

CSR COMPACT FUSED INTERLOCKED ARKTITE® RECEPTACLE - 30 & 60 AMP

Installation & Maintenance Information

SAVE THESE INSTRUCTIONS FOR FUTURE REFERENCE

APPLICATION

CSR compact fused interlocked ARKTITE receptacles are designed to provide connection and distribution of secondary electrical power (600 volts or less) between a power source and portable or stationary electrical equipment. The CSR compact fused interlocked receptacles are available with style 2 grounding only. Style 2 grounding provides a dedicated contact for the ground connection. Refer to the Crouse-Hinds Product Catalog for a detailed description of this grounding method.

CSR fused interlocked receptacles use Bussmann® TCF type **CUBEFuse™** technology. CUBEFuse is a finger-safe, dual-element, time-delay design that has a fault interruption rating of up to 300KA.

CSR Series switches are interlocked with the ARKTITE receptacle. The switch cannot be turned on until the plug is inserted. The plug cannot be withdrawn unless the switch is in the OFF position.

The CSR series use standard Crouse-Hinds ARKTITE APJ or NPJ plugs of the same configuration and electrical ratings. The ARKTITE receptacle supplied with the CSR series enclosures are polarized to prevent mis-matching. Refer to the Crouse-Hinds Product Catalog for a complete listing of mating plugs.

CSR Series enclosures can be mounted on flat vertical surfaces or on the web between the flanges of I-beams. The CSR Series is designed for use in both indoors and outdoors in industrial environments where dust, dirt, chemical vapors, corrosion, moisture, or hose directed water is present. The enclosure is rated for NEMA 4X and 12 environmental protection.



⚠ WARNING / ADVERTISSEMENT

Do not alter this product in any way. Doing so may lead to serious injury or death.

On ne doit en aucun cas modifier ce produit. Sinon, on s'expose à des blessures graves ou mortelles.

⚠ CAUTION / ATTENTION

Read these instructions completely, all sheets, before wiring and use.

Lire attentivement toutes les instructions avant le câblage et l'utilisation.

⚠ WARNING / ADVERTISSEMENT

To avoid dangerous overheating, do not use aluminum wiring. Use copper wire only.

Pour éviter toute surchauffe dangereuse, ne pas utiliser de fil aluminium. Utiliser seulement un fil en cuivre.

⚠ WARNING / ADVERTISSEMENT

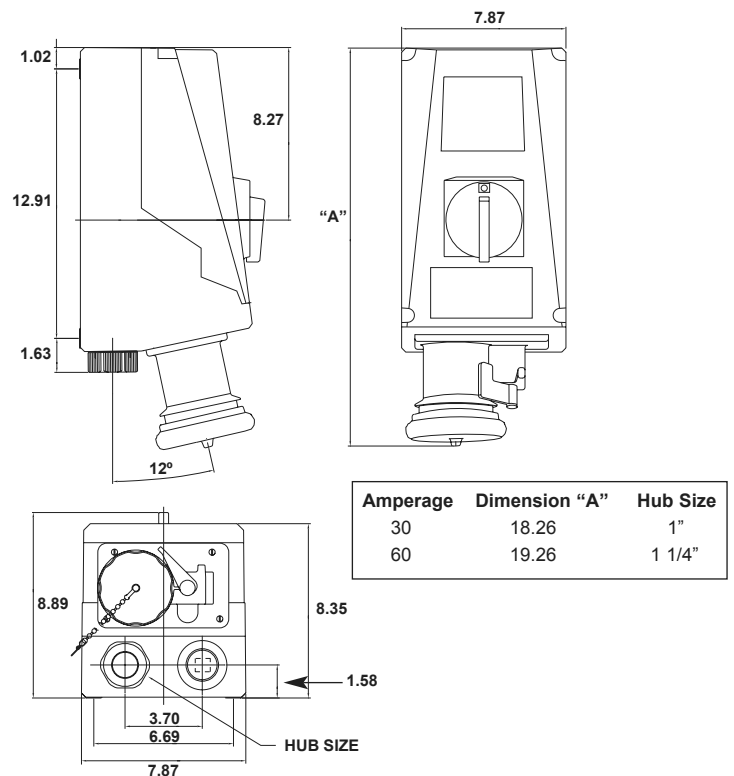
To avoid electrical shock electrical power must be **off** before and during installation, inspection, and maintenance.

