

# Al...

## Ferrules with insulating collar according to DIN 46228-4



Data sheet  
103090\_en\_02

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### 1 Description

A special feature of **Al...** ferrules with insulating collar is that the closer the connections are, the more reliable the insulation is and the less likely the wires are to splice. The dimensions of the ferrules correspond to DIN 46228-4.

The metal insulating sleeve is made from a soft electrolytic copper (CU-DHP) with tin plating, which ensures optimum connection when crimped with the appropriate Phoenix Contact tools.

The insulating collar made from polypropylene, which is resistant to extreme heat, insulates and simplifies fitting onto the wire without having to splice the individual litz wires. The cross section sizes are color coded. They are listed according to DIN 46228-4, Weidmüller standard, and French standard NF C 63-023.



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This data sheet is valid for all products listed on the following page:

## 2 Dimensions and ordering data

### Ferrules with insulating collar according to DIN 46228-4

Cross section	l <sub>1</sub>	l <sub>2</sub>	d <sub>1</sub>	s <sub>1</sub>	d <sub>2</sub>	s <sub>2</sub>	Color	Color code <sup>1</sup>	Type	Order No.	Pcs./ Pck.
0.14 mm <sup>2</sup>	12.5 mm	8.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Gray	–	AI 0,14- 8 GY -1000 <sup>2</sup>	3203011	1000
0.25 mm <sup>2</sup>	10.5 mm	6.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Blue	–	AI 0,25- 6 BU <sup>2</sup>	3203040	100
0.25 mm <sup>2</sup>	10.5 mm	6.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Yellow	–	AI 0,25- 6 YE <sup>2</sup>	3203024	100
0.25 mm <sup>2</sup>	12.5 mm	8.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Yellow	–	AI 0,25- 8 YE <sup>2</sup>	3203037	100
0.34 mm <sup>2</sup>	10.5 mm	6.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Turquoise	–	AI 0,34-6 TQ <sup>2</sup>	3203053	100
0.34 mm <sup>2</sup>	10.5 mm	8.0 mm	0.8 mm	0.15 mm	1.8 mm	0.25 mm	Turquoise	–	AI 0,34-8 TQ <sup>2</sup>	3203066	100
0.5 mm <sup>2</sup>	12.0 mm	6.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	Orange	W	AI 0,5 - 6 OG	3201301	100
0.5 mm <sup>2</sup>	12.0 mm	6.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 - 6 WH	3200687	100
0.5 mm <sup>2</sup>	14.0 mm	8.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	Orange	W	AI 0,5 - 8 OG	3201123	100
0.5 mm <sup>2</sup>	14.0 mm	8.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	Orange	W	AI 0,5 - 8 OG-1000	3202902	1000
0.5 mm <sup>2</sup>	14.0 mm	8.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 - 8 WH	3200014	100
0.5 mm <sup>2</sup>	14.0 mm	8.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 - 8 WH -1000	3200881	1000
0.5 mm <sup>2</sup>	16.0 mm	10.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 -10 WH	3201275	100
0.5 mm <sup>2</sup>	16.0 mm	10.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 -10 WH-1000	3203105	1000
0.5 mm <sup>2</sup>	18.0 mm	12.0 mm	1.1 mm	0.15 mm	2.5 mm	0.3 mm	White	DIN/NF	AI 0,5 -12 WH <sup>2</sup>	3200506	100
0.75 mm <sup>2</sup>	12.0 mm	6.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75- 6 GY	3200690	100
0.75 mm <sup>2</sup>	12.0 mm	6.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	White	W	AI 0,75- 6 WH	3201314	100
0.75 mm <sup>2</sup>	14.0 mm	8.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Blue	NF	AI 0,75- 8 BU	3200027	100
0.75 mm <sup>2</sup>	14.0 mm	8.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75- 8 GY	3200519	100
0.75 mm <sup>2</sup>	14.0 mm	8.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75- 8 GY -1000	3200894	1000
0.75 mm <sup>2</sup>	14.0 mm	8.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	White	W	AI 0,75- 8 WH	3201110	100
0.75 mm <sup>2</sup>	16.0 mm	10.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75-10 GY	3201288	100
0.75 mm <sup>2</sup>	16.0 mm	10.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75-10 GY-1000	3203118	1000
0.75 mm <sup>2</sup>	18.0 mm	12.0 mm	1.3 mm	0.15 mm	2.8 mm	0.3 mm	Gray	DIN	AI 0,75-12 GY	3200849	100
1 mm <sup>2</sup>	12.5 mm	6.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 - 6 RD	3200742	100
1 mm <sup>2</sup>	12.5 mm	6.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Yellow	W	AI 1 - 6 YE	3201327	100
1 mm <sup>2</sup>	14.5 mm	8.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 - 8 RD	3200030	100
1 mm <sup>2</sup>	14.5 mm	8.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 - 8 RD -1000	3200904	1000
1 mm <sup>2</sup>	14.5 mm	8.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Yellow	W	AI 1 - 8 YE	3201097	100
1 mm <sup>2</sup>	14.5 mm	8.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Yellow	W	AI 1 - 8 YE-1000	3202915	1000
1 mm <sup>2</sup>	16.5 mm	10.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 -10 RD	3200182	100
1 mm <sup>2</sup>	16.5 mm	10.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 -10 RD-1000	3203121	1000
1 mm <sup>2</sup>	18.5 mm	12.0 mm	1.5 mm	0.15 mm	3.0 mm	0.3 mm	Red	DIN/NF	AI 1 -12 RD	3200674	100
1.5 mm <sup>2</sup>	12.5 mm	6.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 - 6 BK <sup>2</sup>	3200755	100
1.5 mm <sup>2</sup>	14.5 mm	8.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 - 8 BK	3200043	100
1.5 mm <sup>2</sup>	14.5 mm	8.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 - 8 BK -1000	3200917	1000
1.5 mm <sup>2</sup>	14.5 mm	8.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Red	W	AI 1,5 - 8 RD	3201136	100
1.5 mm <sup>2</sup>	14.5 mm	8.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Red	W	AI 1,5 - 8 RD-1000	3202928	1000
1.5 mm <sup>2</sup>	16.5 mm	10.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 -10 BK	3200195	100
1.5 mm <sup>2</sup>	16.5 mm	10.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 -10 BK-1000	3203134	1000
1.5 mm <sup>2</sup>	18.5 mm	12.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 -12 BK	3201482	100

