

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices.

Using ferrules offers several advantages:

ELIMINATE CROSS SHORTING

caused by unraveled stray wire strands.

IMPROVE TERMINAL CONNECTIONS

and reduce resistance by providing a solid surface at the point of connection.

REDUCE INSTALLATION TIME

by eliminating the need to dress loose wire strands and facilitating wire insertion into the terminal clamp.

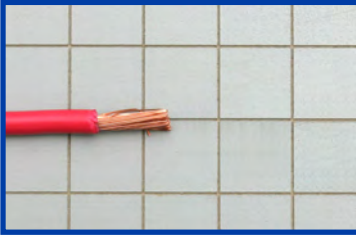
PREVENT CONDUCTOR BREAKAGE

due to bending, wire stress or vibration.



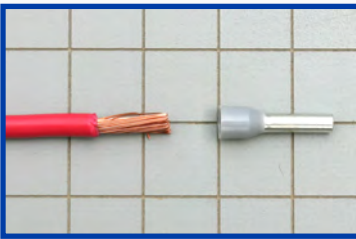
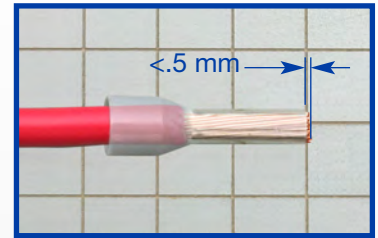
Recommended Installation Procedure

Cutting and stripping the wire



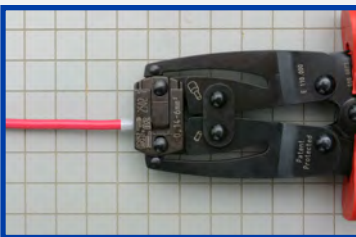
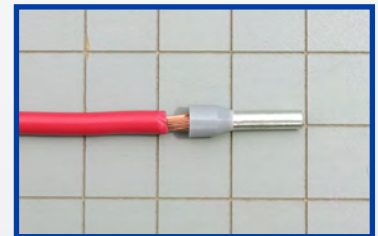
The wire should be cut as squarely and evenly as possible, taking care to avoid angular cuts or damage to the conductor. The strip length of the insulation will depend on the barrel length of the ferrule and the outside diameter of the wire.

Ideally the wire insulation should be stripped to a length that allows the conductor end to reach flush to the tip of the ferrule, when inserted. The end of the conductor should not extend more than .5mm past the tip of the ferrule.



After the insulation is stripped, the strands of the conductor should be dressed by slightly twisting them to insure that any stray strands are consolidated.

The wire can then be inserted into the ferrule. The wire should be pushed in so that the insulation edge is fully covered by the plastic collar. The conductor should completely fill the metal tube and can extend up to .5mm past the tip.



The ferrule and wire should be crimped with an appropriately sized ratcheted crimper. The ferrule should be inserted into the crimper die set and positioned so that only the metal tube is crimped. The crimping tool should be cycled completely to insure proper application.

The finished installation should then be checked for any obvious flaws in processing. An occasional pull test should be performed to check that the crimp tool is functioning properly.



HIGHLIGHTS

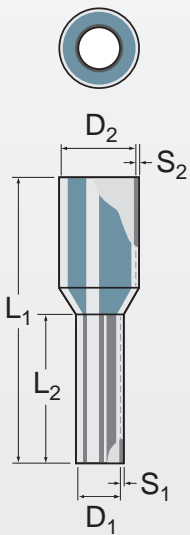
FEATURES

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices. Insulated ferrules prevent conductor breakage due to bending, wire stress or vibration while facilitating wire insertion into the terminal clamp.

Altech's UL insulated ferrules are color coded by conductor size for convenient identification.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools.

In order meet the UL requirements only matching UL crimpers should be use.



