



Roxtec BG™ sealing solutions

– for bonding and grounding of cables

Intended applications

The Roxtec BG™ product family is designed to safely and efficiently bond or ground armored and shielded cables through a single cut-out or opening in a wall, floor or electrical enclosure. The product provides a secure means of cable terminations and pass-throughs, provides an environmental and fire resistant seal, and establishes a secure bonding path to ground for metallic cable components. The product is certified for use in hazardous locations where required by local codes and regulations. The Roxtec BG™ system complies with EU directive 2002/95/EC, Restriction of Hazardous Substances (RoHS).

The Roxtec BG™ product line is suitable for use in:

- Oil, gas and petrochemical applications
- Marine
- Nuclear and power generation facilities
- Telecom
- OEM
- Construction

Tests and certifications

The list below includes certifications obtained at the moment for printing this paper. The list is continuously updated, please check www.roxtec.com for the most recent additions. All certifications are valid only for a complete Roxtec system correctly installed according to installation instructions.

Certifying authority	Type of certificate
CSA List file 215242 	ORDINARY LOCATIONS Canadian standards ■ Environmental rating: 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 CAN/CSA 22.2 No.94.2 ■ Bonding and Grounding CAN/CSA 22.2. No. 18.3-04, No. 41-07 US standards ■ Environmental (NEMA) rating: 1, 2, 3, 3R, 3S, 4, 4X, 5, 12, 13 UL 50 ■ Bonding and Grounding UL514B and UL467
	HAZARDOUS LOCATIONS ■ Canada: Ex e IIC ■ USA: AEx e IIC Class I, Zone 1

Certifying authority	Type of certificate
List file R15556 	Firestop device UL 1479
	IECEx Certificate of Conformity EC-type examination certificate (ATEX) - Type of protection: Ex e II Ex tD A21 IP6X ("X" depending on type of frame) - Compliance of standards: EN 60079-0, EN 60079-7, EN 61241-0, EN 61241-1, IEC 60079-0, IEC 60079-7, IEC 61241-0, IEC 61241-1
 DET NORSKE VERITAS	A-class Steel bulkhead/deck. H-class Steel bulkhead/deck.

Current Surge test. Pulse shape 10/350 acc. to IEC 62305-1. 50kA-200kA. Depending on module size and frame type.

Cables

The module is designed for use with a wide variety of cables where the protective armor or shield/screen has to be connected to ground meeting requirements for bonding and grounding in electrical installations. During the test and certification process, the products have been tested with:

- Cables with a circular cross-section such as, wire and braided armored cables (.WA, .WB), smooth metal tubes and foil sheeted cables.
- Continuous welded and interlocking armored cables such as, MC, MC-HL, TECK, AC, ACWU and ACIC.

Roxtec frames

The Roxtec BG™ modules are certified for use with the following Roxtec frames:



For more information about the frames, please see www.roxtec.com or Roxtec product catalogue.

NOTE:

- Applications where the frame is mounted to a non-conductive surface require an additional bonding conductor to ensure continuity to ground.
- CF 8 EMC BG™ and CF 32 EMC BG™ are delivered with compression unit and grounding lug.

Modules for Roxtec BG™ solutions

The Roxtec BG™ sealing modules for bonding and grounding in EMC installations exist in different regular (RM) and compact (CM) versions. They all provide electrical safety and environmental protection as well as adaptability for a perfect fit to cables and pipes with an OD of 3.0-99.0 mm (0.118"-3.898").

Also approved for hazardous locations (Ex).

Roxtec BG™ modules are suitable for pass-through installations where environmental protection is required from both sides.

Roxtec BG™ B modules are suitable for cable terminations.