## Ferrules with insulating collar according to DIN 46228-4 [...]

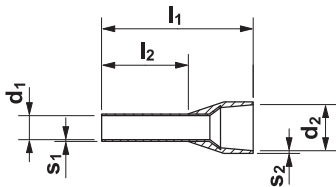
Cross section	l <sub>1</sub>	l <sub>2</sub>	d <sub>1</sub>	s <sub>1</sub>	d <sub>2</sub>	s <sub>2</sub>	Color	Color code <sup>1</sup>	Type	Order No.	Pcs./ Pck.
1.5 mm <sup>2</sup>	24.5 mm	18.0 mm	1.8 mm	0.15 mm	3.4 mm	0.3 mm	Black	DIN/NF	AI 1,5 -18 BK	3200056	100
2.5 mm <sup>2</sup>	15.0 mm	8.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 - 8 BU	3200522	100
2.5 mm <sup>2</sup>	15.0 mm	8.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 - 8 BU - 1000	3200920	1000
2.5 mm <sup>2</sup>	15.0 mm	8.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Gray	NF	AI 2,5 - 8 GY	3200069	100
2.5 mm <sup>2</sup>	17.0 mm	10.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 -10 BU <sup>2</sup>	3202533	100
2.5 mm <sup>2</sup>	17.0 mm	10.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 -10 BU-1000 <sup>2</sup>	3203147	1000
2.5 mm <sup>2</sup>	19.0 mm	12.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 -12 BU	3200962	100
2.5 mm <sup>2</sup>	19.0 mm	12.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Gray	NF	AI 2,5 -12 GY	3200205	100
2.5 mm <sup>2</sup>	25.0 mm	18.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Blue	DIN/W	AI 2,5 -18 BU	3200580	100
2.5 mm <sup>2</sup>	25.0 mm	18.0 mm	2.3 mm	0.15 mm	4.2 mm	0.3 mm	Gray	NF	AI 2,5 -18 GY	3200072	100
4 mm <sup>2</sup>	17.5 mm	10.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Gray	DIN/W	AI 4 -10 GY	3200535	100
4 mm <sup>2</sup>	17.5 mm	10.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Orange	NF	AI 4 -10 OG	3200085	100
4 mm <sup>2</sup>	19.5 mm	12.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Gray	DIN/W	AI 4 -12 GY	3200959	100
4 mm <sup>2</sup>	19.5 mm	12.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Orange	NF	AI 4 -12 OG	3200438	100
4 mm <sup>2</sup>	22.5 mm	18.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Gray	DIN/W	AI 4 -18 GY	3200593	100
4 mm <sup>2</sup>	22.5 mm	18.0 mm	2.9 mm	0.2 mm	4.7 mm	0.3 mm	Orange	NF	AI 4 -18 OG	3200098	100
6 mm <sup>2</sup>	20.0 mm	12.0 mm	3.6 mm	0.2 mm	6.2 mm	0.3 mm	Black	W	AI 6 -12 BK	3201107	100
6 mm <sup>2</sup>	20.0 mm	12.0 mm	3.6 mm	0.2 mm	6.2 mm	0.3 mm	Green	NF	AI 6 -12 GN	3200108	100
6 mm <sup>2</sup>	20.0 mm	12.0 mm	3.6 mm	0.2 mm	6.2 mm	0.3 mm	Yellow	DIN	AI 6 -12 YE	3200548	100
6 mm <sup>2</sup>	26.0 mm	18.0 mm	3.6 mm	0.2 mm	6.2 mm	0.3 mm	Green	NF	AI 6 -18 GN	3200111	100