Couper le courant avant et pendant l'installation, l'inspection et l'entretien pour éviter le risque de chocs électriques.

⚠ WARNING / ADVERTISSEMENT

To avoid electrical shock, always disconnect primary power source before opening device or enclosure for inspection or service

Pour éviter le risque de choc électrique, toujours débrancher la source d'alimentation principale avant d'ouvrir le dispositif ou le boîtier pour l'inspection ou l'entretien.



⚠ NOTE:

For installation only by a qualified electrician in accordance with the National Electric Code, Canadian Electric Code, applicable local codes, and these instructions.

Select proper wire size and type for load and application. Refer to National Electric Code, Article 400, for wire information.

RECEPTACLE INSTALLATION:

NOTE

The CSR Series enclosure should be installed, inspected, operated, and maintained by qualified and competent personnel.

WARNING

To avoid electrical shock hazard power must be turned OFF before and during installation and maintenance.

Separate overcurrent protection must be provided in accordance with the National Electric Code Article 220, or the Canadian Electrical Code, Section B as appropriate

To **remove front cover** for wiring and mounting, fully loosen screws (do not remove from cover) located in four corners of cover. Pull top cover away from bottom enclosure. To replace cover reverse procedure. Slight wiggle of cover and switch handle may be needed to position cover. Do not force. Switch and cover handle must be in OFF position to replace cover.

Do not over torque cover screws. Tighten 22 lb./in. max. (2.5 Nm)

The Crouse-Hinds Interlocked Receptacle is supplied with 2 hubs for a bottom feed installation.

TABLE 1

	Myers Hub Size	Hub Cat. #	Clearance Hole
30A	1"	SSTG3	1.32" - 1.38"
60A	1 1/4"	SSTG4	1.67" - 1.75"

- To install a top-feed hub, use a hole saw to drill the appropriate size hole (as shown in Table 1). Locate the hole per instructions on page 3. Install the hub, orienting the ground screw so it may be easily tightened.
- Select a mounting location that will provide suitable strength and rigidity to support the enclosure. The Crouse-Hinds enclosure can be mounted in a vertical position with receptacle pointing down or in an overhead horizontal position with receptacle cover facing down.
- Mounting the enclosure** - This enclosure will mount directly to a flat surface with four screws through the openings in the base of the enclosure. The mounting dimensions are 12.91" x 6.69".
- Attach the field ground wire to the terminal (See Wiring Diagrams on page 4) on the grounding terminal block. (See Table 2 for wire size information.) For top-feed units, run field wiring under DIN rail and loop up to terminal block, forming a drip loop for condensation.

CAUTION

To avoid fire hazard use copper conductors only with an insulation rating of 75°C minimum. Size conductors for 60°C ampacity.

5. Establish a wiring pattern for your system. Attach the field wiring to terminals labeled T1, T2, T3 as appropriate for the installation. (See Wiring Diagrams on page 4 - See Table 2 for wire size information). Maintain color code consistency per your plant wiring scheme. Select appropriate terminal for phase and neutral conductors.

6. Install fuses. Fuse data attached. Contact your local Bussmann distributor to purchase desired fuses.

TABLE 2

	Terminal	Wire Size	Torque
30A	Switch	14-4 AWG	18 in. lb.
	Term. Block Ground	22-4 AWG	20 in. lb.
	Ground Lug	22-4 AWG	35 in. lb.
60A	Fuse Block	14-4 AWG	25 in. lb.
	Switch	14-4 AWG	18 in. lb.
	Term. Block Ground	22-4 AWG	20 in. lb.
	Ground Lug	22-4 AWG	35 in. lb.
	Fuse Block	14-4 AWG	45 in. lb.

Note: Factory installed auxiliary contacts are wired normally open. Use terminal block 13 / 14 and a wire size #18-14. Torque screws to 7 lb./in. If a normally closed auxiliary contact is required, please consult factory.

