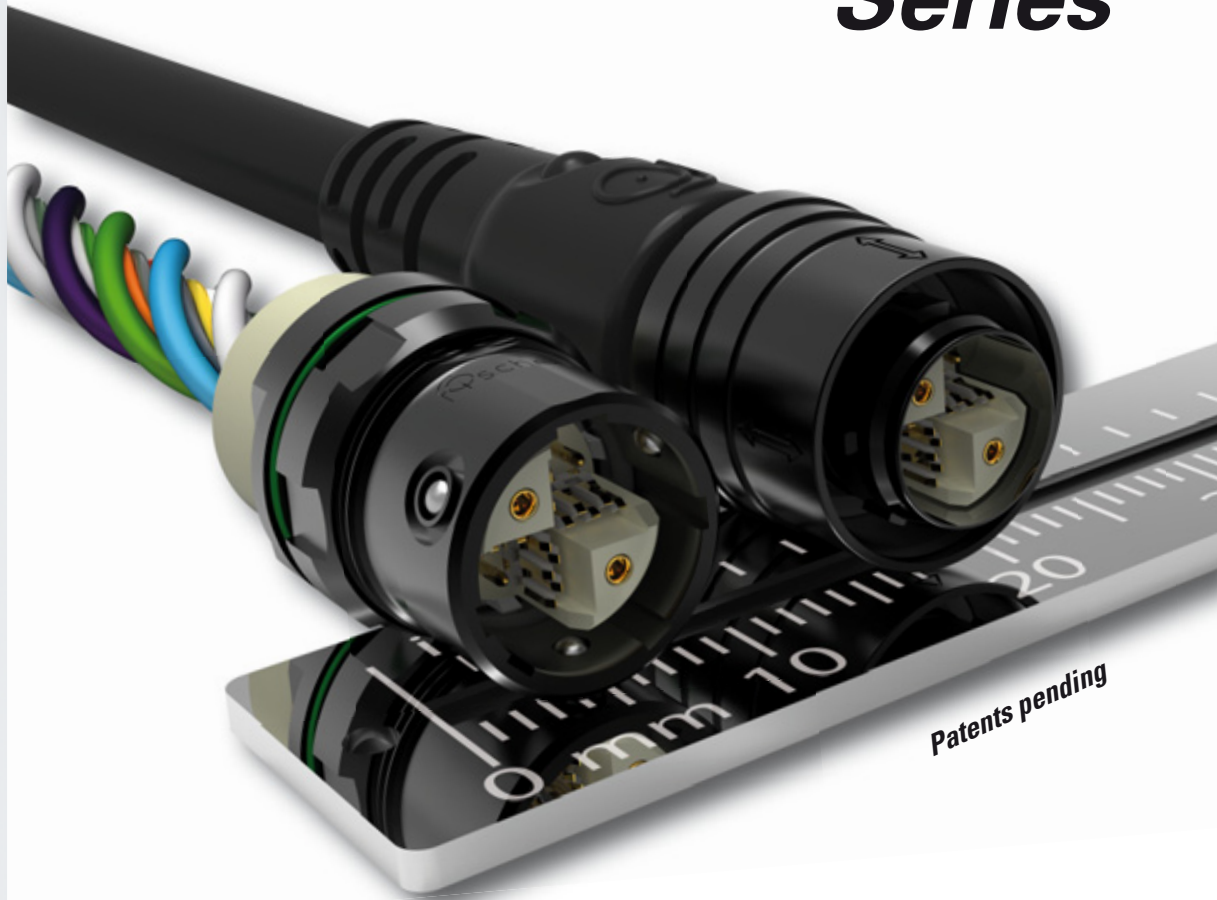


Fischer **MiniMax**TM Series



Cable Assembly
Instructions

Connect²

Expertise | Reliability | Innovation



Headquarters
Fischer Connectors SA
Ch. du Glapin 20
1162 Saint-Prex
Switzerland
Phone +41 21 800 95 95
mail@fischerconnectors.ch
www.fischerconnectors.com

Edition 3.3

fischer[®]
CONNECTORS

Introduction

Connect² Innovation

The Fischer MiniMax™ Series increases the performance of your ruggedized devices, handling more mixed signal and power connections, while saving money, space and weight. This innovative, first to market, high-density miniature solution uses proven technology from the automotive and telecom industry.

The Fischer MiniMax™ includes pre-cabled plugs and pre-wired receptacles, overmolding and protection caps. Choose push-pull, quick release or screw lock connections.