6 mm <sup>2</sup>	26.0 mm	18.0 mm	3.6 mm	0.2 mm	6.2 mm	0.3 mm	Yellow	DIN	AI 6 -18 YE	3200603	100
10 mm <sup>2</sup>	21.0 mm	12.0 mm	4.6 mm	0.2 mm	7.5 mm	0.3 mm	Brown	NF	AI 10 -12 BN	3200124	100
10 mm <sup>2</sup>	21.0 mm	12.0 mm	4.6 mm	0.2 mm	7.5 mm	0.3 mm	Ivory	W	AI 10 -12 IV	3201068	100
10 mm <sup>2</sup>	21.0 mm	12.0 mm	4.6 mm	0.2 mm	7.5 mm	0.3 mm	Red	DIN	AI 10 -12 RD	3200551	100
10 mm <sup>2</sup>	27.0 mm	18.0 mm	4.6 mm	0.2 mm	7.5 mm	0.3 mm	Brown	NF	AI 10 -18 BN	3200137	100
10 mm <sup>2</sup>	27.0 mm	18.0 mm	4.6 mm	0.2 mm	7.5 mm	0.3 mm	Red	DIN	AI 10 -18 RD	3200616	100
16 mm <sup>2</sup>	23.0 mm	12.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	Blue	DIN	AI 16 -12 BU	3200564	100
16 mm <sup>2</sup>	23.0 mm	12.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	Green	W	AI 16 -12 GN	3201152	100
16 mm <sup>2</sup>	23.0 mm	12.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	Ivory	NF	AI 16 -12 IV	3201181	100
16 mm <sup>2</sup>	23.0 mm	12.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	White	-	AI 16 -12 WH	3200140	100
16 mm <sup>2</sup>	29.0 mm	18.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	Blue	DIN	AI 16 -18 BU	3200629	100
16 mm <sup>2</sup>	29.0 mm	18.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	Green	W	AI 16 -18 GN	3201330	100
16 mm <sup>2</sup>	29.0 mm	18.0 mm	6.0 mm	0.2 mm	8.7 mm	0.5 mm	White	-	AI 16 -18 WH	3200153	100
25 mm <sup>2</sup>	29.0 mm	16.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Black	NF	AI 25 -16 BK	3200412	50
25 mm <sup>2</sup>	29.0 mm	16.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Brown	W	AI 25 -16 BN	3201084	100
25 mm <sup>2</sup>	29.0 mm	16.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Yellow	DIN	AI 25 -16 YE	3200577	50
25 mm <sup>2</sup>	31.0 mm	18.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Yellow	DIN	AI 25 -18 YE	3201505	50
25 mm <sup>2</sup>	35.0 mm	22.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Black	NF	AI 25 -22 BK	3200739	50
25 mm <sup>2</sup>	35.0 mm	22.0 mm	7.5 mm	0.2 mm	10.8 mm	0.5 mm	Yellow	DIN	AI 25 -22 YE	3200700	50
35 mm <sup>2</sup>	30.0 mm	16.0 mm	8.5 mm	0.2 mm	12.3 mm	0.6 mm	Beige	W	AI 35 -16 BE	3201071	50
35 mm <sup>2</sup>	30.0 mm	16.0 mm	8.5 mm	0.2 mm	12.3 mm	0.6 mm	Red	DIN/NF	AI 35 -16 RD	3200441	50
35 mm <sup>2</sup>	32.0 mm	18.0 mm	8.5 mm	0.2 mm	12.3 mm	0.6 mm	Red	DIN/NF	AI 35 -18 RD	3201495	50

