

Conductor Bushings

Series 8174



- > 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

www.stahl.de



03163E00



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.

	ATEX / IECEx					
Zone	0	1	2	20	21	22
For use in		x	x			


E9

WebCode 8174A

Conductor Bushings

Series 8174

Selection Table

Version	Conductor size [mm ²]	Conductor quantity [pcs]	Rated operational current at 40 °C	Rated operational voltage	Thread size	Thread tightening torque [Nm]	Lead length Ex d / Ex e [mm]	Order number	Weight kg
 <p>8174/1 Threaded conductor bushing</p> <p>03161E00</p>	0.5	4	7 A	750 V	M16 x 1.5	15	1000/1000	8174/110-0413-11	0.112
		6	7 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0613-11	0.165
		12	7 A	750 V	M33 x 1.5	50	1000/1000	8174/103-1213-11	0.315
		24	6 A	750 V	M33 x 1.5	50	1000/1000	8174/103-2413-11	0.555
		48	4.5 A	750 V	M42 x 1.5	50	1000/1000	8174/104-4813-11	1.095
		60	4.5 A	750 V	M48 x 1.5	50	1000/1000	8174/105-6013-11	1.353
	0.75	4	9 A	750 V	M16 x 1.5	15	1000/1000	8174/110-0401-11	0.136
		6	9 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0601-11	0.201
		8	9 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0801-11	0.253
		12	9 A	750 V	M33 x 1.5	50	1000/1000	8174/103-1201-11	0.398
		24	7.5 A	750 V	M33 x 1.5	50	1000/1000	8174/103-2401-11	0.699
		48	5.5 A	750 V	M42 x 1.5	50	1000/1000	8174/104-4801-11	1.383
		60	6 A	750 V	M48 x 1.5	50	1000/1000	8174/105-6001-11	1.713
	1.5	2	15 A	750 V	M16 x 1.5	15	1000/1000	8174/110-0202-11	0.112
		4	15 A	750 V	M16 x 1.5	15	1000/1000	8174/110-0402-11	0.192
		6	15 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0602-11	0.285
		8	15 A	750 V	M33 x 1.5	50	1000/1000	8174/103-0802-11	0.395
		12	15 A	750 V	M33 x 1.5	50	1000/1000	8174/103-1202-11	0.506
		16	13 A	750 V	M33 x 1.5	50	1000/1000	8174/103-1602-11	0.715
		24	11.5 A	750 V	M42 x 1.5	50	1000/1000	8174/104-2402-11	1.095
		36	9.5 A	750 V	M42 x 1.5	50	1000/1000	8174/104-3602-11	1.575
		50	9 A	750 V	M48 x 1.5	50	1000/1000	8174/105-5002-11	2.153
		2.5	4	20 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0403-11
	12		19.5 A	750 V	M33 x 1.5	50	1000/1000	8174/103-1203-11	0.855
	24		15 A	750 V	M42 x 1.5	50	1000/1000	8174/104-2403-11	1.695
	36		14 A	750 V	M48 x 1.5	50	1000/1000	8174/105-3603-11	2.493
	4	3	25 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0304-11	0.321
		6	25 A	750 V	M33 x 1.5	50	1000/1000	8174/103-0604-11	0.627
		18	22 A	750 V	M42 x 1.5	50	1000/1000	8174/104-1804-11	1.791
	6	3	33 A	750 V	M24 x 1.5	35	1000/1000	8174/102-0305-11	0.450
		6	33 A	750 V	M33 x 1.5	50	1000/1000	8174/103-0605-11	0.885
		12	33 A	750 V	M42 x 1.5	50	1000/1000	8174/104-1205-11	1.755
	10	3	45 A	750 V	M33 x 1.5	50	1000/1000	8174/103-0306-11	0.753
		4	45 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0406-11	1.039
		6	45 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0606-11	1.491
	16	3	61 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0307-11	1.250
		4	61 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0407-11	1.591
		6	61 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0607-11	2.391
	25	3	83 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0308-11	1.800
		4	83 A	750 V	M48 x 1.5	50	1000/1000	8174/105-0408-11	2.261
	35	3	103 A	750 V	M42 x 1.5	50	1000/1000	8174/104-0309-11	2.283
		4	103 A	750 V	M48 x 1.5	50	1000/1000	8174/105-0409-11	3.017
	50	1	132 A	1000 V	M33 x 1.5	50	1000/1000	8174/103-0110-11	1.300
		3	132 A	1000 V	M48 x 1.5	50	1000/1000	8174/105-0310-11	3.813
	70	1	165 A	1000 V	M33 x 1.5	50	1000/1000	8174/103-0111-11	1.800
	4	3	--	750 V	M33 x 1.5	50	600 / 300	8174/103-0304-0502-69	0.426
		5							
	2.5	3	--	750 V	M33 x 1.5	50	600 / 300	8174/103-0304-0503-69	0.470
5									