This brochure is an overview of the cable assembly instructions for the different cables Fischer Connectors is currently offering for the Fischer MiniMax™ Series, including a conversion sheet of the different cables specifications.

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NOTE

As of the end of April 2013, production of the straight wire cable has transitioned to the 20 Color. Pre-cabled units with the 14 Color may still be available.

Twisted pair cable (Datacom)

Cable 24-Way Screened

1. STRAIN CORD (CENTRE)

Kevlar (10kgf breaking strain)

2. WIRES A

4 x 42/0.10mm (22AWG) PLAIN COPPER ISOLATED TPE

3. WIRES B

10 x 2 x 7/0.10mm (30AWG) PLAIN COPPER ISOLATED TPE

4. Separators

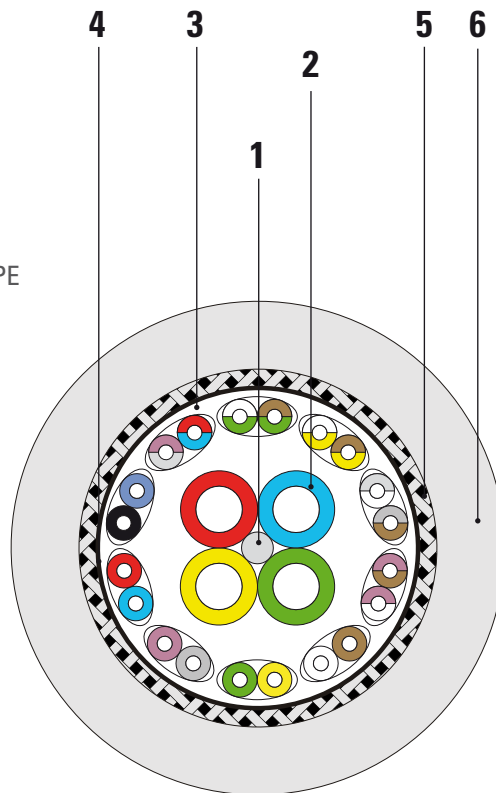
Nonwoven ribbon

5. Screen

Tinned copper wire braid, overlap 90%

6. SHEATH

Black PUR



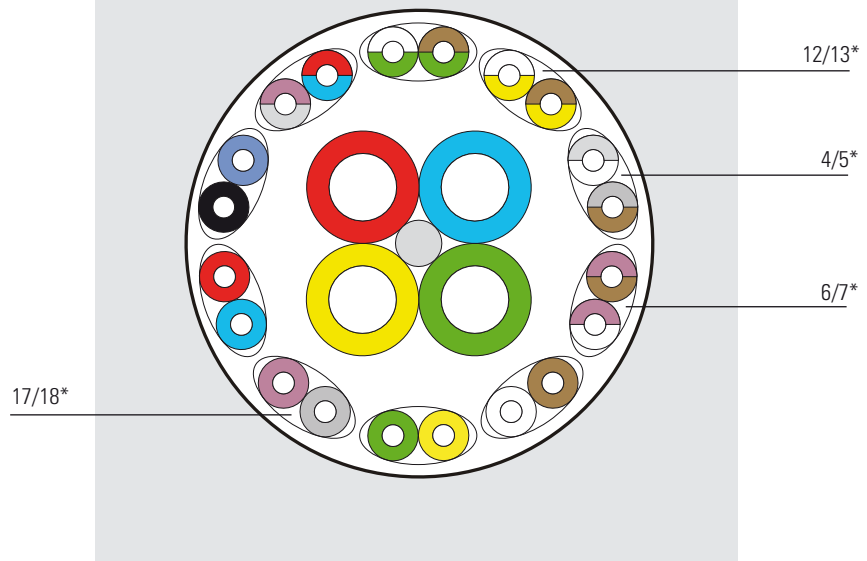
Product Specification

Conductors A	4 x 42/0.10mm (22AWG)
Core colors	Red, blue, green, yellow
Conductors B	10 x 2 x 7/0.10mm (30AWG)
Core colors	black, violet, pink / grey, white / grey, brown / grey, brown / pink, white / pink, brown, red, blue, brown / green, white/ yellow, brown / yellow, white, yellow, green, pink, grey, red / blue, white / green.
Centre	Kevlar (10kg breaking strain)
Screen	Tinned copper wire braid, overlap 90%
Sheath	Halogen Free PUR
UV resistance	Yes
Dia. over Sheath	6.7mm
Color	Black
Finish	Matt
ROHS-Compliant	Yes
Operating voltage	500V
Insulation resistance	20MΩ/km at 20°C
Weight	56kg/km
Impedance	125Ω +/- 20%
Diaphony	> 1 MHz

This information is confidential and only intended for the person to whom it is addressed.

