



Conductor Bushings Series 8174


- Explosion protection to
 - CENELEC
 - IEC
- Can be used in Zone 1 and Zone 2
- Current lead-in for Ex d enclosures
- 1 to 72 conductors combined in one current lead-in
- Series
 - screw-in
 - plug-in
- For voltages up to max. 1000 V
- For size conductor up to 70 mm²

STAHL

The conductor bushings are used to provide the wire connection between „flameproof“ enclosures and „increased safety“ enclosures.

The conductors are potted with high-quality, creepage-resistant PU-resin and are thus insulated from the enclosure wall.


Zones 1 & 2

Selection Table									
Version	Conductor size	Conductor quantity	Rated working current I_e at 40 °C	Rated working voltage U_e	Thread size	Thread tightening torque [Nm]	Lead length Ex d / Ex e	Order number	Weight
	[mm ²]	[pcs]					[mm]		kg
 <p>8174/1 Threaded conductor bushing</p> <p>03161E00</p>	0.5	4	7 A	750 V	M 16 x 1.5	15	1000/1000	8174/110-0413-11	0.112
		6	7 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0613-11	0.165
		12	7 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-1213-11	0.315
		24	6 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-2413-11	0.555
		48	4.5 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-4813-11	1.095
		60	4.5 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-6013-11	1.353
	0.75	4	9 A	750 V	M 16 x 1.5	15	1000/1000	8174/110-0401-11	0.136
		6	9 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0601-11	0.201
		8	9 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0801-11	0.253
		12	9 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-1201-11	0.398
		24	7.5 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-2401-11	0.699
		48	5.5 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-4801-11	1.383
	1.5	60	6 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-6001-11	1.713
		2	15 A	750 V	M 16 x 1.5	15	1000/1000	8174/110-0202-11	0.112
		4	15 A	750 V	M 16 x 1.5	15	1000/1000	8174/110-0402-11	0.192
		6	15 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0602-11	0.285
		8	15 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-0802-11	0.395
		12	15 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-1202-11	0.506
		16	13 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-1602-11	0.715
		24	11.5 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-2402-11	1.095
		36	9.5 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-3602-11	1.575
		50	9 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-5002-11	2.153
	2.5	4	20 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0403-11	0.305
		12	19.5 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-1203-11	0.855
		24	15 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-2403-11	1.695
		36	14 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-3603-11	2.493
	4	3	25 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0304-11	0.321
		6	25 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-0604-11	0.627
		18	22 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-1804-11	1.791
	6	3	33 A	750 V	M 24 x 1.5	35	1000/1000	8174/102-0305-11	0.450
		6	33 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-0605-11	0.885
		12	33 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-1205-11	1.755
	10	3	45 A	750 V	M 33 x 1.5	50	1000/1000	8174/103-0306-11	0.753
		4	45 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0406-11	1.039
		6	45 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0606-11	1.491
	16	3	61 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0307-11	1.250
		4	61 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0407-11	1.591
		6	61 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0607-11	2.391
	25	3	83 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0308-11	1.800
		4	83 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-0408-11	2.261
	35	3	103 A	750 V	M 42 x 1.5	50	1000/1000	8174/104-0309-11	2.283
		4	103 A	750 V	M 48 x 1.5	50	1000/1000	8174/105-0409-11	3.017
50	1	132 A	1000 V	M 33 x 1.5	50	1000/1000	8174/103-0110-11	1.300	
	3	132 A	1000 V	M 48 x 1.5	50	1000/1000	8174/105-0310-11	3.813	
70	1	165 A	1000 V	M 33 x 1.5	50	1000/1000	8174/103-0111-11	1.800	

Note Bushings with blue wires to connect intrinsically safe electric circuits are available upon request.




Selection Table

Version	Conductor size	Conductor quantity	Rated working current I_e at 40 °C	Rated working voltage U_e	Thread size	Thread tightening torque [Nm]	Lead length Ex d / Ex e	Order number	Weight
	[mm ²]	[pcs]					[mm]		kg
 8174/1 Threaded conductor bushing 03161E00	4	3	--	750 V	M 33 x 1.5	50	600 / 300	8174/103-0304-0502-69	0.426
	1.5	5							
	4	3	--	750 V	M 33 x 1.5	50	600 / 300	8174/103-0304-0503-69	0.470
	2.5	5							

Note Bushings with blue wires to connect intrinsically safe electric circuits are available upon request.