Note


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

Conductor Bushings

Series 8174



Selection Table

Version	Conductor size	Conductor quantity	Rated operational current at 40 °C	Rated operational voltage	Bushing Diameter	Lead length Ex d / Ex e	Order number	Weight
	[mm ²]	[pcs]				[mm]		kg
 8174/2 Plain conductor bushing	0.5	12	7 A	750 V	∅ 34	1300/1300	8174/203-1213-33	0.421
	0.5	24	6 A	750 V	∅ 34	1300/1300	8174/203-2413-33	0.733
	0.5	48	4.5 A	750 V	∅ 41	1300/1300	8174/204-4813-33	1.401
	0.5	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
	0.75	12	9 A	750 V	∅ 34	1300/1300	8174/203-1201-33	0.515
	0.75	24	7.5 A	750 V	∅ 34	1300/1300	8174/203-2401-33	0.920
	0.75	48	5.5 A	750 V	∅ 41	1300/1300	8174/204-4801-33	1.775
	0.75	60	6 A	750 V	∅ 48	1300/1300	8174/205-6001-33	2.243
	1.5	6	15 A	750 V	∅ 34	1300/1300	8174/203-0602-33	0.445
	1.5	12	15 A	750 V	∅ 34	1300/1300	8174/203-1202-33	0.733
	1.5	24	11.5 A	750 V	∅ 41	1300/1300	8174/204-2402-33	1.401
	1.5	50	9 A	750 V	∅ 48	1300/1300	8174/205-5002-33	2.815
	2.5	6	20 A	750 V	∅ 34	1300/1300	8174/203-0603-33	0.616
	2.5	12	19.5 A	750 V	∅ 34	1300/1300	8174/203-1203-33	1.150
	2.5	24	15 A	750 V	∅ 41	1300/1300	8174/204-2403-33	2.181
	4	3	25 A	750 V	∅ 34	1300/1300	8174/203-0304-33	0.468
	4	6	25 A	750 V	∅ 34	1300/1300	8174/203-0604-33	0.125
	4	12	25 A	750 V	∅ 41	1300/1300	8174/204-1204-33	1.588
	6	3	33 A	750 V	∅ 34	1300/1300	8174/203-0305-33	0.670
	6	6	33 A	750 V	∅ 34	1300/1300	8174/203-0605-33	1.162
	6	12	33 A	750 V	∅ 41	1300/1300	8174/204-1205-33	2.259
	10	3	45 A	750 V	∅ 34	1300/1300	8174/203-0306-33	0.991
	10	4	45 A	750 V	∅ 41	1300/1300	8174/204-0406-33	1.328
	10	6	45 A	750 V	∅ 41	1300/1300	8174/204-0606-33	1.916
	16	3	61 A	750 V	∅ 41	1300/1300	8174/204-0307-33	0.125
	16	4	61 A	750 V	∅ 41	1300/1300	8174/204-0407-33	2.046
	16	6	61 A	750 V	∅ 48	1300/1300	8174/205-0607-33	3.066
	25	3	83 A	750 V	∅ 41	1300/1300	8174/204-0308-33	2.208
	25	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
	35	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.

Explosion Protection

Marking

IECEX	Ex d II, Ex d I
Europe (ATEX)	Ⓜ II 2 G Ex d II
	Ⓜ I M 2 Ex d I

Certificates

IECEX	IECEX PTB 06.0081U
Europe (ATEX)	PTB 01 ATEX 1065 U
Other certificates	Canada (CSA), Belarus (Gospromnadzor)

E9

Conductor Bushings

Series 8174

Technical Data

Electrical data

Rated operational voltage	H07G-K	450/750 V	AWM UL 1015	600 V
	H05G-K	300/500 V	AWM UL 1007	300 V
Rated operational current	S07G-K	max. 705 V	RADOX UL 3271 / CSA AWM I A/B	600 V
	H05V-K	300/500 V	RADOX 125	600 V
	NSGAFöu	10000 V	RADOX 155S FLR	60 V
	(N)HX4GAF	600/1000 V		