RM BG™



RM BG™ B



CM BG™ B



RM BG™ Ex

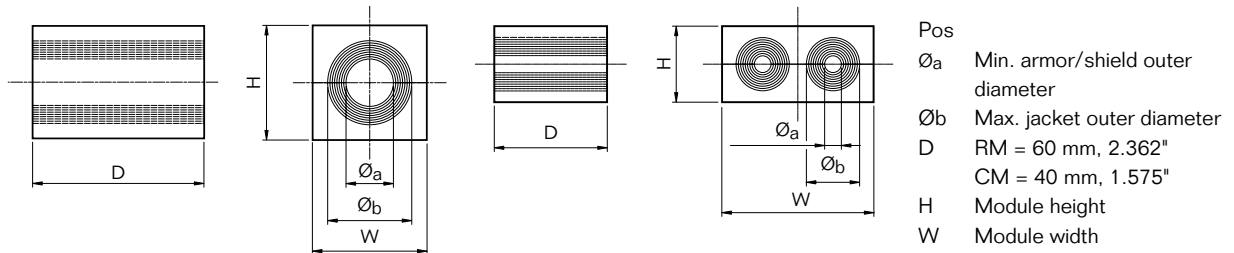


RM BG™ B Ex



CM BG™ B Ex

Dimension references



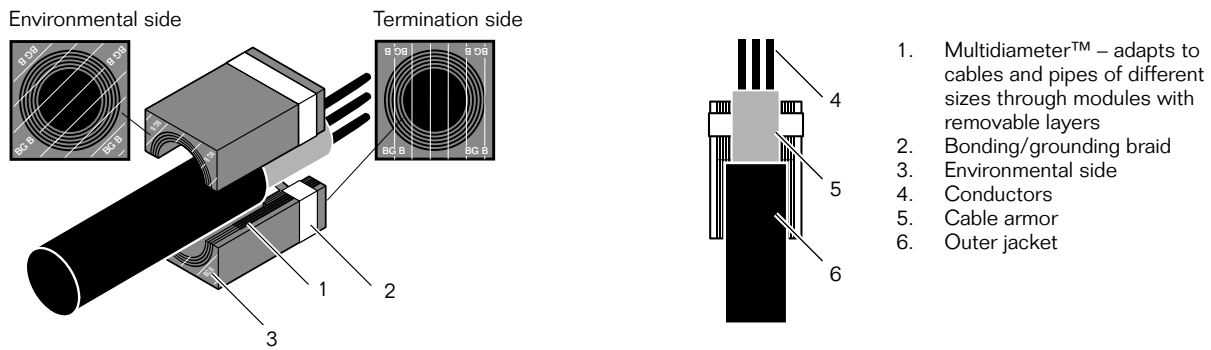
All modules described on the following pages are available in additional sizes. Please contact your local Roxtec representative for information.



Roxtec BG™ B module

The Roxtec BG™ B module has the durable, conductive braid for electrical safety on one side and environmental protection on the other. To be used with Roxtec Group RM or Group CM frames.

Cable position in a BG™ B module



RM BG™ B modules with Multidiameter™

to be used with Roxtec S, SF, G, GO and GH/GHM frames

Module	Approx. cross-sectional braid area, mm ² / Approx. eqv. AWG	Øa-Øb		External dimensions		Article number
		(mm)	(in)	HxW (mm) (D= 60mm)	HxW (in) (D= 2.362")	
RM 20w40 BG B	4*/11	0+3.5-16.5	0+0.138-0.650	20x40	0.787x1.574	103331
RM 30 BG B	13/6	0+10.0-25.0	0+0.394-0.984	30x30	1.181x1.181	103332
RM 40 10-32 BG B	21/4	0+9.5-32.5	0+0.374-1.280	40x40	1.574x1.574	103333
RM 60 24-54 BG B	42/1	0+24.0-54.0	0+0.945-2.126	60x60	2.362x2.362	103336
RM 90 BG B woc	42/1	48.0-71.0	1.890-2.795	90x90	3.543x3.543	103338
RM 120 BG B woc	42/1	67.5-99.0	2.657-3.898	120x120	4.724x4.724	103313

For reference, see Dimension references illustration on previous page.

*The braid area is calculated for each cable entry.

CM BG™ B modules with Multidiameter™ to be used with:

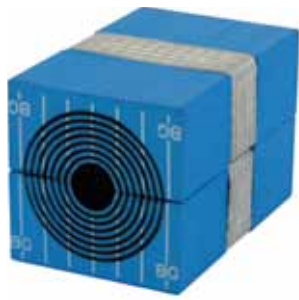
Roxtec CF 8 EMC BG™, article number: 103465

Roxtec CF 32 EMC BG™, article number: 102826

Module	Approx. cross-sectional braid area mm ² / Approx. eqv. AWG	Øa-Øb		External dimensions		Article number
		(mm)	(in)	HxW (mm) (D= 40mm)	HxW (in) (D= 1.575")	
CM 20w40 BG B	4*/11	0+3.5-16.5	0+0.138-0.650	20x40	0.787x1.574	103375
CM 30w40 BG B	13/6	0+10.0-25.0	0+0.394-0.984	30x40	1.181x1.574	103379
CM 40 10-32 BG B	21/4	0+9.5-32.5	0+0.374-1.280	40x40	1.574x1.574	103381

For reference, see Dimension references illustration on previous page.