Standard Packaging

AWG	mm ²	L ₂ Barrel Length (mm)	Industry Standard color	Cat. No.	DIN Standard		Dimensions (mm)						Std. Pack
					color	Cat. No.	L ₁	L ₂	D ₁	S ₁	D ₂	S ₂	
26	0.14	6	grey	FII2606			10	6	0.6	0.15	1.5	0.25	500
26	0.14	8	grey	FII2608			12	8	0.6	0.15	1.5	0.25	500
24	0.25	6	light blue	FII2406			10	6	0.85	0.15	1.8	0.25	500
24	0.25	8	light blue	FII2408			12	8	0.85	0.15	1.8	0.25	500
24	0.25	12	light blue	FII2412			16	12	0.85	0.15	1.8	0.25	500
22	0.34	6	turquoise	FII2206			10	6	0.85	0.15	2	0.25	500
22	0.34	8	turquoise	FII2208			12	8	0.85	0.15	2	0.25	500
22	0.34	12	turquoise	FII2212			16	12	0.85	0.15	2	0.25	500
20	0.5	6	orange	FII2006	white	FID2006	12	6	1	0.15	2.6	0.25	500
20	0.5	8	orange	FII2008	white	FID2008	14	8	1	0.15	2.6	0.25	500
20	0.5	10	orange	FII2010	white	FID2010	16	10	1	0.15	2.6	0.25	500
20	0.5	12	orange	FII2012	white	FID2012	18	12	1	0.15	2.6	0.25	500
18	0.75	6	white	FII1806W	grey	FID1806GR	12	6	1.2	0.15	2.8	0.25	500
18	0.75	8	white	FII1808W	grey	FID1808GR	14	8	1.2	0.15	2.8	0.25	500
18	0.75	10	white	FII1810W	grey	FID1810GR	16	10	1.2	0.15	2.8	0.25	500
18	0.75	12	white	FII1812W	grey	FID1812GR	18	12	1.2	0.15	2.8	0.25	500
18	1	6	yellow	FII1806Y	red	FID1806R	12	6	1.4	0.15	3	0.25	500
18	1	8	yellow	FII1808Y	red	FID1808R	14	8	1.4	0.15	3	0.25	500
18	1	10	yellow	FII1810Y	red	FID1810R	16	10	1.4	0.15	3	0.25	500
18	1	12	yellow	FII1812Y	red	FID1812R	18	12	1.4	0.15	3	0.25	500
16	1.5	6	red	FII1606	black	FID1606	12	6	1.7	0.15	3.5	0.25	500
16	1.5	8	red	FII1608	black	FID1608	14	8	1.7	0.15	3.5	0.25	500
16	1.5	10	red	FII1610	black	FID1610	16	10	1.7	0.15	3.5	0.25	500
16	1.5	12	red	FII1612	black	FID1612	18	12	1.7	0.15	3.5	0.25	500
16	1.5	18	red	FII1618	black	FID1618	24	18	1.7	0.15	3.5	0.25	500
14	2.08	8	yellow	FII1408Y			15	8	2.05	0.15	4.2	0.3	500
14	2.5	6	blue	FID1406			13	6	2.2	0.15	4.2	0.25	500
14	2.5	8	blue	FID1408			15	8	2.2	0.15	4.2	0.25	500
14	2.5	10	blue	FID1410			17	10	2.2	0.15	4.2	0.25	500
14	2.5	12	blue	FID1412			19	12	2.2	0.15	4.2	0.25	500
14	2.5	18	blue	FID1418			25	18	2.2	0.15	4.2	0.25	500
12	4	8	grey	FID1208			16	8	2.8	0.2	4.8	0.3	500
12	4	10	grey	FID1210			18	10	2.8	0.2	4.8	0.3	500
12	4	12	grey	FID1212			20	12	2.8	0.2	4.8	0.3	500
12	4	18	grey	FID1218			26	18	2.8	0.2	4.8	0.3	100
10	6	12	black	FII1012	yellow	FID1012	20	12	3.5	0.2	6.3	0.3	100
10	6	18	black	FII1018	yellow	FID1018	26	18	3.5	0.2	6.3	0.3	100
8	10	12	ivory	FII0812	red	FID0812	22	12	4.5	0.2	7.6	0.4	100
8	10	18	ivory	FII0818	red	FID0818	28	18	4.5	0.2	7.6	0.4	100
6	16	12	green	FII0612	blue	FID0612	22	12	5.8	0.2	8.8	0.4	100
6	16	18	green	FII0618	blue	FID0618	28	18	5.8	0.2	8.8	0.4	100
4	25	16	brown	FII0416	yellow	FID0416	30	16	7.3	0.2	11.2	0.4	50
4	25	18	brown	FII0418	yellow	FID0418	32	18	7.3	0.2	11.2	0.4	50
4	25	22	brown	FII0422	yellow	FID0422	36	22	7.3	0.2	11.2	0.4	50
2	35	16	beige	FII0216	red	FID0216	30	16	8.3	0.2	12.7	0.4	50
2	35	18	beige	FII0218	red	FID0218	32	18	8.3	0.2	12.7	0.4	50
2	35	25	beige	FII0225	red	FID0225	39	25	8.3	0.2	12.7	0.4	50
1	50	20	olive	FII0120	blue	FID0120	36	20	10.3	0.3	15	0.5	50
1	50	25	olive	FII0125	blue	FID0125	41	25	10.3	0.3	15	0.5	50
1	50	30	olive	FII0130	blue	FID0130	46	30	10.3	0.3	15	0.5	50

Smaller Package Sizes

26	0.14	6	grey	FII2606M			10	6	0.6	0.15	1.5	0.25	100
26	0.14	8	grey	FII2608M			12	8	0.6	0.15	1.5	0.25	100
24	0.25	6	light blue	FII2406M			10	6	0.85	0.15	1.8	0.25	100
24	0.25	8	light blue	FII2408M			12	8	0.85	0.15	1.8	0.25	100
24	0.25	12	light blue	FII2412M			16	12	0.85	0.15	1.8	0.25	100
22	0.34	6	turquoise	FII2206M			10	6	0.85	0.15	2	0.25	100
22	0.34	8	turquoise	FII2208M			12	8	0.85	0.15	2	0.25	100
22	0.34	12	turquoise	FII2212M			16	12	0.85	0.15	2	0.25	100
20	0.5	6	orange	FII2006M	white	FID2006M	12	6	1	0.15	2.6	0.25	100
20	0.5	8	orange	FII2008M	white	FID2008M	14	8	1	0.15	2.6	0.25	100
20	0.5	10	orange	FII2010M	white	FID2010M	16	10	1	0.15	2.6	0.25	100
20	0.5	12	orange	FII2012M	white	FID2012M	18	12	1	0.15	2.6	0.25	100
18	0.75	6	white	FII1806WM	grey	FID1806GRM	12	6	1.2	0.15	2.8	0.25	100
18	0.75	8	white	FII1808WM	grey	FID1808GRM	14	8	1.2	0.15	2.8	0.25	100
18	0.75	10	white	FII1810WM	grey	FID1810GRM	16	10	1.2	0.15	2.8	0.25	100
18	0.75	12	white	FII1812WM	grey	FID1812GRM	18	12	1.2	0.15	2.8	0.25	100
18	1	6	yellow	FII1806YM	red	FID1806RM	12	6	1.4	0.15	3	0.25	100
18	1	8	yellow	FII1808YM	red	FID1808RM	14	8	1.4	0.15	3	0.25	100
18	1	10	yellow	FII1810YM	red	FID1810RM	16	10	1.4	0.15	3	0.25	100
18	1	12	yellow	FII1812YM	red	FID1812RM	18	12	1.4	0.15	3	0.25	100
16	1.5	6	red	FII1606M	black	FID1606M	12	6	1.7	0.15	3.5	0.25	100
16	1.5	8	red	FII1608M	black	FID1608M	14	8	1.7	0.15	3.5	0.25	100
16	1.5	10	red	FII1610M	black	FID1610M	16	10	1.7	0.15	3.5	0.25	100
16	1.5	12	red	FII1612M	black	FID1612M	18	12	1.7	0.15	3.5	0.25	100
14	2.08	8	yellow	FII1408YM			15	8	2.05	0.15	4.2	0.25	100
14	2.5	6	blue	FID1406M			13	6	2.2	0.15	4.2	0.25	100
14	2.5	8	blue	FID1408M			15	8	2.2	0.15	4.2	0.25	100
14	2.5	10	blue	FID1410M			17	10	2.2	0.15	4.2	0.25	100
14	2.5	12	blue	FID1412M			19	12	2.2	0.15	4.8	0.25	100
12	4	8	grey	FID1208M			16	8	2.8	0.2	4.8	0.3	50
12	4	10	grey	FID1210M			18	10	2.8	0.2	4.8	0.3	50
10	6	12	black	FII1012M	yellow	FID1012M	20	12	3.5	0.2	6.3	0.3	20
8	10	12	ivory	FII0812M	red	FID0812M	22	12	4.5	0.2	7.6	0.4	20