Ambient conditions

Ambient temperature	hard-wired	flexible
H07G-K	-40 ... +110 °C	-25 ... +110 °C
H05G-K	-40 ... +110 °C	-25 ... +110 °C
S07G-K	-40 ... +110 °C	-25 ... +110 °C
NSGAFöu	-40 ... +80 °C	-25 ... +80 °C
(N)HX4GAF	-15 ... +105 °C	-15 ... +105 °C
AWM UL 1015	-15 ... +105 °C	
AWM UL 1007	-15 ... +80 °C	
RADOX UL 3271 / CSA AWM I A/B	-25 ... +125 °C	-25 ... +125 °C
RADOX 125	-40 ... +125 °C	
RADOX 155S FLR	-40 ... +150 °C	
H05V-K	-30 ... +80 °C	-5 ... +70 °C

Mechanical data

Material		
Threaded fitting	Brass	
Sealing material	PU-resin	
Bush	Brass	
Conductor		
Size	0.5 ... 70 mm ²	
Series	AWM UL 1015	AWG4 ... AWG20
	AWM UL 1007	AWG16 ... AWG20
Number	max. 72, depends on size and nominal diameter	

Note on Assembly

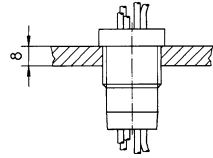


Fig. 1
Threaded conductor bushing
8174/1

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 60079-1. 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).

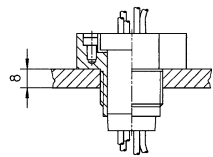
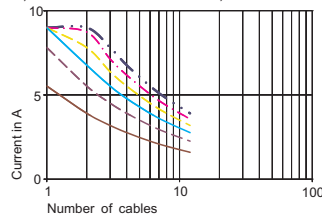


Fig. 2
Plain conductor bushings 8174/2,
fitted into threaded fitting

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 operating 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 965-3b) 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.

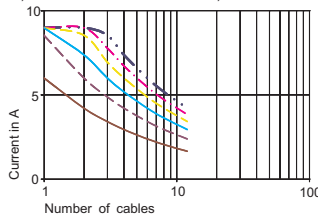
Current Load Diagram (for Bunched Conductors of Various Temperatures)