- Test wiring for correctness with continuity checks, and for unwanted grounds with an insulation resistance tester.
- Ensure operating handle is in OFF position and place cover over enclosure.
- Tighten four cover screws to 22 lb./in. (2.5 Nm)

OPERATING INSTRUCTIONS:

- Remove receptacle cover
- Align keyway on plug sleeve with key in receptacle, and insert plug fully. Tighten the plug clamping ring to the receptacle by sliding the clamping ring over the receptacle neck, then turning the ring clockwise by hand to tighten.
- Turn the handle to the ON position to energize the circuit.
- The plug cannot be removed when the handle is in the ON position. Turn the handle OFF. Rotate the plug clamping ring counterclockwise, and slide it over the plug body. Pull the plug from the receptacle.

NOTE

This unit is designed to prevent operation of the switch until a plug is engaged with the receptacle. To prevent damage to the unit, DO NOT operate the unit without first inserting a compatible plug. Damage to the interlock assembly will result if operating handle on cover is forced to the ON position without a plug inserted.

MAINTENANCE:

WARNING

To avoid electrical shock always disconnect primary power source before opening enclosure for inspection or service

1. Frequent inspection should be made to ensure proper and safe operation. A schedule for maintenance checks should be determined by the environment and frequency of use. It is recommended that an inspection of the product should be conducted at least once a year. Crouse-Hinds recommends an Electrical Preventative Maintenance program as described in the National Fire Protection Association Bulletin NFPA 70B.

2. Perform visual, electrical, and mechanical checks on all components on a regular basis.

- Visually check for undue heating as evidenced by discoloration of wires or other components, damaged or worn parts, or environmental leakage evidenced by water or corrosion in the interior.
- Electrically check to make sure that all connections are clean and tight.
- Mechanically check that all parts are properly assembled, the interlock is working and operating mechanisms move freely.

CONDUIT & GROUNDING CONNECTION INSTRUCTIONS:

BOTTOM ENTRY:

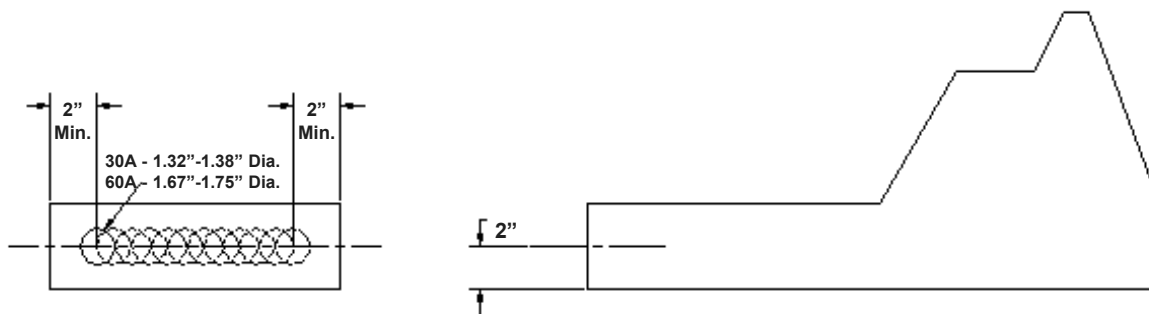
A clearance hole is provided in the bottom endwall. A Myers™ 1" or 1 1/4" conduit hub is supplied with the CSR unit.

See "Installing

Hub" below.

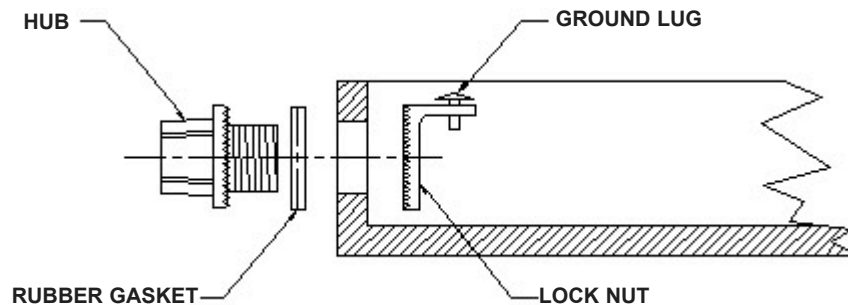
TOP ENTRY:

Measure 2" from the bottom outside edge of the top endwall and mark a horizontal centerline. Decide if you want the top hub to be placed in the center or off-center, but make sure the vertical centerline is no closer than 2" from either edge. Select a position, mark a cross-hair and drill a clearance hole per Table 1. Install the Myers 1" or 1 1/4" conduit hub. See "Installing Hub" below. **Note:** The factory drilled hub opening in the bottom endwall must be sealed. Install a Myers "Cap Off", part number STC-4-CP (order separately).



