Liquidtight flexible metal conduit fittings Specifications

Ref. CE Code Rule 12-1300

Liquidtight flexible metal conduit is a raceway of circular cross section having an outer liquidtight nonmetallic, sunlight-resistant jacket over a flexible metal core.

Liquidtight flexible metal conduit is permitted to be used for exposed or concealed work, in dry, damp or wet locations indoors and outdoors. Heavy-duty marked liquidtight flexible metal conduit is considered an acceptable wiring method in hazardous location; namely Class 1 Div 2, ClassII & Class III.

Liquidtight flexible metal conduit is not permitted where subjected to mechanical injury. The conduit is not permitted to be used underground or embedded in cinder fill or concrete. It cannot be used as a general purpose raceway.

Use of liquidtight conduit is not permitted where any combination of ambient or conductor temperature will produce temperature in excess of that for which the jacket is rated or in locations where flexing at low temperature will injure jacket. Liquidtight flexible metal conduit is not permitted for conductors over 600 volts.

Liquidtight flexible conduit is available in $\frac{1}{2}$ in. through 6 in. trade size. Conduit is constructed with galvanized steel, aluminum or stainless steel core, regular or extra flex. Outer jacket is available for a variety of applications, e.g. oil resistant where exposed to cutting oils and for service temperature ranging from -50 °C to 150 °C.

Listed and certified conduit are constructed of galvanized steel core and thermoplastic jacket rated for maximum service temperature up to 75 °C and suitable for exposure to mineral oils but not to gasoline and similar solvents. Conduit is required to be supported adequately, and bending is restricted to 360 degrees total.

Please refer to the following for further details and complete information:

- 1. UL 360 Safety standards for liquidtight flexible steel conduit
- 2. UL 514A and 514B Safety standards for outlet boxes and fittings
- 3. W-F-406 Federal specification: Fittings for cable, power, electrical and conduit, metal, flexible
- 4. NEMA FB-1 Standards publication: Fittings, cast metal boxes and conduit bodies for conduit, electrical metallic tubing and cable
- 5. EMP-1– JIC Electrical standards for mass production equipment
- 6. EGP-1 –JIC Electrical standards for general purpose machine tools
- 7. CE Code Section 12-1300 Wiring methods (liquidtight metal conduit)
- 8. CSA C22.2 No. 56-17 Flexible metallic conduit and liquidtight flexible metal conduit
- 9. CSA C22.2 Nos. 18.1 and 18.3 Safety standards for outlet boxes, conduit boxes and fittings

Please note

The excerpts and other material herein, whether relating to the Canadian Electrical Code 2018 Part I, CSA Group, the Underwriters Laboratories, Inc. listing, to industry practice or otherwise, are not intended to provide all relevant information required for use and installation. Reference to original or primary source material and data is mandatory before any application or use is made of the product.

Suggested specifications for liquidtight flexible metal conduit fittings

01 Series 5331; Series 5231AL liquidtight flexible metal conduit fittings

02 Series 5262 sealing gasket

03 Series 3321 PVC-coated liquidtight flexible metal conduit fittings

04 Series 41 liquidtight union

05 5331GR Series external bonding

06 5331-PT Series Quick-Connect™ liquidtight fittings

- Liquidtight flexible metal conduit used shall be of the type with galvanized steel core inside and outside and outer thermoplastic jacket suitable for the ambient environmental conditions. Jacket shall be positively locked to core to prevent sleeving. Where used as an equipment grounding conductor, the conduit shall conform to applicable standards UL 360/CSA C22.2 No. 56.
- Flexible conduit when installed shall have sufficient slack to avoid sharp flexing and straining due to vibration and thermal expansion/ constriction. Conduit shall be installed in such a manner that liquids will tend to run off the surface instead of draining toward the fittings.
- Where liquidtight flexible metal conduit terminates into a threaded or threadless opening, the conduit shall be assembled with approved liquidtight fittings. Fittings used shall be reusable type of malleable iron/steel construction, electrozinc plated inside and outside, furnished with nylon-insulated throat and taper-threaded hub as manufactured by ABB, series 5331.

Approved fittings installed shall be:

- (1) Designed to prevent sleeving, assure plastic (raceway jacket) to plastic (gasket) seal.
- (2) Equipped with grounding device to assure ground continuity irrespective of raceway core construction. Grounding device if inserted into raceway and directly in contact with conductors shall have rolled over edges for sizes under 5 inches.

