

KOPEX-EX™ ISR™ FITTINGS  
INDUSTRIAL STRAIN-RELIEF FITTINGS

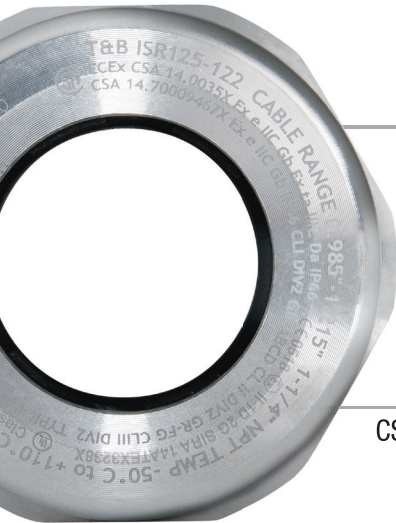
**KOPEX-EX™**



**Thomas & Betts**  
A Member of the ABB Group

# Kopex-Ex™ ISR™ Fittings

The new 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 IIIC Da IP66

Class/Divisions system  
CLI Div2 ABCD CLII Div2 FG CLIII Div2 Type 4X

## CERTIFICATES

CSA 14.70009467X • IECEX CSA 14.0035X • SIRA 14ATEX3238X • UL (pending)

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



Certifications

Group II Gas Protection  
"Increased Safety"