INSTALLING THE HUB

Remove the lock nut from the hub. Insert threaded end of hub through hole, making sure the rubber gasket is placed between the hub flange and the outside surface of the enclosure. Attach locking nut from the inside of the enclosure and tighten. See "Grounding the Hub" below.



GROUNDING THE HUB:

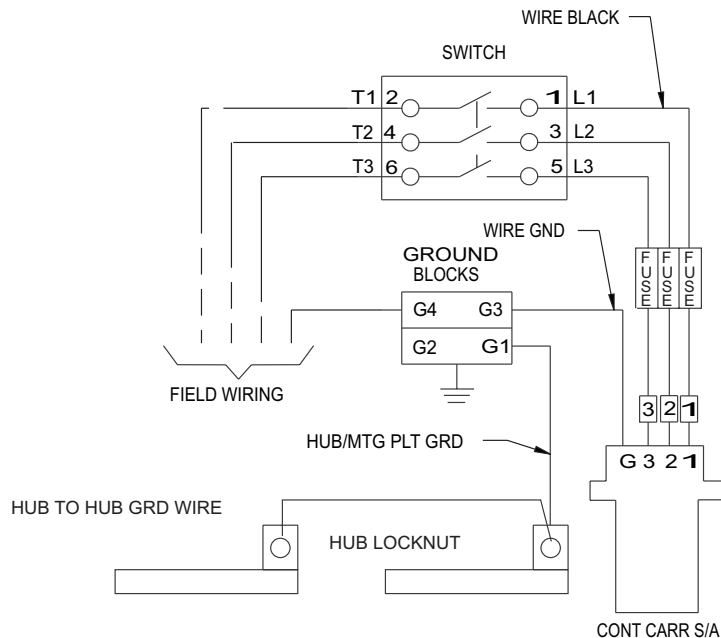
A ground wire must be installed connecting the Myers Hubs to the ground system. The locking nut on the Myers Hub has a ground termination lug. Install a #8 green ground wire from the Myers ground lug to a green ground block on the din rail. A green ground wire must also be installed between the two hubs. See wiring diagram on next page.

SHORT CIRCUIT PROTECTION ACCORDING TO UL:

These units are suitable for use on circuits capable of delivering not more than 10,000 RMS symmetrical amperes at 600VAC maximum.

WIRING DIAGRAMS: (Without Auxiliary Contact)

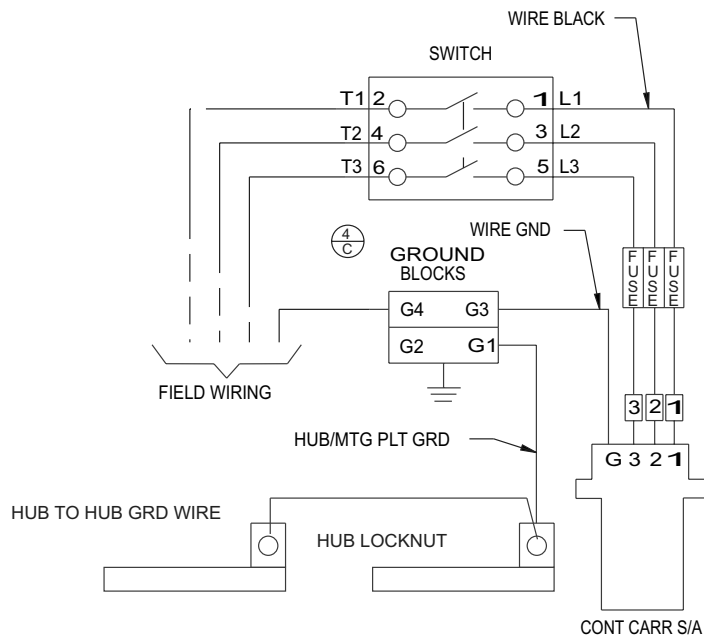
30 Amp - 3 Wire, 4 Pole Fused



Wiring Notes:

Do not block terminal openings used for field wiring.
Run ground wire from receptacle to terminal connection G3.
Run hub ground wire to terminal connection G1.
Switch is wired backwards from standard CSR 30 and 60 amp unites due to customer/field wiring space requirements.