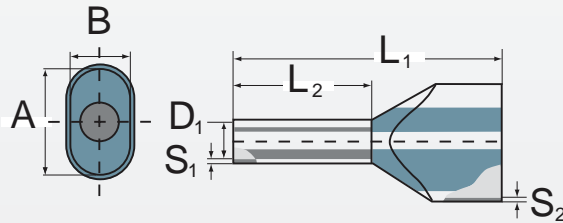
UL RECOGNIZED TWIN INSULATED FERRULES

Standard Packaging

AWG	mm ²	L ₂ Barrel Length (mm)	Industry Standard color Cat. No.	DIN Standard color Cat. No.	Dimensions (mm)							Std. Pack
					L ₁	L ₂	D ₁	S ₁	S ₂	A	B	
2 x 22	2 x 0.34	8	turquoise ● FTI2208		15	8	1.2	0.15	0.25	3.5	2	500
2 x 20	2 x 0.5	8	orange ● FTI2008	white ○ FTD2008	14	8	1.4	0.15	0.3	5	3	500
2 x 20	2 x 0.5	10	orange ● FTI2010	white ○ FTD2010	16	10	1.4	0.15	0.3	5	3	500
2 x 20	2 x 0.5	12	orange ● FTI2012	white ○ FTD2012	18	12	1.4	0.15	0.3	5	3	500
2 x 18	2 x 0.75	8	white ○ FTI1808W	grey ● FTD1808GR	14	8	1.7	0.15	0.3	5.5	3	500
2 x 18	2 x 0.75	10	white ○ FTI1810	grey ● FTD1810	16	10	1.7	0.15	0.3	5.5	3	500
2 x 18	2 x 0.75	12	white ○ FTI1812W	grey ● FTD1812GR	18	12	1.7	0.15	0.3	5.5	3	500
2 x 18	2 x 0.75	18	white ○ FTI1818W	grey ● FTD1818GR	24	18	1.7	0.15	0.3	5.5	3	500
2 x 18	2 x 1	8	yellow ● FTI1808Y	red ● FTD1808R	15	8	2	0.15	0.3	5.8	3.2	500
2 x 18	2 x 1	12	yellow ● FTI1812Y	red ● FTD1812R	19	12	2	0.15	0.3	5.8	3.2	500
2 x 18	2 x 1	14	yellow ● FTI1814	red ● FTD1814	21	14	2	0.15	0.3	5.8	3.2	500
2 x 18	2 x 1	18	yellow ● FTI1818Y	red ● FTD1818R	25	18	2	0.15	0.3	5.8	3.2	500
2 x 16	2 x 1.5	8	red ● FTI1608	black ● FTD1608	16	8	2.2	0.15	0.3	6.5	3.6	500
2 x 16	2 x 1.5	12	red ● FTI1612	black ● FTD1612	20	12	2.2	0.15	0.3	6.5	3.6	500
2 x 16	2 x 1.5	18	red ● FTI1618	black ● FTD1618	26	18	2.2	0.15	0.3	6.6	3.6	100
2 x 14	2 x 2.5	10	blue ● FTD1410		19	10	2.8	0.15	0.4	8	4.5	500
2 x 14	2 x 2.5	12	blue ● FTD1412		21	12	2.8	0.15	0.4	8	4.5	100
2 x 14	2 x 2.5	18	blue ● FTD1418		27	18	2.8	0.15	0.4	8	4.5	100
2 x 12	2 x 4	12	grey ● FTD1212		22	12	3.5	0.2	0.5	9	5.2	100
2 x 12	2 x 4	18	grey ● FTD1218		28	18	3.5	0.2	0.5	9	5.2	100
2 x 10	2 x 6	12	black ● FTI1012	yellow ● FTD1012	23	12	4.5	0.2	0.5	11.4	6.2	100
2 x 10	2 x 6	18	black ● FTI1018	yellow ● FTD1018	29	18	4.5	0.2	0.5	11.4	6.2	100
2 x 8	2 x 10	12	ivory ● FTI0812	red ● FTD0812	24	12	5.8	0.2	0.5	13.4	7.6	100
2 x 8	2 x 10	18	ivory ● FTI0818	red ● FTD0818	30	18	5.8	0.2	0.5	13.4	7.6	100
2 x 6	2 x 16	16	olive ● FTI0616	blue ● FTD0616	29	16	8.3	0.3	0.6	17.2	9.5	50
2 x 6	2 x 16	25	olive ● FTI0625	blue ● FTD0625	38	25	8.3	0.3	0.6	17.2	9.5	50