Twisted pair cable (Datacom)

AWG size	Plug		Receptacle		Data transmission
	pin number	wire color	pin number	wire color	
30	1	black	1	grey	
30	2	violet	2	pink	
30	3	pink/grey	3	turquoise	
30	4	white / grey	4	brown / black	OK
30	5	brown / grey	5	orange / black	
30	6	brown / pink	6	green / black	OK
30	7	white / pink	7	white / black	
30	8	brown	8	yellow	
30	9	red	9	brown	
30	10	blue	10	orange	
30	11	brown / green	11	pink / black	
30	12	white / yellow	12	grey / black	OK
30	13	brown / yellow	13	red	
30	14	white	14	black	
30	15	yellow	15	yellow / black	
30	16	green	16	white	
30	17	pink	17	green	OK
30	18	grey	18	blue	
30	19	red / blue	19	violet	
30	20	white / green	20	tan	
22	21	GREEN	21	GREEN	
22	22	YELLOW	22	YELLOW	
22	23	RED	23	RED	
22	24	BLUE	24	BLUE	



* Only use the following pairs for data transmission: 4/5, 6/7, 12/13, 17/18

Straight wire cable, 14 colors (Industrial)

Cable 24-Way Screened

1. STRAIN CORD (CENTRE)

KEVLAR TWINE (9.5kgf BREAKING STRAIN)

2. WIRES A

4 x 19/0.15mm (22AWG) PLAIN COPPER INSULATED LSF COMPOUND TO DIA 1.25mm NOM., COLOR-CODED (RADIAL THICKNESS OF INSULATION: 0.25mm NOM.)

3. WIRES B

20 x 14/0.071mm (30AWG) PLAIN COPPER INSULATED LSF COMPOUND TO DIA 0.65mm NOM., COLOR-CODED (RADIAL THICKNESS OF INSULATION: 0.17mm NOM.)

4. Separators

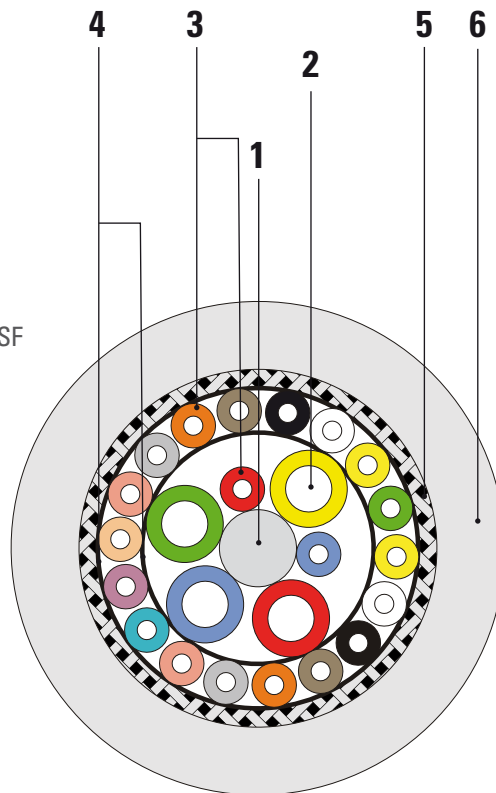
Polyester tapes

5. Screen

Tinned copper wire braid

6. SHEATH

MATT-BLACK POLYURETHANE TO DIA 6.6mm NOM., 6.7mm MAX. (RADIAL THICKNESS OF SHEATH: 0.8mm APPROX.)



Product Specification

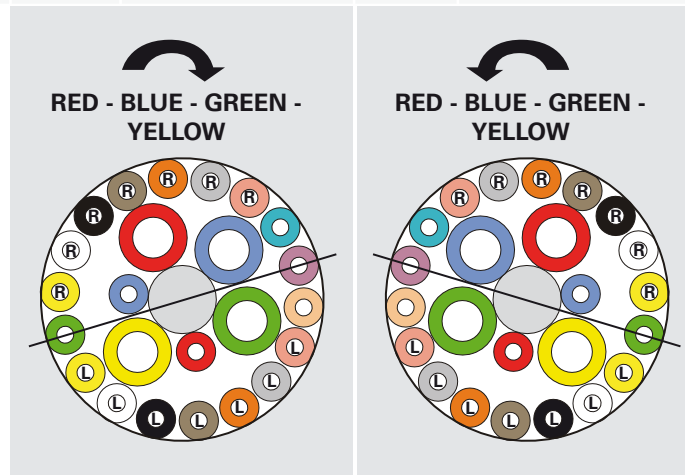
24-CORE CABLE, OUR REF: 24X1507UBDK/MBK (Drawing Issue: 01)