- At the point of flexing (i.e. where raceway leaves fitting), the thermoplastic raceway jacket shall not be permitted to be in direct contact with metal.
- Where liquidtight flexible metal conduit is terminated into a threadless opening using a threaded hub fitting such as series 5331, a suitable moisture-resistant/oil-resistant synthetic rubber gasket such as series 5262 shall be provided between the outside of box or enclosure and fitting shoulder. Gasket shall be adequately protected by and permanently bonded to a metallic retainer.
- Where liquidtight flexible metallic raceway is installed in outdoor or indoor locations and is exposed to environmental conditions that are more than normally corrosive to exposed surfaces, PVC-coated liquidtight flexible metal conduit fittings such as series 3321 manufactured by ABB shall be used. Fittings shall be coated with a nominal thickness of 0.040 inches PVC and must meet the general requirements for liquidtight flexible metal conduit fittings indicated above.
- Liquidtight fittings required to couple threaded end of a fitting or pipe where rotation of fitting or pipe is limited or restricted shall be reusable type of malleable iron/steel construction, electro-zinc plated inside/outside with taper-threaded hub as manufactured by ABB, series 41. Fittings shall be equipped with a moisture-resistant/oil-resistant synthetic rubber gasket. Metal-to-metal seal or metal-to-thermoplastic seal for this application shall be considered unacceptable.





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Liquidtight flexible metal conduit fittings Specifications

— 01 5361 Series CHASE style

02 5331 Series 5231 AL series

— 03 5361 Series

— 04 5271 Series

04 5271 Series









_____ 01

01



Application

- Used where flexible metal raceway is installed in outdoor or indoor locations where exposed to continuous or intermittent moisture
- To positively bond conduit to box or enclosure

Features

- Ability to install quickly with low torque effort
- Ground cone design offers following advantages:
- Compresses metallic convolutions; provides high quality ground contact with low impedance and high raceway holding power (A)
- (2) Single helical thread on ground cone is easy to install without cross threading; accepts variations in raceway diameters and convolution pitch (B)
- (3) Rolled over edge protects conductors (C)

Sealing ring design has following exclusive features:

- Grips and seals at leading and trailing edge will not abrade raceway jacket (D)
- (2) Provided with grooves on inside diameter for anti-sleeving (E)
- (3) Shoulders on both ends for extra sealing (F)
- (4) Symmetrical shape assures foolproof assembly
- Can be disconnected and reused
- Watertight/oil-tight installation at box or enclosure termination is assured by:
- (1) External taper-thread hub on 5331 series and use of sealing gasket 5262 series (G)
- (2) Captive sealing O-ring on 5361 series (H)(3) Taper-tapped hole on 5271 series
- For hazardous location applications, please refer to CEC Section 18
- CEC Rule 12-1306 stipulates "a separate bonding conductor shall be installed in liquidtight flexible conduit in accordance with section 10"
- ½ in. and 1¼ in. sizes laboratory tested to carry ground fault current of up to 1000 amps RMS with duration of fault current 3 cycles

- Conforms with JIC requirements
- Available with imperial, ISO and PG threaded hub

Standard material 5331-5361-5271 Series

- Body, gland, locknut and ground cones: All steel or malleable iron
- Sealing ring and insulator: All thermoplastic rated min. -20 °C max. 105 °C
- Sealing gasket: Stainless steel and Buna N

5231 AL Series

All copper-free aluminum (non-insulated)

Standard finish

5331-5361-5271 Series

Electro zinc plated and chromate coated

5231 AL Series

Copper-free aluminum

Range

- 5331 Series 3% in. through 6 in. conduit
- 5341 Series 3% in. through 4 in. conduit
- 5351 Series ¾ in. through 4 in. conduit
- 5361 Series 3% in. through 4 in. conduit
- 5271 Series ¾ in. through 1-¼ in. conduit
- 5231 AL Series ¾ in. through 4 in. conduit All hubs provided with taper pipe threads (NPT)

Conformity

- UL 514B
- CSA C22.2 No. 18.3
- NEMA FB-1
- NFPA 70-2008 (ANSI)
- JIC EGP1, JIC EMP1
- Federal Specification W-F-406
- Federal standard H-28 (Threads)







5351 Series... same as 5331, except 90° fittings

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High temperature flexible metal liquidtight fittings