Smaller Package Sizes

2 x 22	2 x 0.34	8	turquoise ● FTI2208M		15	8	1.2	0.15	0.25	3.5	2	100
2 x 20	2 x 0.5	8	orange ● FTI2008M	white ○ FTD2008M	14	8	1.4	0.15	0.3	5	3	100
2 x 20	2 x 0.5	10	orange ● FTI2010M	white ○ FTD2010M	16	10	1.4	0.15	0.3	5	3	100
2 x 20	2 x 0.5	12	orange ● FTI2012M	white ○ FTD2012M	18	12	1.4	0.15	0.3	5	3	100
2 x 18	2 x 0.75	8	white ○ FTI1808WM	grey ● FTD1808GRM	14	8	1.7	0.15	0.3	5.5	3	100
2 x 18	2 x 0.75	10	white ○ FTI1810M	grey ● FTD1810M	16	10	1.7	0.15	0.3	5.5	3	100
2 x 18	2 x 0.75	12	white ○ FTI1812WM	grey ● FTD1812GRM	18	12	1.7	0.15	0.3	5.5	3	100
2 x 18	2 x 1	8	yellow ● FTI1808YM	red ● FTD1808RM	15	8	2	0.15	0.3	5.8	3.2	100
2 x 18	2 x 1	12	yellow ● FTI1812YM	red ● FTD1812RM	19	12	2	0.15	0.3	5.8	3.2	100
2 x 16	2 x 1.5	8	red ● FTI1608M	black ● FTD1608M	16	8	2.2	0.15	0.3	6.5	3.6	100
2 x 16	2 x 1.5	12	red ● FTI1612M	black ● FTD1612M	20	12	2.2	0.15	0.3	6.5	3.6	100
2 x 14	2 x 2.5	10	blue ● FTD1410M		19	10	2.8	0.15	0.4	8	4.5	50
2 x 14	2 x 2.5	12	blue ● FTD1412M		21	12	2.8	0.15	0.4	8	4.5	50
2 x 12	2 x 4	12	grey ● FTD1212M		22	12	3.5	0.2	0.5	9	5.2	20
2 x 10	2 x 6	12	black ● FTI1012M	yellow ● FTD1012M	23	12	4.5	0.2	0.5	11.4	6.2	20
2 x 8	2 x 10	12	ivory ● FTI0812M	red ● FTD0812M	24	12	5.8	0.2	0.5	13.4	7.6	20



Pull-Out Force Minimum Values for DIN

Minimum values of pull-out forces for FERRULES according to DIN EN 60947-1:2008, DIN EN 60999-1:2000 and DIN EN 60999-2:2004

Conductor	AWG	24	22	20	18	18	16	14	12	10	8	6	4	2	0	00	000	250	300	350	500	600
																		kcmil	kcmil	kcmil	kcmil	kcmil
Cross Section	mm ²	0,20	0,34	0,50	0,75	1,0	1,5	2,5	4,0	6,0	10	16	25	35	50	70	95	120	150	185	240	300
Pull Out Force	N	10	15	20	30	35	40	50	60	80	90	100	135	190	236	285	351	427	427	503	578	578

Pull-Out Force Minimum Values for UL486F

Conductor	AWG	24	22	20	18	18	16	14	12	10	8	6	4	2
Cross Section	mm ²	0,20	0,34	0,50	0,75	1,0	1,5	2,5	4,0	6,0	10	16	25	35
Pull Out Force	N	20	20	20	30	35	40	50	60	80	90	100	135	190
	Pounds	4.5	4.5	4.5	6.7	7.9	9.0	11.2	13.5	18	20.2	22.5	30.3	42.7

HIGHLIGHTS

FEATURES

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices. Insulated ferrules prevent conductor breakage due to bending, wire stress or vibration while facilitating wire insertion into the terminal clamp.

Altech's UL insulated ferrules are color coded by conductor size for convenient identification.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools.

In order meet the UL requirements only matching UL crimpers should be use.



These crimpers are specifically designed for use with ferrules and have been tested with our UL Recognized ferrules to insure proper termination. In order to meet the UL requires, the correct sized crimper from this range should be used.



Crimpit F 4

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with or without plastic collars. Only one crimping profile for the entire cross-section range.

Ferrules: 0,5 – 4 mm² (20 – 12 AWG)

Twin Ferrules: 2 x 0.5 – 2 x 2.5 mm² (2 x 20 – 2 x 14 AWG)

Cat. No.: Crimpit F 4

Weight 448 g



Crimpit F 6 Auto

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with and without plastic collars. Feeding from front.

Ferrules: 0,5 – 6 mm² (20 – 10 AWG)

Twin Ferrules: 2 x 0.5 – 2 x 2.5 mm² (2 x 20 – 2 x 14 AWG)

Cat. No.: Crimpit F 6 Auto

Weight 426 g



Crimpit F 6 Gyra

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with and without plastic collars. Rotatable crimp die for feeding from the front or the side.

Ferrules: 0,14 – 6 mm² (26 – 10 AWG)

Twin Ferrules: 2 x 0.5 – 2 x 4 mm² (2 x 20 – 2 x 12 AWG)

Cat. No.: Crimpit F 6 Gyra

Weight 428 g



Crimpit F 6 EN

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with and without plastic collars. Crimp conforms to EN 60947-1. Five crimping profiles for the rated conductor cross-sections. Registration in accordance with VG 95211 (Military designation VG 95236 T 14 A 0001).

Ferrules: 0.25 – 6 mm² (24 – 10 AWG)

Twin Ferrules: 2 x 0.75 – 2 x 4 mm² (2 x 18 – 2 x 12 AWG)

Cat. No.: Crimpit F 6 EN

Weight 423 g



Crimpit F 6 L

Crimping tool for ferrules (conforming to DIN 46228 part 1 and 2) with and without insulating collar. Five crimping profiles depending on the wire cross-sections.

Ferrules: 0.5 – 6 mm² (20 – 10 AWG)

Twin Ferrules: 2 x 0.75 – 2 x 4 mm² (2 x 18 – 2 x 12 AWG)

Cat. No.: Crimpit F 6 L

Weight 335 g

CRIMPERS FOR UL FERRULES



Crimpit F 16

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with and without plastic collars. Crimp conforms to EN 60947-1. Three crimping profiles for the rated conductor cross-sections. Registration in accordance with VG 95211 (Military designation VG 95236 T 14 A 0002).

Ferrules: 6 – 16 mm² (10 – 6 AWG)

Cat. No.: Crimpit F 16

Weight 418 g



Crimpit F 16 L

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) with and without plastic collars. Crimp conforms to EN 60947-1. Three crimping profiles for the rated conductor cross-sections.

Ferrules: 6 – 16 mm² (10 – 6 AWG)

Cat. No.: Crimpit F 16 L

Weight 380 g



Crimpit F 25 L

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) as well as for twin ferrules.

Ferrules: 6 – 25 mm² (10 – 4 AWG)

Twin Ferrules: 2 x 4 – 2 x 10 mm² (2 x 12 – 2 x 8 AWG)

Cat. No.: Crimpit F 25 L

Weight 540 g



Crimpit F 50 L

Crimping tool for ferrules (according to DIN 46228 part 1 and 4) as well as for twin ferrules.