Where arcs and sparks  
don't normally occur

IIC: Acetylene, hydrogen  
and all other gases

Dust Atmospheres

IIIC: Conductive and other  
types of dusts

Ingress  
Protection

Dust-tight and  
powerful water jets

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



Certification

**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 TYPE 4X**

Fibers and  
flyings protection

Environmental  
protection from  
dust and water

Corrosion resistant

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



Certification

**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

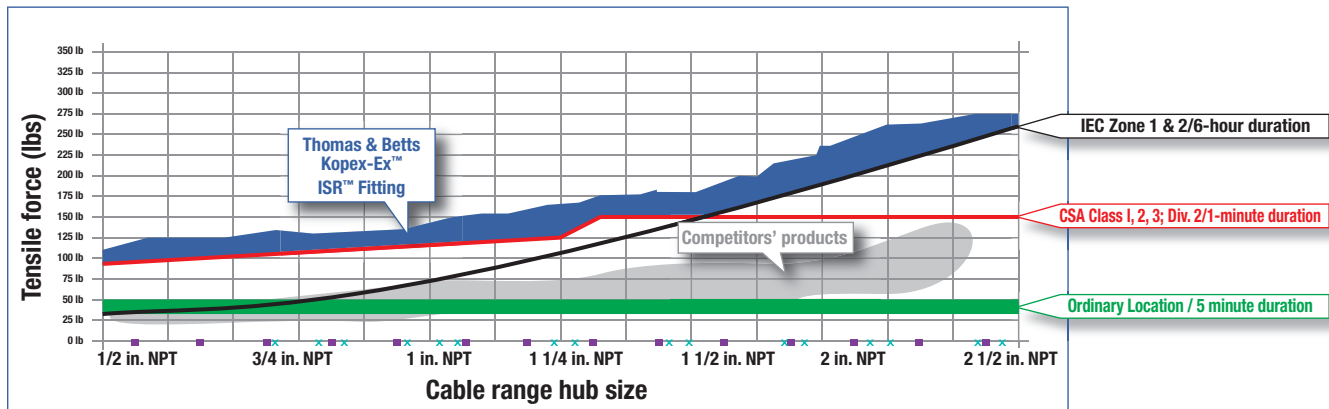
**Zone 20 AEx ta**

Dust Atmospheres

IIIC: Conductive and  
other types of dusts

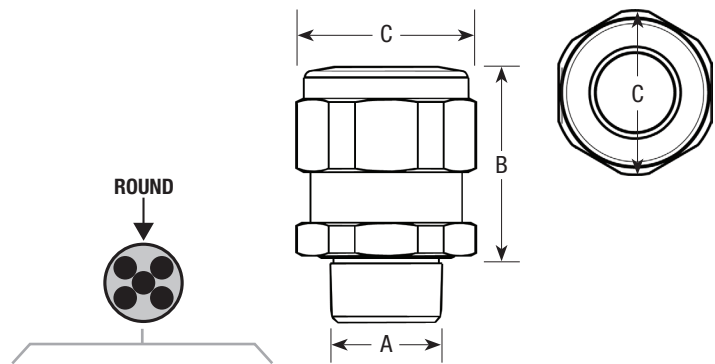
# Kopex-Ex™ ISR™ Fittings

Superior 100% pull-out performance with no external clamping



Tensile force vs. cable range hub size

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



## Ordering Information

CAT. NO.	HUB SIZE	TORQUE	THROAT DIA.	MIN. DIA.	MAX. DIA.	A (THREAD)	B (REF.) <sup>†</sup>	C (O.D.)
ISR050-053	1/2 in.	400 lbf-in (45.19 Nm)	0.535 in. (13.59 mm)	0.325 in. (8.25 mm)	0.525 in. (13.34 mm)	1/2-14 NPT	1.65 in. (41.91 mm)	1.350 in. (34.29 mm)
ISR050-062	1/2 in.	400 lbf-in (45.19 Nm)	0.630 in. (16.00 mm)	0.425 in. (10.79 mm)	0.620 in. (15.75 mm)	1/2-14 NPT	1.683 in. (42.75 mm)	1.500 in. (38.10 mm)
ISR075-082	3/4 in.	600 lbf-in (67.79 Nm)	0.825 in. (20.96 mm)	0.585 in. (14.86 mm)	0.815 in. (20.70 mm)	3/4-14 NPT	1.790 in. (45.47 mm)	1.700 in. (43.18 mm)
ISR100-102	1 in.	800 lbf-in (90.39 Nm)	1.035 in. (26.29 mm)	0.785 in. (19.94 mm)	1.025 in. (26.04 mm)	1-11.5 NPT	1.818 in. (46.18 mm)	1.900 in. (48.26 mm)
ISR125-122	1-1/4 in.	1100 lbf-in (124.28 Nm)	1.225 in. (31.12 mm)	0.985 in. (25.02 mm)	1.215 in. (30.86 mm)	1.25-11.5 NPT	1.993 in. (50.62 mm)	2.320 in. (58.93 mm)
ISR125-137	1-1/4 in.	1100 lbf-in (124.28 Nm)	1.380 in. (35.05 mm)	1.185 in. (30.10 mm)	1.370 in. (34.80 mm)	1.25-11.5 NPT	1.918 in. (48.72 mm)	2.320 in. (58.93 mm)
ISR150-156	1-1/2 in.	1300 lbf-in (146.88 Nm)	1.560 in. (39.62 mm)	1.335 in. (33.91 mm)	1.550 in. (39.37 mm)	1.50-11.5 NPT	1.945 in. (49.40 mm)	2.580 in. (65.53 mm)
ISR200-179	2 in.	1600 lbf-in (180.77 Nm)	1.795 in. (45.59 mm)	1.525 in. (38.73 mm)	1.785 in. (45.34 mm)	2-11.5 NPT	2.017 in. (51.23 mm)	3.012 in. (76.50 mm)
ISR200-206	2 in.	1600 lbf-in (180.77 Nm)	2.070 in. (52.58 mm)	1.755 in. (44.58 mm)	2.055 in. (52.20 mm)	2-11.5 NPT	2.010 in. (51.05 mm)	3.200 in. (81.28 mm)

<sup>†</sup> Reference dimension before installation.

# The Kopex-EX™ 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

## 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



## 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

## Sealing Bushing

- High-tech silicon 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



# Kopex-Ex™ ISR™ Fitting

Meet 100% of cable pullout requirements with no need for external clamping



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

Thomas & Betts is proud to introduce the next generation of globally-certified industrial strain-relief fittings:

## **Kopex-Ex™ ISR™ Fittings**

The latest in Thomas & Betts' long line of renowned industrial cable termination products, the Kopex-Ex™ 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 pullout requirements.

The majority of strain-relief fittings on the market today are designed to meet 25% of the IEC pullout 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 is 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 are compromised.

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



# Meet 100% of cable pullout requirements with no need for external clamping.

## Competition

25% pullout resistance  
External clamping required



## Kopex-Ex™ ISR™ Fitting

100% pullout resistance  
No external clamping required

## Applications

### Tray Cable

Complies with IEC requirements when used with enclosures containing no arcing or sparking devices. For enclosures with arcing or sparking devices, Kopex-Ex™ ISR™ fittings must be used in combination with a certified Class I hazardous location sealing fitting. N.B. 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, Kopex-Ex™ 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.

## Learn more about Kopex-Ex™ ISR™ fittings.

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### Online CAD library

Thomas & Betts offers free downloads

of two- and three-dimensional CAD

models of many of its products in

more than 90 native CAD formats

at [tnb.com/cadlibrary](http://tnb.com/cadlibrary).

Please ask your Thomas & Betts sales representative for a complete catalog of quality Thomas & Betts electrical products or visit us at [www.tnb.com](http://www.tnb.com). For customer service, call 1-800-816-7809. For technical questions, call 1-888-862-3289.

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