HT series liquidtight fittings are available straight, 45° and 90°

Suggested specification

Where liquidtight flexible metal fittings are required in high temperature environments up to 150 °C:

- Fitting's body, gland, locknut and ground cone shall be constructed from steel or malleable iron, electro-zinc plated and chromate coated for corrosion protection
- Fitting's sealing ring and throat insulator will be molded from high temperature nylon suitable for temperatures up to 150 °C and a minimum UL flammability rating of UL94V-2
- The fitting shall be constructed to accept high temperature flexible metal liquidtight conduit rated to 150 °C (works with our ATX series conduit)
- The fitting shall have a plastic throat insulator to protect conductors

- The fitting shall have a steel ground cone to:
- provide high quality ground contact
- single helical thread for easy installation into conduit
- rolled over edge to protect conductors
- The fitting shall have a plastic sealing ring to:
- grip and seal at leading and trailing edge (double bevel up to 2 in.) of conduit jacket
- provide a watertight/oil-tight seal
- The fitting shall be able to terminate the conduit in either a threaded or threadless opening
- For applications where termination into a threaded opening is required, the fitting shall have external tapered NPT threads
- For applications where termination into a threadless opening is required, use an acceptable sealing ring
- Fittings shall conform to UL 514B
- Accepted manufacturers: ABB – 5331-HT straight series, 5341-HT 45° series, 5351-HT 90° series; 5262 sealing ring series

Straight liquidtight fittings

Dime		Conduit	
	Α	size (in.)	Cat. no.
1	15⁄32	3⁄8	5331-HT
1	1%	1/2	5332-HT
1	1 ²¹ /32	3⁄4	5333-HT
2	11/8	1	5334-HT
2	2 % 32	11⁄4	5335-HT
21	2 22/32	11/2	5336-HT
3	3¼	2	5337-HT
4	3¾	21/2	5338-HT
4	41/2	3	5339-HT
4	5½	4	5340-HT

Please note: There are no CSA or UL standards applicable for high temperature fittings or conduit.

Therefore neither HT fittings nor HT conduit bear these certifications/listings.



45° liquidtight fittings

ns (in.)	Dimensior	Conduit Dir			
с	в	Α	size (in.)	Cat. no.	
9⁄16	1%16	15/32	3⁄8	5341HT	
9⁄16	11⁄8	13⁄8	1/2	5342HT	
9⁄16	21/8	1 ^{21/} 32	3⁄4	5343HT	
3⁄4	21⁄4	11/8	1	5344HT	
¹³ /16	23⁄4	2%2	11⁄4	5345HT	
¹³ /16	23/8	2 22/32	11/2	5346HT	
7∕8	31/8	31⁄4	2	5347HT	

90° liquidtight fittings

ns (in.)	Dimensior		Conduit		
с	В	Α	size (in.)	Cat. no.	
9⁄16	13⁄8	15⁄32	3⁄8	5351HT	
9⁄16	1%16	1 ¾	1/2	5352HT	
9⁄16	1¾	1 ²¹ /32	3⁄4	5353HT	
3⁄4	2 ³⁄16	11/8	1	5354HT	
¹³ /16	2¾	2 % 32	11⁄4	5355HT	
¹³ /16	2 15⁄16	2 22/32	11/2	5356HT	
7⁄8	31⁄16	3¼	2	5357HT	





For control and power cable applications



	Hub	Conduit			Dimensions (in.)
Cat. no.	size (in.)	size (in.)	Α	В	c
5229*	1/4	1/4	27 _{/32}	13/8	15/32
5330*	3/8	⁵ ⁄16	⁶³ / ₆₄	13/8	¹⁵ ⁄32

* UL and CSA not applicable



Steel, malleable iron or aluminum tapered hub threads. With Safe-Edge[™] ground cone through 4 in. and double bevel sealing ring through 2 in.