60 Amp - 3 Wire, 4 Pole Fused



Wiring Notes:

Do not block terminal openings used for field wiring.
Run ground wire from receptacle to terminal connection G3.
Run hub ground wire to terminal connection G1.
Switch is wired backwards from standard CSR 30 and 60 amp unites due to customer/field wiring space requirements.

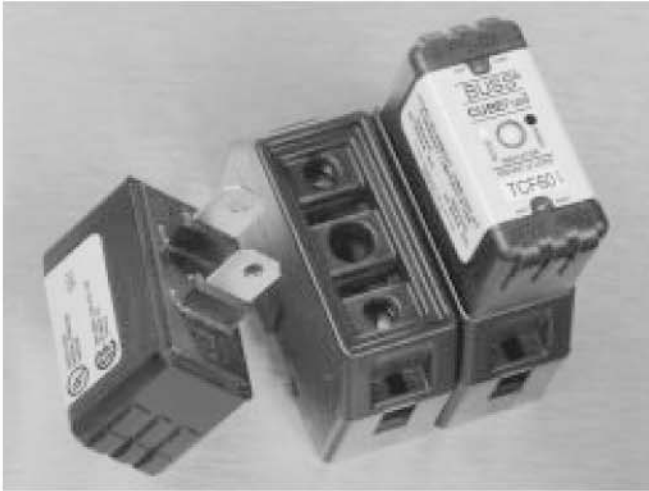
All statements, technical information and recommendations contained herein are based on information and tests we believe to be reliable. The accuracy or completeness thereof are not guaranteed. In accordance with Crouse-Hinds "Terms and Conditions of Sale", and since conditions of use are outside our control, the purchaser should determine the suitability of the product for his intended use and assumes all risk and liability whatsoever in connection therewith.

CUBEFuse™ and Fuseholder

Finger-Safe Dual-Element Time-Delay Fuses Indicating - 600 Volts or Less

TCF & TCFH

1-60 Amps



Catalog Symbol: TCF (Fuse) & TCFH (Holder)
Dual-Element, Time-Delay Fuse: 10 Seconds
 Minimum Operating Time at 500% Rated Current
Ampere Rating: 1 to 60A
Voltage Rating: 600Vac (or less)
Interrupting Rating: 300,000A RMS Symmetrical (UL)
 200,000A RMS Symmetrical (CSA)

Agency Information:
 UL Listed Special Purpose Fuse: Guide JFHR,
 File E56412
 CSA Certified Fuse: Class 1422- 02, File 53787
 UL Listed Fuseholder: Guide IZND,
 File E214079
 CSA Certified Fuseholder: Class 6225-01, File 47235

Other Electrical Certifications:
 CE compliance for the European Union Low Voltage
 Directive (50-1000Vac, 75-1500Vdc)

DC Voltage Rating: 300Vdc (or less), 100,000AIR

Catalog Numbers

TCF1	TCF3	TCF6	TCF10
TCF15	TCF17-1/2	TCF20	TCF25
TCF30	TCF35	TCF40	TCF45
TCF50	TCF60		

CUBEFuse™ Fuseholder Catalog Data

Amps	Poles	Wire *	Dual Wire *	Part Number
30	1	#14 - #8 CU	#14 CU	TCFH30
60	1	#14 - #4 CU	#10 CU	TCFH60