Ferrules: 35 – 50 mm² (2 – 1 AWG)

Twin Ferrules: 2 x 16 mm² (2 x 6 AWG)

Cat. No.: Crimpit F 50 L

Weight 540 g

Crimper Selection Guide

Single Wire		Dual Wire		Crimpit F4	Crimpit F6 Gyra	Crimpit F6 EN	Crimpit F6 Auto	Crimpit F6L	Crimpit F16/F16L	Crimpit F25L	Crimpit F50L
AWG	mm ²	AWG	mm ²								
26	0.14										
24	0.25										
22	0.34										
20	0.5										
18	0.75	2 x 22	2 x 0.34								
18	1.0	2 x 20	2 x 0.5								
16	1.5	2 x 18	2 x 0.75								
14	2.5	2 x 16	2 x 1.5								
12	4	2 x 14	2 x 2.5								
10	6	2 x 12	2 x 4								
8	10	2 x 8	2 x 6								
6	16										
4	25	2 x 6	2 x 10								
2	35										
1	50										

Cutter, Stripper and Crimper

This one tool will cut and strip the wires and uses belt feed ferrules for fast and easy installation.



Crimpit F Multi

Multi-function tool. Stripping and cutting of wires. Crimping tool for insulated belt-strip ferrules according to DIN 40228.

Cross-section: 0.5 – 2.5 mm² (20 – 14 AWG)

Ferrules: 0.5 x 2.5 mm² (20 x 14 AWG)

Cat. No.: Crimpit F Multi

Weight 200 g

UL Recognized Insulated Belt Strip Ferrules

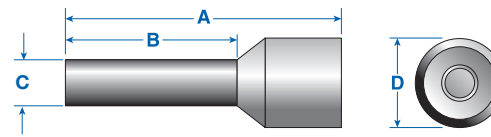
AWG	mm ²	Barrel Length (mm)	Industry Standard color	Industry Standard Cat. No.	DIN Standard color	DIN Standard Cat. No.	Std. Pack
20	0.5	8	orange	● FII2008B	white	○ FID2008B	10 x 50
18	0.75	8	white	○ FII1808WB	grey	● FID1808GRB	10 x 50
18	1	8	yellow	● FII1808YB	red	● FID1808RB	10 x 50
16	1.5	8	red	● FII1608B	black	● FID1608B	10 x 50
14	2.5	8		blue ● FID1408B			10 x 50

AUTOMATED FERRULE CRIMPING MACHINES



For technical and ordering information regarding Ferrule Crimping Machines please contact Altech.

Original Industry Standard Ferrules



Tested According To:

- CSA Std C22.2 No. 65-93 - Wire Connectors
- CSA Std C22.2 No. 188-M1983 - Splicing Wire and Cable Connectors
- ANSI/UL Std No. 486A - Wire Connectors and Soldering Lugs for Use with Copper Conductors
- ANSI/UL Std No. 486C - Splicing Wire Connectors

AWG	mm ²	Color	Cat. No.	Barrel Length (B) mm	Ferrule Dimensions mm				Std. Pack*
					A	B	C	D	
24	0.25	Lt. Blue	2620.0	6	10	6	1.2	2.3	500/100
24	0.25	Lt. Blue	2621.0	8	12	8	1.2	2.3	500/100
22	0.34	Turquoise	2622.0	6	10	6	1.2	2.5	500/100
22	0.34	Turquoise	2623.0	8	12	8	1.2	2.5	500/100
20	0.5	Orange	2397.0	6	12	6	1.3	2.8	500/100
20	0.5	Orange	2201.0	8	14	8	1.3	2.8	500/100
18	0.75	White	2398.0	6	12	6	1.5	3.3	500/100
18	0.75	White	2202.0	8	14	8	1.5	3.3	500/100
18	1	Yellow	2399.0	6	12	6	1.7	3.5	500/100
18	1	Yellow	2203.0	8	14	8	1.7	3.5	500/100
16	1.5	Red	2204.0	8	14	8	2.0	4.0	500/100
16	1.5	Red	2400.0	10	16	10	2.0	4.0	500/100
16	1.5	Red	2205.0	18	24	18	2.0	4.0	500/100
14	2.5	Blue	2206.0	8	14	8	2.5	4.7	500/100
14	2.5	Blue	2401.0	12	18	12	2.5	4.7	500/100
14	2.5	Blue	2207.0	18	24	18	2.5	4.7	500/100
12	4	Gray	2208.0	10	17	10	3.2	5.4	500/100
12	4	Gray	2402.0	12	20	12	3.2	5.4	500/100
12	4	Gray	2209.0	18	26	18	3.2	5.4	100
10	6	Black	2210.0	12	20	12	3.9	6.9	100
10	6	Black	2211.0	18	26	18	3.9	6.9	100
8	10	Ivory	2212.0	12	22	12	4.9	8.4	100
8	10	Ivory	2213.0	18	28	18	4.9	8.4	100
6	16	Green	2214.0	12	24	12	6.2	9.6	100
6	16	Green	2215.0	18	28	18	6.2	9.6	100
4	25	Brown	2267.0	18	30	18	7.7	12.0	50
4	25	Brown	2272.0	22	36	22	7.7	12.0	50
2	35	Beige	2276.0	18	30	18	8.7	13.5	50
2	35	Beige	2390.0	25	39	25	8.7	13.5	50
1	50	Olive	2500.0	20	36	20	10.9	16.0	50
2/0	70	Yellow	2786.0	20	37	20	13.4	17.0	25
3/0	95	Red	2787.0	25	44	25	15.4	19.0	5
4/0	120	Blue	2788.0	27	48	27	17.6	22.4	25
250MCM	150	Yellow	2789.0	32	58	32	20.5	25.0	25

HIGHLIGHTS

FEATURES

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices. Insulated ferrules prevent conductor breakage due to bending, wire stress or vibration while facilitating wire insertion into the terminal clamp.

Altech's standard insulated ferrules are color coded by conductor size for convenient identification.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools.