Straight fittings



	Cat. no.	Cat. no.				Dimensions (i			
	Insulated	Non-insulated	Aluminum	size (in.)	Α	В	С		
Diagram	5331**	5231	5231AL	3/8	15/32	11/2	9⁄16		
K ≪ R ►	5332	5232	5232AL	1/2	13⁄8	1%16	9⁄16		
	5333	5233	5233AL	3⁄4	1 ²¹ /32	15⁄8	9⁄16		
	5334 - TB	5234-TB	5234AL	1	11/8	2 1⁄16	²⁷ /32		
	5335	5235	5235AL	11⁄4	2 ³/32	21/2	¹³ ⁄16		
	5336+	5236	5236AL	11/2	2 23/32	2 11/16	¹³ ⁄16		
	5337+	5237	5237AL	2	3¼	3 1⁄16	7⁄8		
	5338+	5238	5238AL	21/2	3¾	4 ½	1		
	5339+	5239	5239AL	3	41/2	4¼	1		
	5340+	5240	5240AL	4	51/2	41/2	11/8		
	5385*+	5285*		5	8¾	7	1 %		
	5386*+	_	_	6	8¾	81⁄2	2		

** ¾ in. conduit fitting has ½ in. hub

UL Listed liquidtight; and CSA Certified watertight

* Not CSA Certified

+ Malleable Iron

For control and power cable applications



45° Angle fittings*

Malleable iron, tapered hub threads. With Safe-Edge ground cone through 4 in. and double bevel sealing ring through 2 in.



	Cat. no.				Dime	Dimensions (in.)
	Insulated	Non-insulated	Size (in.)	Α	В	С
Diagram	5341**	5241	3⁄8	15/32	1%16	9⁄16
∢ — в — >	5342	5242	1/2	1¾	11/8	9⁄16
	5343	5243	3⁄4	1 ²¹ /32	2 1/8	9⁄16
	5344	5244	1	11⁄8	21⁄4	3⁄4
	> 5345	5245	1¼	2%32	23⁄4	13⁄16
	5346	5246	11/2	2 ²³ / ₃₂	33/8	13⁄16
	5347	5247	2	3¼	37⁄8	7⁄8
	5348	5248	21/2	3¾	4 ¼	1
	5349	5249	3	41/2	4¼	1
	5350	5250	4	5 ½	4 5%	1 ½
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** % in. conduit fitting has ½ in. hub

UL Listed liquidtight; and CSA Certified watertight For wiremesh grips refer to page B120



90° angle fittings

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	Cat. no.	Cat. no.				Dimensions (in.)		
	Insulated	Non- insulated	Aluminum	Hub size (in.)	Conduit size (in.)	А	В	с
Diagram	5351	5251	5251AL	3⁄8	3⁄8	15/32	13/8	9⁄16
	5352	5252	5252AL	1/2	1/2	1 ¾	1 % 16	9⁄16
	5353	5253	5253AL	3⁄4	3⁄4	1 ²¹ /32	1¾	9⁄16
	5354	5254	5254AL	1	1	11/8	2 ³⁄16	3⁄4
	5355	5255	5255AL	11⁄4	1¼	2 % 2	2¾	¹³ /16
	5356	5256	5256AL	11/2	11/2	2 23/32	2 15⁄16	¹³ /16
	5357	5257	5257AL	2	2	3¼	3 7⁄16	7⁄8
C C	5358	5258	5258AL*	21/2	21/2	3¾	81⁄8	1
	5359	5259	_	3	3	41⁄2	10¼	1
	5360	5260	_	4	4	5 ½	125⁄8	11/8

For hazardous location applications, please refer to CEC Section 18.

UL Listed liquidtight; and CSA Certified watertight

* Not CSA Certified

Wiremesh grips for liquidtight conduit fittings



Prevents severe conduit bends and pullout.

Wiremesh grips for liquidtight fittings



	Conduit		Liquidt	ight fittings		90°	
Cat. no.	size (in.)	Straight	45°	90°	CHASE	CHASE	Adapter
WMG-LT1	3/8	5331	5341	5351	5361	5371	5271
WMG-LT2	1/2	5332	5342	5352	5362	5372	5272
WMG-LT3	3⁄4	5333	5343	5353	5363	5373	5273
WMG-LT4	1	5334-TB	5344	5354	5364	5374	5274
WMG-LT5	11⁄4	5335	5345	5355	5365	—	5275
WMG-LT6	11/2	5336	5346	5356	5366	—	5276
WMG-LT7	2	5337	5347	5357	5367	—	5277
WMG-LT8	21/2	5338	5348	5358	5368	_	5278
WMG-LT9	3	5339	5349	5359	5369	—	
WMG-LT10	4	5340	5350	5360	5370	—	

Order wiremesh grip separately: no need to duplicate inventory

Stainless steel

01 5262 series Sealing ring gasket sold separately

The strength of steel – with superior corrosion-resistance.