Conductors A:	4 x 19/0.15mm (22AWG) plain annealed copper
Nominal DC Resistance:	0.051Ω/m
Insulation:	Low Smoke Zero Halogen compound to diameter 1.25mm nominal
Core colors:	Red, blue, green, yellow
Conductors B:	20 x 14/0.071mm (30AWG) plain annealed copper
Nominal DC Resistance:	0.316Ω/m
Insulation:	Low Smoke Zero Halogen compound to diameter 0.72mm nominal
Core colors:	Red, blue, green, turquoise, violet, tan, 2xgrey, 2xpink, 2xyellow, 2xbrown, 2xwhite, 2xblack, 2xorange
Centre:	Aramid fiber yarn strain cord
Lay Up:	Circular, color sequence in accordance with drawing
Screen:	0.122mm diameter tinned copper wire braid, 90% minimum coverage
Sheath:	Flame-proof, Halogen-free Polyurethane
Dia. over Sheath:	6.6mm nominal
Color:	Black
Finish:	Matt
ROHS-Compliant:	Yes
Operating voltage:	250V
Test voltage:	500V
Insulation resistance:	20MΩ/km at 20°C

This information is confidential and only intended for the person to whom it is addressed.

Straight wire cable, 14 colors (Industrial)

AWG size	Plug (clockwise)		Plug (counter clockwise)		Receptacle	
	pin number	wire color / wire side R = right L = left	pin number	wire color / wire side R = right L = left	pin number	wire color / wire length S = short (110mm) L = long (130mm)
30	1	grey R	1	grey R	1	grey S
30	2	pink R	2	pink R	2	pink S
30	3	turquoise	3	turquoise	3	turquoise S
30	4	brown L	4	brown L	4	brown L
30	5	orange L	5	orange L	5	orange L
30	6	black L	6	black L	6	black L
30	7	white L	7	white L	7	white L
30	8	yellow R	8	yellow R	8	yellow L
30	9	brown R	9	brown R	9	brown S
30	10	orange R	10	orange R	10	orange S
30	11	pink L	11	pink L	11	pink L
30	12	grey L	12	grey L	12	grey L
30	13	red	13	red	13	red S
30	14	green	14	green	14	green S
30	15	yellow L	15	yellow L	15	yellow S
30	16	white R	16	white R	16	white S
30	17	black R	17	black R	17	black S
30	18	blue	18	blue	18	blue S
30	19	violet	19	violet	19	violet S
30	20	tan	20	tan	20	tan S
22	21	GREEN	21	GREEN	21	GREEN
22	22	YELLOW	22	YELLOW	22	YELLOW
22	23	RED	23	RED	23	RED
22	24	BLUE	24	BLUE	24	BLUE



Straight wire cable, 20 colors (Industrial)

Cable 24-Way Screened

1. STRAIN CORD (CENTRE)

KEVLAR TWINE (9.5kgf BREAKING STRAIN)

2. WIRES A

4 x 19/0.15mm (22AWG) PLAIN COPPER INSULATED LSF COMPOUND TO DIA 1.25mm NOM., COLOR-CODED (RADIAL THICKNESS OF INSULATION: 0.25mm NOM.)

3. WIRES B

20 x 14/0.071mm (30AWG) PLAIN COPPER INSULATED LSF COMPOUND TO DIA 0.65mm NOM., COLOR-CODED (RADIAL THICKNESS OF INSULATION: 0.17mm NOM.)