- Sleeve: polypropylene
- Tube: tin-plated copper

**CRIMPER
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* Different standard packs are available as shown. To order the desired standard pack, please use the quantity required as a suffix to the cat. no.
Example for 100 standard pack: Cat. No. 2620.0/100

HIGHLIGHTS

FEATURES

Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices.

Insulated ferrules prevent conductor breakage due to bending, wire stress or vibration while facilitating wire insertion into the terminal clamp.

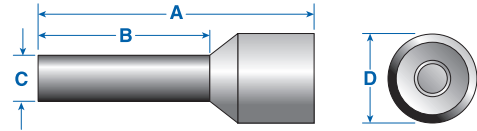
Altech's DIN standard ferrules are in compliance with DIN requirements, making them ideal for export applications. They also have a specified color code convention that differs from the color code used for Altech's industry standard ferrules.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools.

- Sleeve: polypropylene
- Tube: tin plated copper

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Original DIN Standard Ferrules



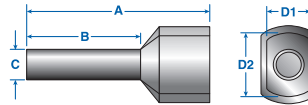
Tested According To:

- | | |
|-----------------------------|---|
| CSA Std C22.2 No. 65-93 | - Wire Connectors |
| CSA Std C22.2 No. 188-M1983 | - Splicing Wire and Cable Connectors |
| ANSI/UL Std No. 486A | - Wire Connectors and Soldering Lugs for Use with Copper Conductors |
| ANSI/UL Std No. 486C | - Splicing Wire Connectors |

	AWG	mm ²	Cat. Color	No.	Barrel Length (B) mm	Ferrule Dimensions mm				Std. Pack*
						A	B	C	D	
	20	0.50	White	2863.0	6	12	6	1.3	2.8	500/100
	20	0.50	White	2864.0	8	14	8	1.3	2.8	500/100
	20	0.50	White	2865.0	10	16	10	1.3	2.8	500/100
	18	0.75	Gray	2866.0	6	12	6	1.5	3.3	500/100
	18	0.75	Gray	2867.0	8	14	8	1.5	3.3	500/100
	18	0.75	Gray	2868.0	10	16	10	1.5	3.3	500/100
	18	0.75	Gray	2869.0	12	18	12	1.5	3.3	500/100
	18	1	Red	2870.0	6	12	6	1.7	3.5	500/100
	18	1	Red	2871.0	8	14	8	1.7	3.5	500/100
	18	1	Red	2872.0	10	16	10	1.7	3.5	500/100
	18	1	Red	2840.0	12	18	12	1.7	3.5	500/100
	16	1.5	Black	2841.0	8	14	8	2	4	500/100
	16	1.5	Black	2842.0	10	16	10	2	4	500/100
	16	1.5	Black	2843.0	12	18	12	2	4	500/100
	16	1.5	Black	2844.0	18	24	18	2	4	500/100
	14	2.5	Blue	2845.0	8	14	8	2.5	4.7	500/100
	14	2.5	Blue	2846.0	12	18	12	2.5	4.7	500/100
	14	2.5	Blue	2847.0	18	24	18	2.5	4.7	500/100
	12	4	Gray	2848.0	10	17	10	3.2	5.4	500/100
	12	4	Gray	2849.0	12	20	12	3.2	5.4	500/100
	12	4	Gray	2850.0	18	26	18	3.2	5.4	100
	10	6	Yellow	2851.0	12	20	12	3.9	6.9	100
	10	6	Yellow	2852.0	18	26	18	3.9	6.9	100
	8	10	Red	2853.0	12	22	12	4.9	8.4	100
	8	10	Red	2854.0	18	28	18	4.9	8.4	100
	6	16	Blue	2855.0	12	24	12	6.2	9.6	100
	6	16	Blue	2856.0	18	28	18	6.2	9.6	100
	4	25	Yellow	2857.0	18	30	18	7.7	12	50
	4	25	Yellow	2858.0	22	36	22	7.7	12	50
	2	35	Red	2859.0	18	30	18	8.7	13.5	50
	2	35	Red	2860.0	25	39	25	8.7	13.5	50
	1	50	Blue	2861.0	20	36	20	10.9	16	50

* Different standard packs are available as shown. To order the desired standard pack, please use the quantity required as a suffix to the cat. no.
Example for 100 standard pack: Cat. No. 2863.0/100

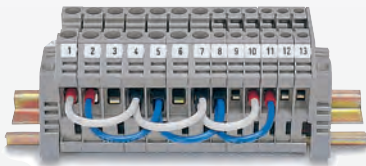
Original Dual Wire Ferrules



Tested According To:

- CSA Std C22.2 No. 65-93 - Wire Connectors
- CSA Std C22.2 No. 188-M1983 - Splicing Wire and Cable Connectors
- ANSI/UL Std No. 486A - Wire Connectors and Soldering Lugs for Use with Copper Conductors
- ANSI/UL Std No. 486C - Splicing Wire Connectors

Wires x AWG	mm ²	Color	Cat. No.	Barrel Length (B) mm	Ferrule Dimensions mm					Std. Pack*
					A	B	C	D1	D2	
2x20	2x0.50	White	2794.0	11	14.6	8.2	1.7	3	5	500/100
2x18	2x0.75	Gray	2775.0	11	14.6	8.2	2.0	3	5.5	500/100
2x18	2x0.75	Gray	2795.0	13	16.4	10	2.0	3	5.5	500/100
2x18	2x1	Red	2776.0	11	15.4	8.2	2.4	3.2	5.8	500/100
2x18	2x1	Red	2796.0	21	25.2	18	2.4	3.2	5.8	500/100
2x16	2x1.5	Black	2777.0	12	15.8	8.2	2.6	3.6	6.5	500/100
2x16	2x1.5	Black	2797.0	16	19.6	12	2.6	3.6	6.5	500/100
2x14	2x2.5	Blue	2778.0	14	18.5	10	3.3	4.5	8	500/100
2x14	2x2.5	Blue	2798.0	17	20.5	12	3.3	4.5	8	500/100
2x12	2x4	Gray	2799.0	16	22	12	3.9	5.2	9	100
2x10	2x6	Yellow	2800.0	18	23	12	5	6.2	11.4	100
2x8	2x10	Red	2801.0	18	24	12	6.2	7.6	13.4	100
2X6	2x16	Blue	2802.0	20	29	16	8.9	9.5	17.2	100/50



* Different standard packs are available for many ferrules. To order the desired standard pack, please use the quantity required as a suffix to the Cat. No.