Until now, there's been no ideal conduit fitting solution for use in heavily corrosive environments. Traditional metallic fittings corrode and require frequent replacement. Nonmetallic fittings offer less strength, lower UV-resistance and don't stand up well in extreme temperatures. Stainless steel liquidtight conduit connectors are constructed of 304 stainless steel to resist corrosion while offering high strength, high UV-resistance and high endurance. Choose among

a full range of fittings in straight, 45° and 90° angled configurations for ¾ in. to 2 in. conduit sizes. Look for the distinctive blue insulator and sealing ring for assurance of ABB quality.

01

• Ideal for industrial MRO and OEM applications in food and beverage, pharmaceutical, petrochemical, waste water, salt water and other corrosive environments

- Connects metallic-cored liquidtight conduit to a box or enclosure
- 304 stainless steel body and gland-nut resists corrosion far better than other metallic fittings
- Stronger, more UV-resistant than nonmetallic fittings
- Available in straight, 45° and 90° angled configurations to fit conduit from % in. to 2 in.
- UL Listed ratings: 3, 3R, 4, 4X
- 5262 Sealing ring gasket (sold separately) includes a stainless steel retaining ring to prevent elongation of the gasket and is made from Santoprene[™] material, ensuring a superior seal

Liquidtight conduit fittings – Stainless steel

	Size		Dimensi	ons (in.)	Std. pkg.
Cat. no.	(in.)	Α	В	С	qty.
Straight					
5331SST *	3⁄8	1.360	1.02	-	25
5332 SST	1/2	1.360	1.18	-	25
5333 SST	3⁄4	1.388	1.37	-	25
5334 SS T	1	1.562	1.77	-	5
5335 SST	1¼	1.720	2.12	-	20
5336 SST	11/2	2.020	2.48	-	5
5337SST	2	2.335	3.04	-	2
45° Angled					
5341SST *	3⁄8	1.84	1.02	1.43	25
5342SST	1/2	1.62	1.18	2.04	25
5343SST	3⁄4	2.32	1.37	1.93	10
5344SST	1	2.86	1.77	2.37	5
5345 SST	1¼	3.33	2.12	2.80	5
5346SST	11/2	3.94	2.48	3.39	2
5347SST	2	4.73	3.04	4.23	1

	Size		Std. pkg.		
Cat. no.	(in.)	Α	В	с	qty.
90° Angled					
5351SST *	3⁄8	1.95	1.02	1.84	25
5352 SS T	1/2	2.12	1.18	2.07	25
5353SST	3⁄4	2.47	1.37	2.44	10
5354SST	1	2.98	1.77	2.90	5
5355 SST	1¼	3.53	2.12	3.36	5
5356SST	11/2	4.16	2.48	3.88	2
5357 SST	2	8.60	3.04	4.69	1
Sealing gasket					
5261	3⁄8	_	_	_	50
5262	1/2	-	-	_	50
5263	3⁄4	-	-	_	25
5264	1	-	-	-	25
5265	11⁄4	-	-	-	5
5266	11/2	-	-	-	5
5267	2	_	_	_	5

Locknut not included * % in. conduit fitting

has % in. hub



Diagrams









Quick-Connect fittings

Quick-Connect liquidtight fittings. Push. Tighten. Done.

The quality of the Liquidtight Systems fitting in a labour-saving Quick-Connect fitting. Innovative push-in technology with a captive sealing ring makes it installation-ready.

Flexible conduit is used in a wide variety of challenging environments. You need fittings to match. That's why ABB offers four different liquidtight lines, including our new time-saving, Quick-Connect fittings.



- Ideal for any industrial MRO or OEM application where high performance is required
- Often used in food and beverage, wastewater and chemical processing industries
- Each liquidtight fitting is designed to exceed expectations
- Simple installation and worry-free connections

Standard material/finish

Gland nut, ground cone, body, locknut: Steel Finish: Zinc plated and coated Sealing ring, insulator: Nylon Temp. rating: 105 °C





Quick-Connect liquidtight fittings



	Cat. no.		Trade size		Dimensions (in.)		Inner	Outer
	Non-insulated	Insulated	(in.)	Material	Α	В	pack	pack
	Straight fittings							
Diagram	5231-PT	5331-PT	3⁄8	Zinc-plated steel	15/32	15/16	25	100
	5232-PT	5332-PT	1/2	Zinc-plated steel	13⁄8	1	25	100
	5233-PT	5333-PT	3⁄4	Zinc-plated steel	1 ²¹ /32	1 ½ 16	25	50
i UMHA	5234-PT	5334-PT	1	Zinc-plated steel	11⁄8	1 5⁄16	10	50