* 75°C (MIN) CU Wire Only

- The world's first finger safe industrial fuse system.
- True dual-element fuse construction with a minimum of 10 seconds time-delay at 500% of rating.
- Long time-delay minimizes nuisance circuit openings due to temporary overloads and transient surges.
- Meets UL Class J Time-Delay electrical performance requirements.
- High interruption rating to safely interrupt faults up to 300,000A.
- Faster response to damaging faults reduces destructive thermal and magnetic forces.
- Permanent open fuse indication.
- Designed to be an internationally accepted and specified world class product.
- Smallest footprint of any power class fuse including Class J, CC, T and RK.
- Meets requirements of IEC 60529 for IP-20 finger safe rating.
- No venting of arc or molten metal and gases during opening.
- Robust cycling and inrush current withstand.
- Low let through currents under fault conditions.
- Provides TYPE 2 "no damage" protection for IEC motors starters when properly sized.
- Low watt loss reduces power consumption and lowers operating temperature.
- Conventional Class J fuse case sizes and ampere ratings.
- Dovetail fuseholder design for ganging multiple fuse poles.
- 30 and 60A fuseholders can be ganged together.
- 30A fuses can be plugged into the 60A holder without a reducer.
- 35mm DIN rail and chassis mounting features.
- Fuseholder wire ports rated for dual wires.

Carton Quantity and Weight

Ampere Rating	Carton Qty	Weight Per Carton	
		Lbs.	Kg.
TCF1-30	12	1.39	.518
TCFH1-30	12	2.42	.902
TCF35-60	12	1.42	.530
TCFH35-60	12	2.57	.958

CUBEFuse™ and Fuseholder

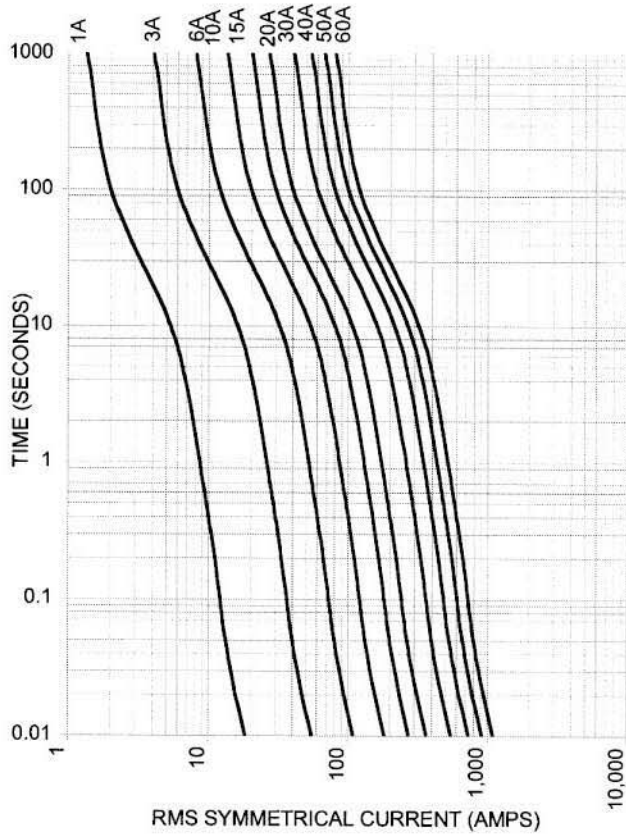
Finger-Safe Dual-Element Time-Delay Fuses