Current loading of
0,5 mm² of cables in M16 x 1,5



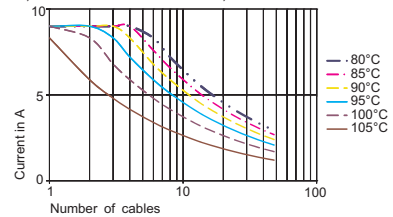
09449E02

Current loading of
0,5 mm² of cables in M24 x 1,5



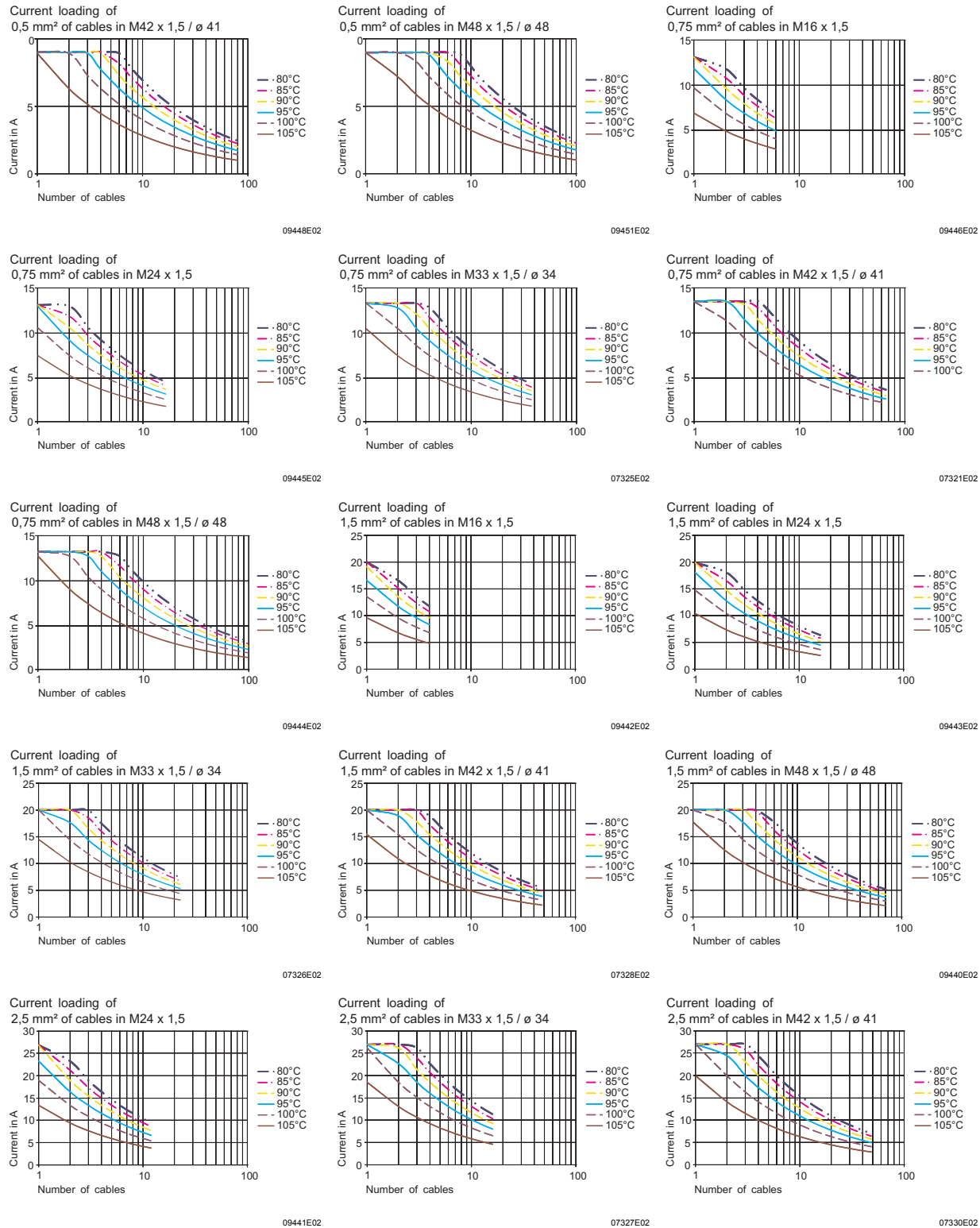
09450E02

Current loading of
0,5 mm² of cables in M33 x 1,5 / ø 34



09447E02

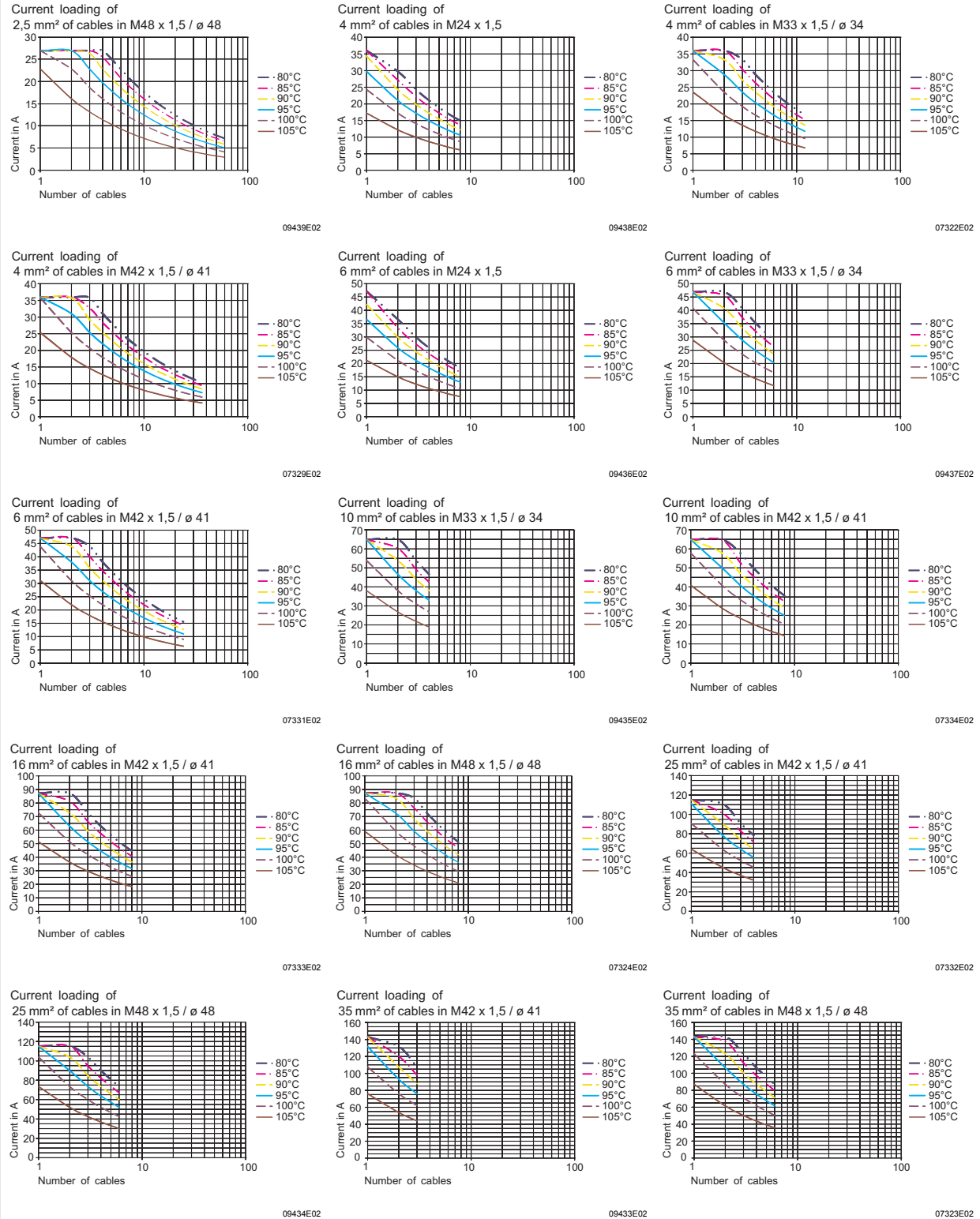
Current Load Diagram (for Bunched Conductors of Various Temperatures)