**Ferrules with insulating collar according to DIN 46228-4 [...]**

Cross section	$l_1$	$l_2$	$d_1$	$s_1$	$d_2$	$s_2$	Color	Color code <sup>1</sup>	Type	Order No.	Pcs./Pck.
35 mm <sup>2</sup>	39.0 mm	25.0 mm	8.5 mm	0.2 mm	12.3 mm	0.6 mm	Red	DIN/NF	AI 35 -25 RD	3200713	50
50 mm <sup>2</sup>	36.0 mm	20.0 mm	10.5 mm	0.3 mm	15.0 mm	0.6 mm	Blue	DIN/NF	AI 50 -20 BU	3200454	50
50 mm <sup>2</sup>	36.0 mm	20.0 mm	10.5 mm	0.3 mm	15.0 mm	0.6 mm	Olive	W	AI 50 -20 OL	3201178	50
50 mm <sup>2</sup>	41.0 mm	25.0 mm	10.5 mm	0.3 mm	15.0 mm	0.6 mm	Blue	DIN/NF	AI 50 -25 BU	3200726	25
50 mm <sup>2</sup>	41.0 mm	25.0 mm	10.5 mm	0.3 mm	15.0 mm	0.6 mm	Black	-	AI 50 -25 BK	3240678	25
70 mm <sup>2</sup>	37.0 mm	20.0 mm	12.7 mm	0.4 mm	15.8 mm	0.7 mm	Yellow	DIN	AI 70 -20 YE <sup>2</sup>	3201848	25
95 mm <sup>2</sup>	44.0 mm	25.0 mm	14.5 mm	0.4 mm	18.0 mm	0.6 mm	Red	DIN	AI 95 -25 RD <sup>2</sup>	3201853	25
120 mm <sup>2</sup>	48.0 mm	27.0 mm	16.5 mm	0.5 mm	21.0 mm	0.7 mm	Blue	DIN	AI120 -27 BU <sup>2</sup>	3201822	25

<sup>1</sup> DIN = Color code according to DIN 46228-4; W = Color code according to Weidmüller standard; NF = Color code according to NF C 63-023

<sup>2</sup> These ferrules are not included in DIN 46228-4.



- $l_1$  = Total length
- $l_2$  = Sleeve length
- $d_1$  = Inside diameter of sleeve
- $s_1$  = Wall thickness of sleeve
- $d_2$  = Inside diameter of insulating collar

Figure 1 Dimensions (tolerances according to DIN 46228-4)

**Assortment boxes**

Description	Type	Order No.	Pcs./Pck.
Assortment box, red, color coding according to DIN Comprises: 50 pcs. each of AI 0,5-8 WH, AI 2,5-8 BU, 100 pcs. each of AI 0,75-8 GY, AI 1-8 RD, AI 1,5-8 BK	AI-TWIN SORTI BOX RD	3202960	1
Assortment box, anthracite, color coding according to DIN Comprises: 50 pcs. each of AI 4-10 GY, 20 pcs. each of AI 6-12 YE, AI 10-12 RD, 10 pcs. each of AI 16-12 BU	AI-TWIN SORTI BOX ANT	3202973	1

**3 Technical data**

**General data**

Material

Collar

Polypropylene PP (UL94 HB), heat resistant up to 105°C

Sleeve

CU-DHP, tin-plated surface