	45° fittings							
Diagram	5241-PT	5341-PT	3⁄8	Malleable iron	15/32	1	25	50
	5242-PT	5342-PT	1/2	Malleable iron	1 ¾	1 5⁄16	25	50
	5243-PT	5343-PT	3⁄4	Malleable iron	1 ²¹ /32	1 %16	10	50
	5244-PT	5344-PT	1	Malleable iron	11/8	11/2	5	25

	90° fittings							
Diagram	5251-PT	5351-PT	3⁄8	Malleable iron	15/32	13/16	25	50
	5252-PT	5352-PT	1/2	Malleable iron	13/8	11⁄16	25	50
	5253-PT	5353-PT	3⁄4	Malleable iron	1 ²¹ /32	1¾	10	50
	5254-PT	5354-PT	1	Malleable iron	11/8	1 ¹⁵ ⁄32	5	25

Liquidtight-to-rigid adapters and CHASE fittings

Liquidtight adapter to connect liquidtight to threaded rigid conduit

		Conduit size			Dimensions (in.)	Std.
	Cat. no.	(in.)	Α	В	С	pkg.
в	5271	3/8	15/32	1%16	13⁄8	50
	5272	1/2	13⁄8	111/16	13⁄8	50
	5273	3⁄4	1 ²¹ /32	1¾	13⁄8	50
	5274	1	11/8	2 ½	13⁄8	25
	5275	1¼	2%32	21/2	13⁄8	25
	5276	11/2	2 3⁄4	2 ¹¹ /16	13⁄8	10
	5277	2	3 15/32	31/16	13⁄8	5
	-					

With Safe-Edge ground cone and double bevel sealing ring (through 2 in.) For Hazardous Location applications, please refer to CEC Section 18.

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Nylon-insulated CHASE fittings – Steel or malleable iron

		Conduit size			Dimensions (in.)	Std.
	Cat. no.	(in.)	А	В	С	pkg.
	5361	3⁄8	13/32	13/8	1/8	100
	5362	1/2	1 3/8	13/8	3⁄16	100
	5363	3⁄4	1 ¹¹ /16	15/8	1/4	50
	5364	1	2 1/32	2 ½ 16	1/4	25
	5365	11⁄4	23⁄8	2 3/8	5⁄16	25
	5366	11/2	2 15/16	2 3 ⁄4	3⁄8	10
	5367	2	2 % 16	3	3/8	5
	5368	21⁄2	4 ¾	3 15⁄16	7/16	5
	5369	3	5 ½	4 ¹ /8	1/2	5
	5370	4	5 ½	4 ¾	1/2	5

With Safe-Edge ground cone and double bevel sealing ring (through 2 in.)

Note: UL Listed liquidtight; and CSA certified watertight

For hazardous location applications, please refer to CEC Section 18.

Nylon-insulated 90° angle CHASE connectors

		Conduit size			Dimensions (in.)
	Cat. no.	(in.)	Α	В	c
Diagram	5371 [†]	3/8	11/32	11/2	3⁄16
← в →	5372 [†]	1/2	1 ¹⁵ ⁄64	115/32	3⁄16
	5373 [†]	3/4	1 ³¹ ⁄64	11/8	9⁄32
	5374 [†]	1	1 ²³ /32	244	11/32

With Safe-Edge ground cone and double bevel sealing ring

Malleable iron

Note: UL Listed liquidtight; and CSA certified watertight. Suitable for hazardous locations use in Class I, Div. 2; Class II, Div. 1 and 2; Class III, Div. 1 and 2, where general purpose equipment is specifically permitted per NEC Section 500-2(a).

† UL Listed as grounding means under NEC 351-7.