Indicating - 600 Volts or Less

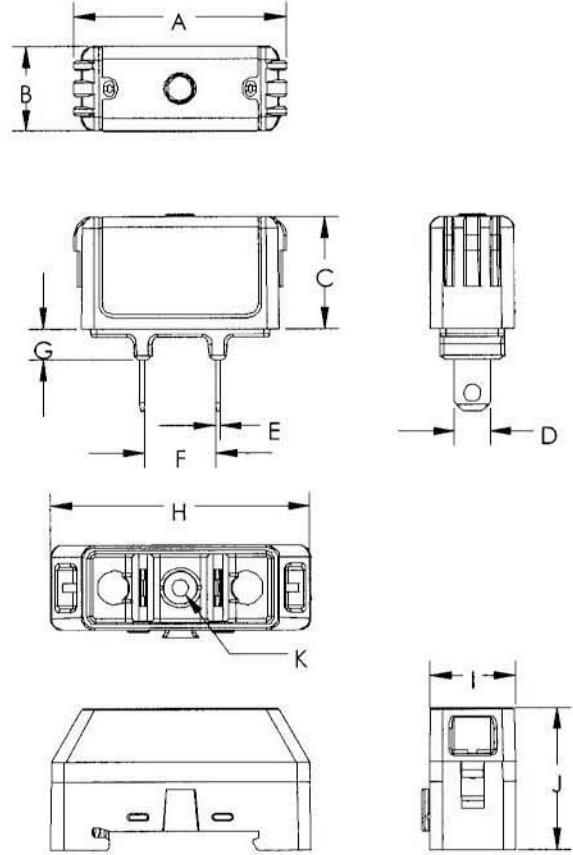
TCF & TCFH

1-60 Amps

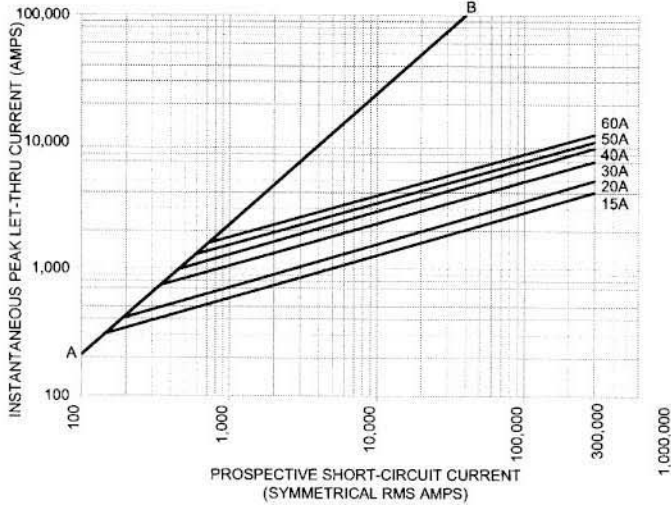
Time-Current Characteristic Curves—Average Melt



Dimensional Data For TCF and TCFH



Current Limitation Curves



Dimensional Data For TCF and TCFH

Dimension	30A in [mm]	60A in [mm]
A	1.88 [47.75]	2.13 [54.10]
B	.75 [19.05]	1.00 [25.40]
C	1.00 [25.40]	1.13 [28.58]
D	.31 [7.94]	.44 [11.11]
E	.04 [1.02]	.04 [1.02]
F	.63 [15.88]	.63 [15.88]
G	.27 [6.86]	.38 [9.65]
H	2.30 [58.42]	2.60 [66.04]
I	.76 [19.30]	1.03 [26.16]
J	1.27 [32.18]	1.53 [38.86]
K	.15 [3.81]	.17 [4.32]

CUBEFuse™ and Fuseholder

Finger-Safe Dual-Element Time-Delay Fuses

Indicating – 600 Volts or Less

TCF & TCFH

1-60 Amps

ELECTRICAL SPECIFICATIONS

Maximum operating voltage: 600Vac (300Vdc)

Maximum interruption current:

300K A maximum @ 600Vac

100K A maximum @ 300Vdc

Watts Loss at rated current:

TCF30: 3.99W

TCF60: 6.23W

THERMAL SPECIFICATIONS

Operating temperature range: -10°C to 65°C

MECHANICAL SPECIFICATIONS

Tested continuous harmonic vibration: 0.03" amplitude, 10Hz-60Hz-10Hz 4min excursion, repeated for 4hr, repeated for 3 mutually perpendicular planes (fuse in holder)

Tested impact acceleration: 20g in 3 mutually perpendicular planes

FUSE MODULE MATERIAL SPECIFICATIONS

Fuse case: 20% glass filled PES (Polyethersulfone)

Fuse terminals: 110 Copper

Fuse terminal plating: Electroless Tin

Fusible element: Copper Alloys

Filler: Pure quartz silica

Fill plug: Nylon

Indicator lens: PES (Polyethersulfone)

Indicator: Energetic chemical

FUSEHOLDER MATERIAL SPECIFICATIONS

Holder case: 15% glass filled PBT (polybutylene terephthalate)

Interface Clips: CDA7025

Interface Clip plating: Electroless Tin

Contact Lubricant: Fluoroether Grease

30A Box Lug: Copper

60A Box Lug: Copper

DIN Rail Spring: Stainless Steel

HANDLING & STORAGE SPECIFICATIONS

Storage Temperature: -10°C to 65°C