*The braid area is calculated for each cable entry.

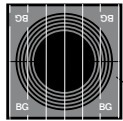


Roxtec RM BG™ module

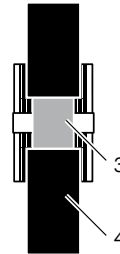
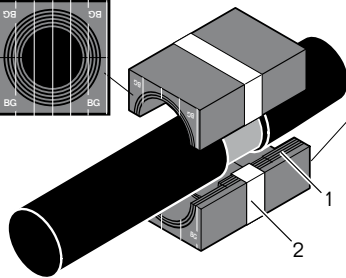
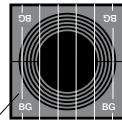
The Roxtec RM BG™ module has the durable, conductive braid for electrical safety in the middle and provides environmental protection at both ends. To be used with Roxtec Group RM frames.

Cable positions in a RM BG™ module

Environmental side



Environmental side



1. Multidiameter™ – adapts to cables and pipes of different sizes through modules with removable layers
2. Bonding/grounding braid
3. Cable armor/shield
4. Outer jacket

RM BG™ modules with Multidiameter™

to be used with Roxtec S, SF, G, GO and GH/GHM frames

Module	Approx. cross-sectional braid area mm ² / Approx. eqv. AWG	Øa-Øb		External dimensions		Article number
		(mm)	(in)	HxW (mm) (D= 60mm)	HxW (in) (D= 2.362")	
RM 20w40 BG	4*/11	0+3.5-16.5	0+0.138-0.650	20x40	0.787x1.574	102416
RM 30 BG	13/6	0+10.0-25.0	0+0.394-0.984	30x30	1.181x1.181	102417
RM 40 10-32 BG	21/4	0+9.5-32.5	0+0.374-1.280	40x40	1.574x1.574	102419
RM 60 24-54 BG	42/1	0+24.0-54.0	0+0.945-2.126	60x60	2.362x2.362	102422
RM 90 woc BG	42/1	48.0-71.0	1.890-2.795	90x90	3.543x3.543	102424
RM 120 woc BG	42/1	67.5-99.0	2.657-3.898	120x120	4.724x4.724	102412

For reference, see Dimension references illustration.

*The braid area is calculated for each cable entry.



Roxtec RM BG™ B Ex module

The Roxtec RM BG™ B Ex module is certified according to the ATEX directive and the IECEx, International Certification Scheme, for use where Ex e classified solutions are required. To be used with Roxtec Group RM Ex frames.

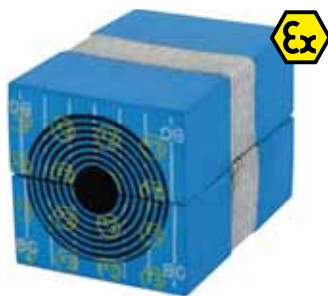
RM BG™ B Ex modules with Multidiameter™

to be used with Roxtec S Ex, SF Ex, SF...W Ex, G Ex, and G...W Ex frames

Module	Approx. cross-sectional braid area, mm²/ Approx. eqv. AWG	Øa-Øb		External dimensions		Article number
		(mm)	(in)	HxW (mm) (D= 60mm)	HxW (in) (D= 2.362")	
RM 20w40 BG B Ex	4*/11	0+3.5-16.5	0+0.138-0.650	20x40	0.787x1.574	102516
RM 30 BG B Ex	13/6	0+10.0-25.0	0+0.394-0.984	30x30	1.181x1.181	102517
RM 40 10-32 BG B Ex	21/4	0+9.5.0-32.5	0+0.374-1.280	40x40	1.574x1.574	102518
RM 60 24-54 BG B Ex	42/1	0+24.0-54.0	0+0.945-2.126	60x60	2.362x2.362	102530
RM 90 BG B Ex woc	42/1	48.0-71.0	1.890-2.795	90x90	3.543x3.543	102534
RM 120 BG B Ex woc	42/1	67.5-99.0	2.657-3.898	120x120	4.724x4.724	102512

For reference, see Dimension references illustration.