4. Separators

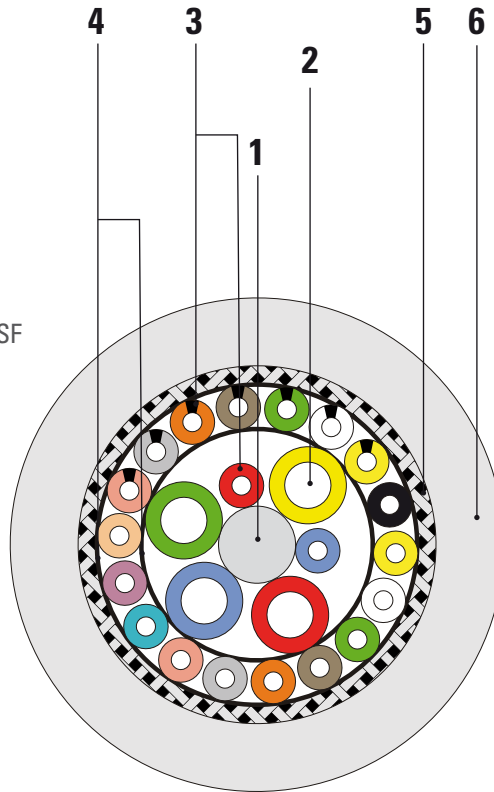
Polyester tapes

5. Screen

Tinned copper wire braid

6. SHEATH

MATT-BLACK POLYURETHANE TO DIA 6.6mm NOM., 6.7mm MAX. (RADIAL THICKNESS OF SHEATH: 0.8mm APPROX.)



Product Specification

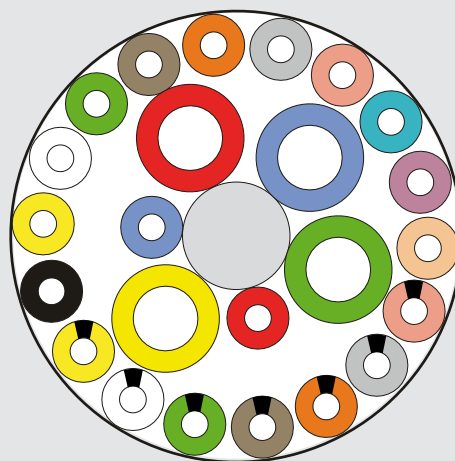
24-CORE CABLE, OUR REF: 24X1507UBDK/MBK (Drawing Issue: 01)

Conductors A:	4 x 19/0.15mm (22AWG) plain annealed copper
Nominal DC Resistance:	0.05Ω/m
Insulation:	Low Smoke Zero Halogen compound to diameter 1.25mm nominal
Core colors:	Red, blue, green, yellow
Conductors B:	20 x 14/0.071mm (30AWG) plain annealed copper
Nominal DC Resistance:	0.316Ω/m
Insulation:	Low Smoke Zero Halogen compound to diameter 0.72mm nominal
Core colors:	Red, blue, green, turquoise, violet, tan, grey, pink, yellow, brown, white, black, orange, grey / black, pink / black, yellow / black, brown / black, white / black, green / black, orange / black
Centre:	Aramid fiber yarn strain cord
Lay Up:	Circular, color sequence in accordance with drawing
Screen:	0.122mm diameter tinned copper wire braid, 90% minimum coverage
Sheath:	Flame-proof, Halogen-free Polyurethane
Dia. over Sheath:	6.6mm nominal
Color:	Black
Finish:	Matt
ROHS-Compliant:	Yes
Operating voltage:	250V
Test voltage:	500V
Insulation resistance:	20MΩ km at 20°C

This information is confidential and only intended for the person to whom it is addressed.

Straight wire cable, 20 colors (Industrial)

AWG size	Plug		Receptacle	
	pin number	wire color	pin number	wire color
30	1	grey	1	grey
30	2	pink	2	pink
30	3	turquoise	3	turquoise
30	4	brown / black	4	brown / black
30	5	orange / black	5	orange / black
30	6	green / black	6	green / black
30	7	white / black	7	white / black
30	8	yellow	8	yellow
30	9	brown	9	brown
30	10	orange	10	orange
30	11	pink / black	11	pink / black
30	12	grey / black	12	grey / black
30	13	red	13	red
30	14	black	14	black
30	15	yellow / black	15	yellow / black
30	16	white	16	white
30	17	green	17	green
30	18	blue	18	blue
30	19	violet	19	violet
30	20	tan	20	tan
22	21	GREEN	21	GREEN
22	22	YELLOW	22	YELLOW
22	23	RED	23	RED
22	24	BLUE	24	BLUE



Conversion table for straight wire cables (Industrial)

