clamping mechanism, the Kopex-Ex ISR fitting allows you to meet 100% of IEC cable pull-out requirements with no external clamping, thereby reducing installation time, complexity and costs.

The latest in ABB’s long line of renowned industrial cable termination products, the ISR fitting was developed in Canada with input from end users in the oil and gas industry. This is a high-level solution for industrial end users looking for a superior-quality fitting that reduces installation time and costs while surpassing global standards for pull-out requirements.
Meet 100% of cable pull-out requirements with no need for external clamping.

Applications

Tray cable
Complies with IEC requirements when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, ISR fittings must be used in combination with a certified Class I hazardous location sealing fitting.

Note: Tray cable is not suitable for use in Zone 1 locations.

Portable cord
Complies with IEC requirements when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, ISR fittings must be used in combination with a certified Class I hazardous location sealing fitting. Portable cord can be used in Zone 1 applications only when installed on portable equipment.

Utilization
For use with unarmored cable types suitable for use in Class I, Zone 1 (e.g. extra hard usage cord). When used with tray cables, series ISR cable glands are suitable to be installed in Class I, Zone 2/Div. 2 classified hazardous location area according to CEC/NEC wiring method, or subject to local inspection authority having jurisdiction.

NEC or USA requirements
For installations in accordance with the NEC in Class I Zone 1, the ISR fitting can be used only with listed extra-hard usage cord or listed TC-ER-HL cable having a diameter up to and including 1 inch. Additionally, for Zone 20 applications, only extra-hard usage cord can be used. Refer to NEC wiring methods for additional details and local inspection authority for more information.

Competition
• 25% pull-out resistance
• External clamping required

ISR fitting
• 100% pull-out resistance
• No external clamping required

We reserve the right to make technical changes or modify the contents of this document without prior notice. With regard to purchase orders, the agreed particulars shall prevail. ABB Inc. does not accept any responsibility whatsoever for potential errors or possible lack of information in this document.

We reserve all rights in this document and in the subject matter and illustrations contained therein. Any reproduction or utilization of its contents – in whole or in parts – is forbidden without prior written consent of ABB Inc.

Copyright © 2018 ABB
All rights reserved