Example: Cat. No. 2794.0/100 for a standard pack of 100

Ferrule Qty.	AWG	mm ²	Ferrule Cat. No.	Ferrule Color	Type	Cat. No.	Std. Pack
AB1-S Industry Standard					AB1-S	2884.9	1
50	20	0.5	2201.0	Orange			
100	20	0.75	2202.0	White			
100	18	1	2399.0	Yellow			
100	16	1.5	2204.0	Red			
50	14	2.5	2206.0	Blue			
AB2-S Industry Standard					AB2-S	2885.9	1
50	12	4	2208.0	Gray			
20	10	6	2210.0	Black			
20	8	10	2212.0	Ivory			
10	6	16	2214.0	Green			
AB1-D DIN Standard					AB1-D	2884.0	1
50	20	0.5	2864.0	White			
100	20	0.75	2867.0	Gray			
100	18	1	2871.0	Red			
100	16	1.5	2841.0	Black			
50	14	2.5	2845.0	Blue			
AB2-D DIN Standard					AB2-D	2885.0	1
50	12	4	2848.0	Gray			
20	10	6	2851.0	Yellow			
20	8	10	2853.0	Red			
10	6	16	2855.0	Blue			

HIGHLIGHTS

FEATURES

Dual Wire Insulated

Dual Wire Ferrules have larger diameters and special shaped sleeves that accept two conductors of the same or different size. They provide an efficient connection of multiple wires in the same terminal clamp or simplify wire jumpering between terminal clamps. They are color coded with the same convention as the insulated DIN standard ferrules.

To ensure efficient ferrule crimping always select the smallest ferrule diameter that fits the wire and use only professional crimping tools.

- Sleeve: polypropylene
- Tube: tin plated copper

INSULATED FERRULES Assortment Box

Handy Assortment Boxes for convenient dispensing and storage of Industry and DIN Standard Insulated Ferrules. Types AB1-S and AB1-D are equipped with five different ferrule sizes. Types AB2-S and AB2-D are equipped with four different ferrule sizes. Contents of each box is listed.

CRIMPER SELECTOR GUIDE page 18



HIGHLIGHTS

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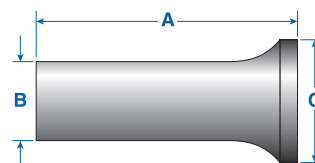
Ferrules insure reliable electrical connections when terminating stranded flexible wire in terminal blocks, circuit breakers or other control devices.

Uninsulated ferrules prevent wire strands from fraying and breaking and are extremely cost effective. Their shorter lengths and uninsulated bodies offer advantages when making terminations in printed circuit board terminal blocks and in other terminal blocks with smaller clamps or narrow widths.

To ensure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire and use only professional crimping tools. (Please refer to the ordering pages and the Crimper Selector Guide on page 18.)

- Tube: tin plated copper

Original Uninsulated Ferrules



Tested According To:

CSA Std C22.2 No. 65-93	- Wire Connectors
CSA Std C22.2 No. 188-M1983	- Splicing Wire and Cable Connectors
ANSI/UL Std No. 486A	- Wire Connectors and Soldering Lugs for Use with Copper Conductors
ANSI/UL Std No. 486C	- Splicing Wire Connectors

AWG	mm ²	Cat. No.	Barrel Length (A)		Ferrule Dimensions mm			Std. Pack*
			mm	A	B (ID)	C		
20	0.5	2216.0	6	6	1.3	2.1	1000/100	
18	0.75	2217.0	6	6	1.5	2.3	1000/100	
18	0.75	2218.0	10	10	1.5	2.3	1000/100	
18	1	2219.0	6	6	1.7	2.5	1000/100	
18	1	2220.0	10	10	1.7	2.5	1000/100	
16	1.5	2221.0	7	7	2.3	2.8	1000/100	
16	1.5	2222.0	10	10	2.3	2.8	1000/100	
14	2.5	2223.0	7	7	2.5	3.4	1000/100	
14	2.5	2224.0	12	12	2.5	3.4	1000/100	
12	4	2225.0	9	9	3.2	4.0	1000/100	
12	4	2226.0	12	12	3.2	4.0	1000/100	
10	6	2227.0	12	12	3.9	4.7	500/100	
10	6	2388.0	15	15	3.9	4.7	500/100	
8	10	2228.0	12	12	4.9	5.8	500/100	
8	10	2389.0	15	15	4.9	5.8	500/100	
8	10	2229.0	18	18	4.9	5.8	500/100	
6	16	2391.0	12	12	6.2	7.5	500/100	
6	16	2392.0	15	15	6.2	7.5	500/100	
6	16	2393.0	18	18	6.2	7.5	100	
4	25	2394.0	15	15	7.7	9.5	500/100	
4	25	2395.0	18	18	7.7	9.5	100	
2	35	2396.0	18	18	8.7	11	100	
1	50	2816.0	32	32	10.9	13	100	
2/0	70	2790.0	25	25	13.3	15	100	
3/0	95	2791.0	32	32	15.3	17	50	
4/0	120	2792.0	32	32	17.5	19	25	
250MCM	150	2793.0	32	32	19.5	21	25	
350MCM	185	2815.0	32	32	21.2	23.5	25	
500MCM	240	2815.5	40	40	23.0	25	25	

CRIMPER SELECTOR GUIDE page 118, 119, 125 and 126

* Different standard packs are available as shown. To order the desired standard pack, please use the quantity required as a suffix to the cat. no.
Example for 100 standard pack: Cat. No. 2216.0/100

UNIVERSAL CRIMPERS FOR ORIGINAL FERRULES

Universal Ferrule Crimpers for Original Ferrules

Front Conductor Entry

One die crimps a wide range of insulated and uninsulated ferrule sizes. Three Universal Ferrule Crimpers are offered to crimp different ferrule and wire size ranges up to 16mm² (6 AWG).