*The braid area is calculated for each cable entry.



Rextec RM BG™ Ex module

The Rextec RM BG™ Ex module is certified according to the ATEX directive and the IECEx, International Certification Scheme, for use where Ex e classified solutions are required. To be used with Rextec Group RM Ex frames.

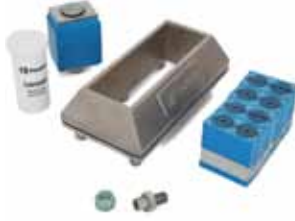
RM BG™ Ex modules with Multidiameter™

to be used with Rextec S Ex, SF Ex, SF...W Ex, G Ex, and G...W Ex frames

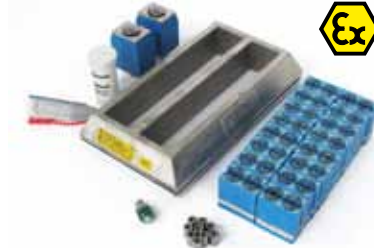
Module	Approx. cross-sectional braid area, mm ² / Approx. eqv. AWG	Øa-Øb		External dimensions		Article number
		(mm)	(in)	HxW (mm) (D= 60mm)	HxW (in) (D= 2.362")	
RM 20w40 BG Ex	4*/11	0+3.5-16.5	0+0.138-0.650	20x40	0.787x1.574	102523
RM 30 BG Ex	13/6	0+10.0-25.0	0+0.394-0.984	30x30	1.181x1.181	102524
RM 40 10-32 BG Ex	21/4	0+9.5-32.5	0+0.374-1.280	40x40	1.574x1.574	102525
RM 60 24-54 BG Ex	42/1	0+24.0-54.0	0+0.945-2.126	60x60	2.362x2.362	102531
RM 90 BG Ex woc	42/1	48.0-71.0	1.890-2.795	90x90	3.543x3.543	102535
RM 120 BG Ex woc	42/1	67.5-99.0	2.657-3.898	120x120	4.724x4.724	102519

For reference, see Dimension references illustration.

*The braid area is calculated for each cable entry.



CF 8/8 BG™ B kit



CF 32/32 BG™ B Ex kit



Kit solutions

In order to simplify planning and logistics, Roxtec CM BG™ B solutions can be delivered as standardized kits. The kits include a full set of components for securing a complete safety rated installation.

Roxtec CF 8 BG™ B kit and Roxtec CF 32 BG™ B kit

Kit	Diameter range and number of cables		External dimensions		Article number
			HxW (mm)	HxW (in)	
	0+3.5-16.5 mm 0+0.138-0.650" (CM 20w40 BG B)	0+9.5-32.5 mm 0+0.374-1.280" (CM 40 10-32 BG B)			
CF 8/8 BG B	8 cables		140 x 75	5.512 x 2.952	103464
CF 32/8 BG B		8 cables	230 x 130	9.055 x 5.118	103462
CF 32/20 BG B	16 cables	4 cables	230 x 130	9.055 x 5.118	103463
CF 32/32 BG B	32 cables		230 x 130	9.055 x 5.118	103461

Roxtec CF 8 BG™ B Ex kit and Roxtec CF 32 BG™ B Ex kit

Kit	Diameter range and number of cables		External dimensions		Article number
			HxW (mm)	HxW (in)	
	0+3.5-16.5 mm 0+0.138-0.650" (CM 20w40 BG B Ex)	0+9.5-32.5 mm 0+0.374-1.280" (CM 40 10-32 BG B Ex)			
CF 8/8 BG B Ex	8 cables		140 x 75	5.512 x 2.952	103591
CF 32/20 BG B Ex	16 cables	4 cables	230 x 130	9.055 x 5.118	103736
CF 32/32 BG B Ex	32 cables		230 x 130	9.055 x 5.118	103737

The kit consists of:

- Frame, CF 8 EMC BG™ or CF 32 EMC BG™ in nickel plated aluminum
- Modules of Roxylon™ with tin-plated copper braid
- Compression units
- Lubricant
- Grounding lug in stainless steel
- Installation instructions

NOTE:

- Anti-short bushings (not included) may be required for metal clad cable terminations. Consult your local authority having jurisdiction.



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