Selection Table

Version	Conductor size	Conductor quantity	Rated working current I_e at 40 °C	Rated working voltage U_e	Bushing Diameter	Lead length Ex d / Ex e	Order number	Weight
	[mm ²]	[pcs]				[mm]		kg
 8174/2 Plain conductor bushing 03164E00	0.5	12	7 A	750 V	∅ 34	1300/1300	8174/203-1213-33	0.421
		24	6 A	750 V	∅ 34	1300/1300	8174/203-2413-33	0.733
		48	4.5 A	750 V	∅ 41	1300/1300	8174/204-4813-33	1.401
		60	4.5 A	750 V	∅ 48	1300/1300	8174/205-6013-33	1.775
	0.75	4	9 A	750 V	∅ 34	1300/1300	8174/203-0401-33	0.244
		12	9 A	750 V	∅ 34	1300/1300	8174/203-1201-33	0.515
		24	7.5 A	750 V	∅ 34	1300/1300	8174/203-2401-33	0.920
		48	5.5 A	750 V	∅ 41	1300/1300	8174/204-4801-33	1.775
	1.5	60	6 A	750 V	∅ 48	1300/1300	8174/205-6001-33	2.243
		6	15 A	750 V	∅ 34	1300/1300	8174/203-0602-33	0.445
		12	15 A	750 V	∅ 34	1300/1300	8174/203-1202-33	0.733
		24	11.5 A	750 V	∅ 41	1300/1300	8174/204-2402-33	1.401
	2.5	50	9 A	750 V	∅ 48	1300/1300	8174/205-5002-33	2.815
		6	20 A	750 V	∅ 34	1300/1300	8174/203-0603-33	0.616
		12	19.5 A	750 V	∅ 34	1300/1300	8174/203-1203-33	1.150
		24	15 A	750 V	∅ 41	1300/1300	8174/204-2403-33	2.181
	4	6	25 A	750 V	∅ 41	1300/1300	8174/204-0604-33	0.468
		6	25 A	750 V	∅ 34	1300/1300	8174/203-0604-33	0.125
		12	25 A	750 V	∅ 41	1300/1300	8174/204-1204-33	1.588
	6	12	25 A	750 V	∅ 41	1300/1300	8174/204-1204-33	1.588
		3	33 A	750 V	∅ 34	1300/1300	8174/203-0305-33	0.670
		6	33 A	750 V	∅ 34	1300/1300	8174/203-0605-33	1.162
	10	12	33 A	750 V	∅ 41	1300/1300	8174/204-1205-33	2.259
		3	45 A	750 V	∅ 34	1300/1300	8174/203-0306-33	0.991
		4	45 A	750 V	∅ 41	1300/1300	8174/204-0406-33	1.328
	16	6	45 A	750 V	∅ 41	1300/1300	8174/204-0606-33	1.916
		3	61 A	750 V	∅ 41	1300/1300	8174/204-0307-33	0.125
		4	61 A	750 V	∅ 41	1300/1300	8174/204-0407-33	2.046
	25	6	61 A	750 V	∅ 48	1300/1300	8174/205-0607-33	3.066
		3	83 A	750 V	∅ 41	1300/1300	8174/204-0308-33	2.208
		4	83 A	750 V	∅ 48	1300/1300	8174/205-0408-33	2.955
	35	3	103 A	750 V	∅ 48	1300/1300	8174/205-0309-33	1.950
4		103 A	750 V	∅ 48	1300/1300	8174/205-0409-33	3.938	

Note Bushings with blue wires to connect intrinsically safe electric circuits are available upon request.