STRAIGHT WIRE CABLE, 20 COLORS					
AWG size	Plug		Receptacle		
	pin number	wire color	pin number	wire color	wire color
30	1	grey	1	grey	grey
30	2	pink	2	pink	pink
30	3	turquoise	3	turquoise	turquoise
30	4	brown/black	4	brown/black	brown/black
30	5	orange/black	5	orange/black	orange/black
30	6	green/black	6	green/black	green/black
30	7	white/black	7	white/black	white/black
30	8	yellow	8	yellow	yellow
30	9	brown	9	brown	brown
30	10	orange	10	orange	orange
30	11	pink/black	11	pink/black	pink/black
30	12	grey/black	12	grey/black	grey/black
30	13	red	13	red	red
30	14	black	14	black	black
30	15	yellow/black	15	yellow/black	yellow/black
30	16	white	16	white	white
30	17	green	17	green	green
30	18	blue	18	blue	blue
30	19	violet	19	violet	violet
30	20	tan	20	tan	tan
22	21	GREEN	21	GREEN	GREEN
22	22	YELLOW	22	YELLOW	YELLOW
22	23	RED	23	RED	RED
22	24	BLUE	24	BLUE	BLUE

STRAIGHT WIRE CABLE, 14 COLORS						
AWG size	Plug (clockwise)		Plug (counter clockwise)		Receptacle	
	pin number	wire color / wire side R = right L = left	pin number	wire color / wire side R = right L = left	pin number	wire color / wire length S = short (110mm) L = long (130mm)
30	1	grey R	1	grey R	1	grey S
30	2	pink R	2	pink R	2	pink S
30	3	turquoise	3	turquoise	3	turquoise S
30	4	brown L	4	brown L	4	brown L
30	5	orange L	5	orange L	5	orange L
30	6	black L	6	black L	6	black L
30	7	white L	7	white L	7	white L
30	8	yellow R	8	yellow R	8	yellow L
30	9	brown R	9	brown R	9	brown S
30	10	orange R	10	orange R	10	orange S
30	11	pink L	11	pink L	11	pink L
30	12	grey L	12	grey L	12	grey L
30	13	red	13	red	13	red S
30	14	green	14	green	14	green S
30	15	yellow L	15	yellow L	15	yellow S
30	16	white R	16	white R	16	white S
30	17	black R	17	black R	17	black S
30	18	blue	18	blue	18	blue S
30	19	violet	19	violet	19	violet S
30	20	tan	20	tan	20	tan S
22	21	GREEN	21	GREEN	21	GREEN
22	22	YELLOW	22	YELLOW	22	YELLOW
22	23	RED	23	RED	23	RED
22	24	BLUE	24	BLUE	24	BLUE

NOTE

As of the end of April 2013, production of the straight wirecable has transitioned to the 20 Color version. Pre-cabled units with the 14 Color version may still be available.

Fischer sales network

Headquarters

FISCHER CONNECTORS SA
Ch. du Glapin 20
1162 Saint-Prex
Switzerland
Phone +41 21 800 95 95
www.fischerconnectors.ch
mail@fischerconnectors.ch

Subsidiaries

United States and Canada

FISCHER CONNECTORS Inc.
Atlanta, GA
Phone +1 678 393 5400
Toll free: 800 551 0121
www.fischerconnectors.com
mail@fischerconnectors.com

France

FISCHER CONNECTORS Sarl
Paris
Phone +33 1 5578 2578
Appel gratuit: 0 800 590 444
www.fischerconnectors.fr
mail@fischerconnectors.fr

Germany and Eastern Europe

FISCHER CONNECTORS GmbH
Zorneding
Phone +49 8106 37722 0
Gebührenfrei: 0 800 233 3233
www.fischerconnectors.de
mail@fischerconnectors.de

Italy

FISCHER CONNECTORS Srl
Monza
Phone +39 039 734 072
www.fischerconnectors.it
mail@fischerconnectors.it

Sweden and Finland

FISCHER CONNECTORS AB
Billdal
Phone +46 31 910 420
www.fischerconnectors.se
mail@fischerconnectors.se

United Kingdom, Ireland

FISCHER CONNECTORS Ltd.
Havant/Hampshire
Phone +44 23 9245 9600
Toll free: 0 800 432 0301
www.fischerconnectors.co.uk
sales@fischerconnectors.co.uk

India

FISCHER CONNECTORS India Pvt. Ltd.
Gurgaon - Haryana
Phone +91 124 4255642 to 45
www.fischerconnectors.in
raman.kalra@fischerconnectors.in

Asia

FISCHER CONNECTORS ASIA Ltd.
Hong Kong
Phone +852 2620 6118
www.fischerconnectors.hk
mail@fischerconnectors.hk



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