Specifications – External bonding

Application

- Used where external bonding jumper is required around liquidtight flexible metal conduit
- To positively bond conduit to box or enclosure
- Used where flexible raceway is installed in outdoor or indoor locations where exposed to continuous or intermittent moisture

Features

- Designed with provision to install bonding jumper in several positions
- Designed to accept mechanical or compression lug
- Ability to install quickly with low torque effort
 - (i) Compresses metallic convolutions; assures ground contact with low impedance and high raceway holding power (A)
 - (ii) Single helical thread on ground cone is easy to install without cross threading; accepts variations in raceway diameters and convolution pitch (B)
 - (iii) Rolled over edge protects conductors (C)
- Sealing ring design has following exclusive features:
 - (i) Grips and seals at leading and trailing edge will not abrade raceway jacket (D)
 - (ii) Provided with grooves on inside diameter for anti-sleeving (E)
 - (iii) Shoulders on both ends for extra sealing (F)
 - (iv) Symmetrical shape assures foolproof assembly
- Can be disconnected and reused
- Watertight/oil-tight installation at box
 - or enclosure termination is assured by:
 - 1. External taper thread hub on 5331GR series and use of sealing gasket 5262 series (G)
 - 2. Taper-tapped hole on 5271 series
- For hazardous location applications, please refer to CEC Section 18
- Conforms with JIC requirements
- CEC Rule 12-1306 stipulates "a separate bonding conductor shall be installed in liquidtight flexible conduit in accordance with Section 10"
- CEC Rule 10-618 (3): "The armour of flexible metal conduit and liquidtight flexible metal conduit shall not be considered as fulfilling the requirements of a bonding conductor for the purposes of this rule, and a separate bonding conductor shall be run within the conduit."

Standard material

- Lugs: High conductivity copper (for copper conductor only)
- Body, gland, locknut and ground cones: All steel or malleable iron
- Sealing ring and insulator: All thermoplastic
- Sealing gasket: Stainless steel and Buna N
- Strap: Steel
- Standard finish: All electro zinc plated and chromate coated except lugs
- Lugs: Bright dipped

Range

- 5331GR Series (straight fittings with male hub):
 % in. through 6 in. conduit
- 5341GR Series (45°): 3/8 in. through 4 in. conduit
- 5351GR Series (90°): 36 in. through 4 in. conduit
- 5271GR Series (straight fittings with female hub):
 ³/₈ in. through 1¼ in conduit
- All hubs provided with taper pipe threads (NPT)

Conformity

- UL 467
- UL 514B
- CSA C22.2 No. 18.3
- CSA C22.2 No. 41
- NEMA FB-1
- NFPA 70-2008 (ANSI)
- JIC EGP1
- JIC EMP1
- Federal Specification W-F-406
- Federal Standard H-28 (threads)

Specifications – External bonding

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01Series 5331GR

02Series 5271GR

03 Sleeving Raceway jacket pulls off – exposing core and affecting liquidtight termination. Feature (E) on sealing ring helps overcome this problem.







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02

Grounding fittings

Malleable iron, tapered hub threads.

	Cat. no.			0		Dimensi	ons (in.)	Ground
	Steel insulated	Steel non-insulated	Aluminum non-insulated	Conduit size (in.)	А	В	с	wire (AWG)
-	5331GR**	5231GR	5231ALGR*	3/8	15/32	11/2	9⁄16	14-8
	5332GR	5232GR	5232ALGR*	1/2	13⁄8	1%16	9⁄16	14-8
	5333GR	5233GR	5233ALGR*	3⁄4	1 ²¹ /32	15⁄8	9⁄16	14-4
	5334GR	5234GR	5234ALGR*	1	11⁄8	2 1⁄16	3⁄4	14-4
Ă A A A A A A A A A A A A A A A A A A A	5335GR	5235GR	_	11⁄4	21⁄4	21/2	¹³ / ₁₆	8-1/0
	5336GR	5236GR	_	11/2	3 ½	2 11⁄16	¹³ ⁄16	4-2/0
	5337GR	5237GR	_	2	3 13⁄16	31⁄16	7∕8	4-2/0
	5338GR	5238GR	_	21/2	41⁄16	4 ½	1	2-4/0
	5339GR	5239GR	_	3	5 ¾ 16	4¼	1	2-4/0
∢ В →→	5340GR	5240GR	_	4	6 ½	41/2	1 ½	2-4/0
	5385GR	5285GR	_	5	8%16	7	11/8	2-4/0
	5386GR	_	-	6	817/32	81⁄2	2	2-4/0

* Not CSA Certified ** % in. conduit fittings have ½ in. trade size hub. With Safe-Edge ground cone (through 4 in.) and double bevel sealing ring (through 2 in.).

Malleable iron, tapered hub threads.