Technical Data		
Explosion protection	⚠ II 2 G Ex d II ⚠ I M 2 Ex d I	
Certificates	PTB 01 ATEX 1065 U	
Other certificates	IECEx, Canada (CSA), Belarus (Promatomnadzor)	
Material		
Threaded fitting	Brass	
Sealing material	PU-resin	
Bush	Brass	
Rated operational voltage	H07G-K 450/750 V H05G-K 300/500 V S07G-K max. 705 V H05V-K 300/500 V NSGAFöu 1000 V (N)HX4GAF 600/1000 V	
Rated operational current	see diagrams of permissible current	
Conductor		
Size	0.5 mm ² to 70 mm ²	
Series	H07G-K 1.5 mm ² ... 70 mm ² H05G-K 0.5 mm ² ... 1 mm ² S07G-K 0.5 mm ² ... 0.75 mm ² H05V-K 0.5 mm ² ... 1 mm ² NSGAFöu 1.5 mm ² ... 70 mm ² (N)HX4GAF 0.75 mm ² ... 70 mm ²	
Number	max. 72, depends on size and nominal diameter	
Ambient temperature	hard-wired	flexible
	H07G-K - 40 °C ... + 110 °C	- 25 °C ... + 110 °C
	H05G-K - 40 °C ... + 110 °C	- 25 °C ... + 110 °C
	S07G-K - 40 °C ... + 110 °C	- 25 °C ... + 110 °C
	H05V-K - 30 °C ... + 70 °C	- 5 °C ... + 70 °C
	NSGAFöu - 40 °C ... + 80 °C	- 25 °C ... + 80 °C
	(N)HX4GAF - 15 °C ... + 105 °C	- 15 °C ... + 105 °C

Note on Assembly

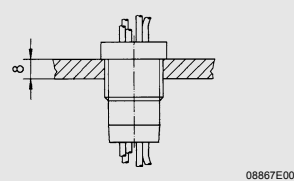


Fig. 1
Threaded conductor bushing
8174/1

Connection of conductors on the Ex e, "increased safety" side of the bush comply with the relevant regulations.

The installation of bushings must meet requirements of IEC/EN 60 079-1. A thread engagement of at least 5 full threads is required (with a pitch of 1,5 mm, 8 mm screw-in depth in the enclosure). The conductor bushings are generally screwed in from the inside of the flameproof enclosure (inverted installation is only possible by using a special lock; upon request). The bushings must be secured against self-loosening by using backing strips or epoxy adhesives (see illustrations 1).

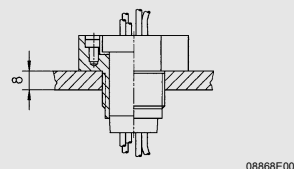
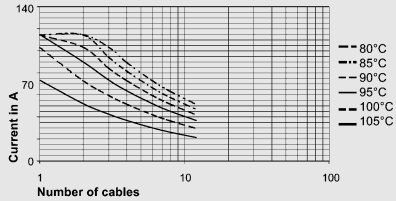


Fig. 2
Plain conductor bushings
8174/2,
fitted into threaded fitting

The plain type bushings can be inserted directly into the corresponding hole drilled in the enclosure. Flameproof sealing is established via a cylindrical gap between enclosure and bushing. Observe the tolerances given in the operation instructions when using this method. The installation is simplified by using a threaded fitting, having the threaded gap on the outside (min. 5 thread turns according to tolerance from ISO 965-1 and ISO 965-3^b) and cylindrical gap on the inside. A flameproof seal is thus ensured (see illustrations 2). The threaded fitting is also secured against self-loosening by using tab strips or adhesive.

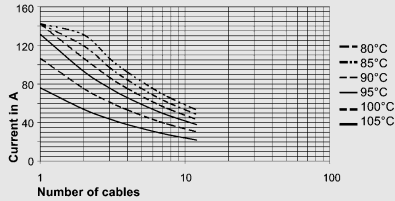
Current Load Diagram (for Bunched Conductors of Various Temperatures)