- Positive ratcheting with spring return
- Trapezoidal crimp geometry
- Comfort grip plastic handle
- Hardened steel frame, matte black

Universal Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
----------	--------------	----------------------------	--------------

E110.000	26 - 10	0.14 - 6	1
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Replacement Spring Set:

185140008	Handle Spring Set
318001002	Ratchet Spring

Universal Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
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E110.005	20 - 8	0.5 - 10	1
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Replacement Spring Set:

185140008	Handle Spring Set
318001002	Ratchet Spring

Universal Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
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E110.010	8 - 6	10 - 16	1
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Replacement Spring Set:

185140008	Handle Spring Set
318001002	Ratchet Spring

Ferrule Crimper

Side Conductor Entry

Individual crimp cavities conform to industry standard insulated and uninsulated ferrules from 25-50mm² (4-1 AWG).

- Positive ratcheting with spring return
- Emergency release
- Trapezoidal crimp geometry
- Comfort grip plastic handle
- Hardened steel frame, matte black

Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
----------	--------------	----------------------------	--------------

E110.015	4 - 2	25 - 35	1
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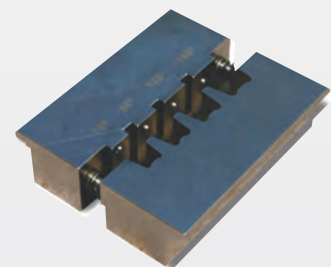
Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
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E110.020	1	50	1
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Vise Mount Ferrule Crimper



Part No.	Wire/ AWG	Ferrule mm ²	Std. Pack
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22.030	2/0-250 MCM	70 - 150	1
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HIGHLIGHTS

FEATURES

Altech's pneumatic crimping tools speed the crimping process of insulated or uninsulated ferrules for a wide range of wire sizes up to 8 AWG.

Altech pneumatic crimpers are simple and easy to use. Just install the ferrule over the end of the stripped wire and insert it into either the front or side tool opening. Then touch the actuating lever or push the foot switch pedal to initiate the crimp cycle. Once the head closes it will automatically re-open after crimping. The resulting crimp features a compact trapezoidal cross section which is mechanically very strong and provides a large surface to insure a highly efficient electrical contact.

Crimp ferrules efficiently and economically. A unique dual crimping head provides convenient front or side wire entry, allowing crimping from multiple positions. This feature makes crimping in tight places simple.

Choose either lever actuated, hand held units or hands-free foot switch operated table top models, in two basic tool sizes. Hand held models feature a flexible coil air hose with 1/4" NPT interchange connector for quick hook-up with a standard push-to-connect coupler.

The table top units also include a flexible coil air hose to the foot switch and a 1/4" NPT interchange located on the foot switch for one hand push-to-connect supply hook-up. They feature a sturdy metal base with integral table clamp and dual storage trays for quick access to the ferrule supply. The air release port on the foot switch has been quieted with a sintered bronze air silencer. The foot switch has a metal frame and a tough fiberglass shroud. Its spring return pedal provides for short actuating cycles.

Optional items for the hand held crimper include a counterbalance for maximum control and a magnetic holder for storage.

Pneumatic Crimping Tool for Original Ferrules



- Operates on 60 - 90 psi air supply
- Crimp insulated and uninsulated ferrules
- Trapezoidal crimp geometry
- Flexible coil air hose with 1/4" NPT interchange
- Metal tool body and base
- Hardened steel crimp head

Tool	Wire/ Ferrule Size AWG	mm ²	Cat. No.	Tool Wt. g (lbs.)	Std. Pack
Hand Held Crimper with Actuating Lever Crimp Insulated Ferrules and Uninsulated Ferrules	24-14	0.25-2.5	22.014	430 (.95)	1
Hand Held Crimper with Actuating Lever Crimp Insulated Ferrules and Uninsulated Ferrules	12-8	4-10	22.015	430 (.95)	1
Table Top Crimper with Foot Switch and Storage Trays Crimp Insulated Ferrules and Uninsulated Ferrules	24-14	0.25-2.5	22.016	1000 (2.20)	1
Table Top Crimper with Foot Switch and Storage Trays Crimp Insulated Ferrules and Uninsulated Ferrules	12-8	4-10	22.017	1000 (2.20)	1
Magnetic Mounting Holder <i>for hand held pneumatic crimpers</i>			22.018	---	1
Counterbalance <i>for hand held pneumatic crimpers</i>			22.019	---	1

Original Ferrule and Wire Size by Crimper Type

Use this Selector Guide to determine ferrule and wire sizes which can be crimped. Refer to following pages for selection and ordering information of crimpers.

1. Determine the wire size(s) to be used.
2. To insure efficient ferrule crimping, always select the smallest ferrule diameter that fits the wire.
3. Based on the ferrule size, choose the crimper type appropriate for use.
4. Select the crimper style best suited for your application.

		CRIMPER STYLES										
		UNIVERSAL FERRULE CRIMPER					PNEUMATIC FERRULE CRIMPER				WISE MOUNT FERRULE CRIMPER	
Wire Size AWG	Ferrule Size mm ²	Crimper Type	E110.000	E110.005	E110.010	E110.015	E110.020	22.014 *	22.015	22.016 *	22.017	22.030
26	0.14		■									
24	0.25						■					
22	0.34		■									
20	0.50			■								
20	0.75											
18	1						■					
16	1											
14	2.5							■				
12	4								■			
10	6		■									
8	10			■								
6	16				■							
4	25					■						
2	35						■					
1	50											
2/0	70											■
3/0	95											
4/0	120											
250MCM	150											■

Dual Wire Ferrules

E110.000 crimper covers 2x20 to 2x12 AWG dual wire ferrules
 E110.010 crimper covers 2x10 to 2x8 AWG dual wire ferrules
 E110.015 crimper covers 2x6 AWG dual wire ferrules

Key:

■ = Cavity Range

* Insulated ferrule/wire size range is shown, uninsulated ferrule range is 16-14 AWG (1.5 - 2.5mm²).