Conductor Bushings

Series 8174

Current Load Diagram (for Bunched Conductors of Various Temperatures)








Conductor Bushings

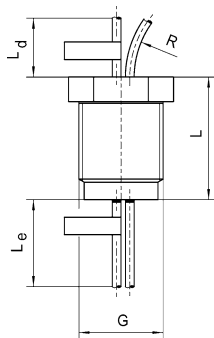
Series 8174



Accessories and Spare Parts

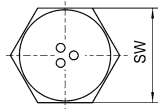
Designation	Illustration	Description	Order number	Weight kg
Stopping plug	 10003E00	to close up unused thread fittings		
		Ø 34 mm M42 x 1.5	139720	0.267
		Ø 41 mm M48 x 1.5	139732	0.267
		Ø 48 mm M56 x 1.5	139740	0.267
		Note: screws and washers have to be ordered separately		
Threaded fitting	 05243E00	for plain conductor bushings 8174/2	Thread diameter Thread size	
		Ø 34 mm M42 x 1.5	140032	0.156
		Ø 41 mm M48 x 1.5	140038	0.184
		Ø 48 mm M56 x 1.5	140049	0.276
		Note: screws and washers have to be ordered separately		
Allen screw	 05244E00	M4 x 6 3 cylinder-head screws are required per stopping plug or threaded fitting	109806	0.002
Spring washer	 10004E00	M4 3 spring washers are required per stopping plug or threaded fitting	110596	0.200
Lock nut	 05865E00	M16 x 1.5	108368	0.004
		M33 x 1,5	108375	0.036
		M42 x 1,5	108378	0.036
		M48 x 1.5	108379	0.045

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



Conductor size	L	R
0.5 ... 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-.....	M16 x 1.5	19	1000 / 1000
8174/102-.....	M24 x 1.5	27	
8174/103-.....	M33 x 1.5	36	
8174/104-.....	M42 x 1.5	46	
8174/105-.....	M48 x 1.5	55	



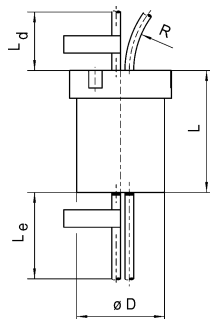
04546E00

8174/1... Threaded conductor bushings

Conductor Bushings

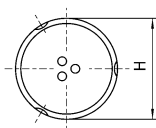
Series 8174

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



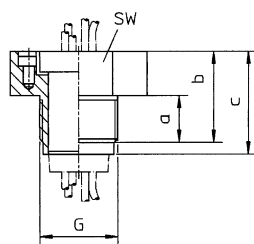
Conductor size	L	R
0.5 ... 1.5 mm ²	35	9
2.5 mm ²	35	12
4 mm ²	35	15
6 mm ²	35	17
10 mm ²	43	21
16 mm ²	43	28
25 mm ²	43	36
35 mm ²	43	45
50 mm ²	43	74
70 mm ²	43	83

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



04529E00

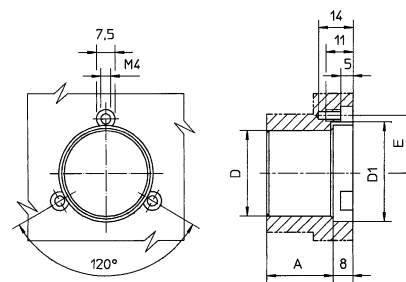
8174/2-....- Plain conductor bushings



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, dimensions, weights, designs and products available without notice. The illustrations cannot be considered binding.