45° Angle grounding fittings

		Cat. no.				Dimens	ions (in.)	Ground
		Steel insulated	Steel non-insulated	Conduit size (in.)	Α	В	с	wire (AWG)
		5341GR**	5241GR**	3/8	15/32	1%16	9⁄16	14-8
A Gro	ound	5342GR	5242GR	1/2	1 %	1 %	9⁄16	14-8
wi	re	5343GR	5243GR	3/4	1 ²¹ /32	2 1⁄8	⁹ ⁄16	14-4
		5344GR	5244GR	1	11/8	21⁄4	3⁄4	14-4
	Y .	5345GR	5245GR	11/4	21⁄4	2¾	¹³ ⁄16	8-1/0
	$\mathbf{\tilde{\mathbf{x}}}$	5346GR	5246GR	11/2	3¼	3%	¹³ / ₁₆	4-2/0
в		5347GR	5247GR	2	3 13⁄16	31⁄8	7⁄8	4-2/0
	2	5348GR	5248GR	21/2	41⁄16	4¼	1	2-4/0
Max	«.	5349GR	5249GR	3	5 ¾16	4¼	1	2-4/0
 over 	r ribs	5350GR	5250GR	4	6 ½	4%	11/8	2-4/0

** % in. conduit fittings have ½ in. trade size hub. With Safe-Edge ground cone (through 4 in.) and double bevel sealing ring (through 2 in.).

(SP) (VL)

Grounding fittings

Malleable iron, tapered hub threads.

	Cat. no.					Dimensi	ons (in.)	Ground
	Steel insulated	Steel non-insulated	Aluminum non-insulated	Conduit size (in.)	А	В	с	wire (AWG)
0	5351GR**	5251GR**	5251ALGR*	3/8	15/32	11⁄4	9⁄16	14-8
Ground v	vire 5352GR	5252GR	5252ALGR*	1/2	13⁄8	1 ½ 6	9⁄16	14-8
A	5353GR	5253GR	5253ALGR*	3⁄4	1 ²¹ /32	113/16	9⁄16	14-4
	5354GR	5254GR	5254ALGR*	1	11/8	2 1⁄16	3⁄4	14-4
	5355GR	5255GR	-	11⁄4	21⁄4	21/2	¹³ ⁄16	8-1/0
	5356GR	5256GR	-	11/2	3¼	215⁄16	¹³ ⁄16	4-2/0
	5357GR	5257GR	-	2	3 13⁄16	37⁄16	7∕8	4-2/0
C C	5358GR	5258GR	_	21/2	41⁄16	81⁄8	1	2-4/0
B	5359GR	5259GR	-	3	5 ¾ 16	10¼	1	2-4/0
Ma rib	x. over 5360GR	5260GR	-	4	6 ½	12 5⁄8	1 ½	2-4/0

* Not CSA Certified ** ¾ in. conduit fittings have ¼ in. trade size hub. With Safe-Edge ground cone (through 4 in.) and double bevel sealing ring (through 2 in.).

Grounding fittings

— External grounding strap		Includes	s strap, nut and bolt.	
	Cat. no.	Conduit size (in.)	A Swing radius (in.)	B Bolt size
Diagram	GR1W	3/8	1	10–24
Swing	B GR2W	1/2	11/16	10–24
radius A	GR3W	3/4	13⁄8	¹⁄ 4−20
	GR4W	1	11/2	1 ⁄4–20
	GR5W	1¼	1%	⁵⁄16 −18

For retrofit applications.

Liquidtight to rigid external g	round adaptor				
	Cat. no.	Conduit size (in.)	A Overall length (in.)	B Bolt size	C Lug range (AWG)
Diagram B	5271GR*	3/8	115/32	10-24	14-8
bolt size	5272GR	1/2	13⁄8	10–24	14-8
с 🎽	5273GR	3/4	1 ²¹ / ₃₂	1 ⁄4-20	14-4
lug range	5274GR	1	11/8	1 ⁄4-20	14-4
	5275GR	11⁄4	21/4	5⁄16 –18	8-1/0
	5276GR	1¼	2 ²⁹ / ₃₂	¾− 16	8–1/0

* ¾ in. conduit fittings have ½ in. trade size hub

Revolver™	grounding	device
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Cat. no.	size (in.)
38GR-TB	3/8
12GR-TB	1/2
34GR-TB	3/4
1GR-TB	1

The grounding device is a combination of a set screw and a grounding lug that can be used to retrofit any existing liquidtight fitting to an externally grounded version.