Current loading of
25mm² cables in M48 x 1,5 / ø48



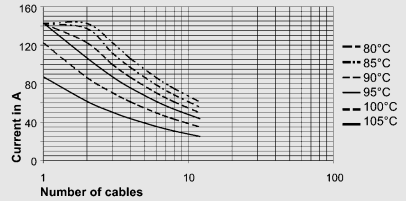
09434E02

Current loading of
35mm² cable in M42 x 1,5 / ø41



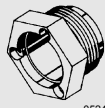




09433E02

Current loading of
35mm² cable in M48 x 1,5 / ø48

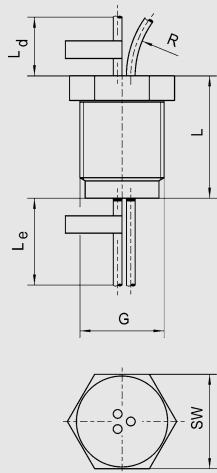


07323E02

Accessories and Spare Parts

Designation	Illustration	Description	Order number	Weight kg		
Threaded fitting	 05243E00	for plain conductor bushings 8174/2	Thread diameter	Thread size		
			Ø 34 mm	M 42 x 1.5	140032	0.156
			Ø 41 mm	M 48 x 1.5	140038	0.184
			Ø 48 mm	M 56 x 1.5	140049	0.276
		Note: screws and washers have to be ordered separately				
Stopping plug	 10003E00	to close up unused thread fittings	Ø 34 mm	M 42 x 1.5	139720	0.267
			Ø 41 mm	M 48 x 1.5	139732	0.267
			Ø 48 mm	M 56 x 1.5	139740	0.267
			Note: screws and washers have to be ordered separately			
Allen screw	 05244E00	M 4 x 6 3 cylinder-head screws are required per stopping plug or threaded fitting	109806	0.002		
Spring washer	 10004E00	M 4 3 spring washers are required per stopping plug or threaded fitting	110596	0.170		
Lock nut	 05865E00	M 16 x 1.5	108368	0.004		
		M 24 x 1.5	108370	0.007		
		M 33 x 1.5	108375	0.036		
		M 42 x 1.5	108378	0.036		
		M 48 x 1.5	108379	0.045		

Dimensional Drawings (All Dimensions in mm) - Subject to Alterations

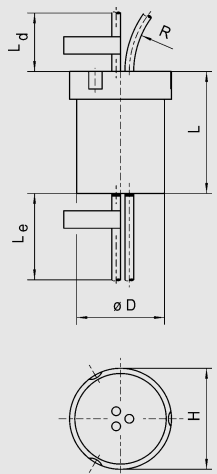


Conductor size	L	R
0.5 mm ² ... 1.5 mm ²	35	9
2.5 mm ²	35	12
4 mm ²	35	15
6 mm ²	35	17
10 mm ²	43	21
16 mm ²	43	28
25 mm ²	43	36
35 mm ²	43	45
50 mm ²	43	74
70 mm ²	43	83

Type	G	SW	Ld / Le
8174/110-....-	M 16 x 1.5	19	1000 / 1000
8174/102-....-	M 24 x 1.5	27	
8174/103-....-	M 33 x 1.5	36	
8174/104-....-	M 42 x 1.5	46	
8174/105-....-	M 48 x 1.5	55	

04546E00

8174/1-....- Threaded conductor bushings

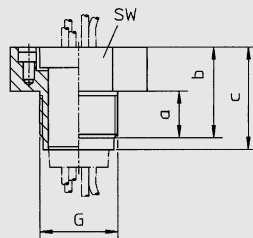


Conductor size	L	R
0.5 mm ² ... 1.5 mm ²	35	9
2.5 mm ²	35	12
4 mm ²	35	15
6 mm ²	35	17
10 mm ²	43	21
16 mm ²	43	28
25 mm ²	43	36
35 mm ²	43	45
50 mm ²	43	74
70 mm ²	43	83

Type	H	D	Ld / Le
8174/203-....-	38	34	1300 / 1300
8174/204-....-	48	41	
8174/205-....-	58	48	

04529E00

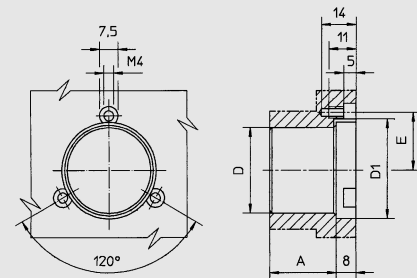
8174/2-....- Plain conductor bushings



04528E00

Essential machining contour in housing wall for plain type conductor bushing

for type	G	SW	a	b	c
8174/203-....	M42 x 1.5	46	16	31	35
8174/204-....	M48 x 1.5	55	16	31	35
8174/205-....	M56 x 1.5	65	16	31	35



04527E00

Threaded fitting for plain type conductor bushing

for type	D	D1	A	E
8174/203-....	34	38.4	27	21.75
8174/204-....	41	48.4	27	26.75
8174/205-....	48	58.4	33	31.75

We reserve the right to make alterations to the technical data, weights, dimensions, designs and products available without notice. The illustrations cannot be considered binding.

