

### FMD611 Data cables



- PVC outer jacket
- Shielded
- Oil-resistant
- Flame resistance
- Low cost

### Dynamic Information

	Min. bending radius	Moving in cable carriers	7,5 x d
		Flexible moving	6 x d
		Fixed installation	4 x d
	Temperature	Moving in cable carriers	+5°C to +70°C
		Flexible moving	-5°C to +70°C
		Fixed installation	-15°C to +70°C
	v max.	Unsupported	5 m/s
		Gliding	3 m/s
	a max.	50 m/s <sup>2</sup>	
	Travel distance	Unsupported travels and up to 100 m for gliding applications	

### Cable structure

	Conductor	Fine bare copper stranded wires with high flexibility design
	Conductor insulation	Mechanically high-quality TPE compound.
	Conductor construction	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
	Color code	Colour code following DIN 47100
	Intermediate layer	Foil taping over the outer layer.
	Overall shield	Extremely flexible braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	Outer jacket	Low-adhesion, oil-resistant PVC mixture, adapted to suit the requirements in cable carriers. Color: Grey RAL 7001

## Electrical Information

	Nominal voltage	U <sub>0</sub> /U: 300/300 V (following VDE0298-3)
	Test voltage	1500 V (following EN50395)

## Properties and approvals

	Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS), bio-oil-resistant (following VDMA24568, tested by SGS)
	Flame resistance	According to IEC 60332-1-2、VW-1、FT1
	REACH	According to the regulation (EC) No. 1907/2006 (REACH)
	EAC	Certificate No. KG 417/043.CN.02.00249
	Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
	Cleanroom	Following ISO 14644-1
	CE	Following 2014/35/EU
	UL	Following UL2464, 300V, 80°C

## Guaranteed service life

Double strokes	5 million times	7.5 million times	10 million times
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
+5/+15	10	11	12
+15/+60	7.5	8.5	9.5
+60/+70	10	11	12

### FMD611 Data cables

Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
FMD611.02.01.02	(2×0.25)C	5.0	18.0	33.0
FMD611.02.02.02 <sup>④</sup>	(2x(2x0.25))C	6.5	25.0	51.0
FMD611.02.03.02	(3x(2x0.25))C	7.0	36.0	63.0
FMD611.02.04.02	(4x(2x0.25))C	7.5	44.0	76.0
FMD611.02.05.02	(5x(2x0.25))C	8.5	52.0	92.0
FMD611.02.06.02	(6x(2x0.25))C	9.0	62.0	105.0
FMD611.02.08.02	(8x(2x0.25))C	10.5	78.0	137.0
FMD611.02.10.02	(10x(2x0.25))C	12.0	90.0	170.0
FMD611.02.14.02	(14x(2x0.25))C	12.0	119.0	204.0
FMD611.03.03.02	(3x(2x0.34))C	8.0	44.0	86.0
FMD611.03.08.02	(8x(2x0.34))C	12.0	102.0	206.0
FMD611.05.01.02	(2×0.5)C	6.0	25.0	51.0
FMD611.05.02.02 <sup>④</sup>	(2x(2x0.5))C	7.0	46.0	90.0
FMD611.05.03.02	(3x(2x0.5))C	9.0	61.0	109.0
FMD611.05.04.02	(4x(2x0.5))C	9.5	74.0	125.0
FMD611.05.05.02	(5x(2x0.5))C	11.0	91.0	153.0
FMD611.05.06.02	(6x(2x0.5))C	11.5	103.0	189.0
FMD611.05.08.02	(8x(2x0.5))C	13.0	137.0	234.0
FMD611.05.10.02	(10x(2x0.5))C	15.5	181.0	326.0
FMD611.05.14.02	(14x(2x0.5))C	16.0	193.0	341.0

④) Cables marked with ④ are four-star twisted design.

Note: The outer diameters are reference values.

G: With green-yellow earth core

x: Without earth core

## FMD612 Data cables



- PVC outer jacket
- Shielded
- Oil-resistant
- Flame resistance
- Low cost



## Dynamic Information

	Min. bending radius	Moving in cable carriers	10 x d
		Flexible moving	8 x d
		Fixed installation	5 x d
	Temperature	Moving in cable carriers	5°C to +70°C
		Flexible moving	-5°C to +70°C
		Fixed installation	-15°C to +70°C
	v max.	Unsupported	3 m/s
		Gliding	2 m/s
	a max.	20 m/s <sup>2</sup>	
	Travel distance	Unsupported travels and up to 50 m for gliding applications	









## Cable structure

	Conductor	Fine bare copper stranded wires with high flexibility design
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	The individual cores are wound in layers with a short pitch length.
	Color code	Colour code following DIN 47100
	Intermediate layer	Foil taping over the outer layer.
	Overall shield	Extremely flexible braiding made of tinned copper wires. Coverage linear approx. 70%, optical approx. 90%
	Outer jacket	Low adhesion mixture on the basis of PVC, adapted to suit the requirements in cable carriers. Color: Grey RAL 7001

### Electrical Information

 Nominal voltage	U <sub>0</sub> /U: 300/300 V (following VDE0298-3)
 Test voltage	1500 V (following EN50395)

### Properties and approvals

 Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS), bio-oil-resistant (following VDMA24568, tested by SGS)
 Flame resistance	According to IEC 60332-1-2、VW-1、FT1
 REACH	According to the regulation (EC) No. 1907/2006 (REACH)
 EAC	Certificate No. KG 417/043.CN.02.00249
 Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
 Cleanroom	Following ISO 14644-1
 CE	Following 2014/35/EU
 UL	Following UL2464, 300V, 80°C

### Guaranteed service life

Double strokes	5 million times		7.5 million times		10 million times	
	< 10 m	≥ 10 m	< 10 m	≥ 10 m	< 10 m	≥ 10 m
	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
Temperature, from/to [°C]						
+5/+15	12.5	15	13.5	16	14.5	17
+15/+60	10	12.5	11	13.5	12	14.5
+60/+70	12.5	15	13.5	16	14.5	17

**FMD612 Data cables**

Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
FMD612.01.03	(3×0.14)C	5.0	12.0	28.0
FMD612.01.04	(4×0.14)C	5.0	17.0	32.0
FMD612.01.05	(5×0.14)C	5.5	19.0	37.0
FMD612.01.07	(7×0.14)C	6.0	25.0	47.0
FMD612.01.14	(14×0.14)C	7.0	41.0	75.0
FMD612.01.18	(18×0.14)C	7.5	51.0	90.0
FMD612.01.24	(24×0.14)C	8.5	64.0	125.0
FMD612.02.03	(3×0.25)C	5.0	19.0	35.0
FMD612.02.04	(4×0.25)C	5.5	23.0	45.0
FMD612.02.05	(5×0.25)C	6.0	28.0	49.0
FMD612.02.07	(7×0.25)C	6.5	35.0	61.0
FMD612.02.08	(8×0.25)C	7.0	39.0	68.0
FMD612.02.14	(14×0.25)C	7.5	60.0	92.0
FMD612.02.18	(18×0.25)C	8.5	71.0	122.0
FMD612.02.24	(24×0.25)C	10.0	95.0	161.0
FMD612.03.02	(2×0.34)C	5.5	21.0	37.0
FMD612.03.03	(3×0.34)C	5.5	29.0	42.0
FMD612.03.04	(4×0.34)C	6.0	33.0	51.0
FMD612.03.05	(5×0.34)C	6.5	38.0	56.0
FMD612.03.07	(7×0.34)C	7.5	50.0	77.0
FMD612.03.10	(10×0.34)C	8.0	58.0	97.0
FMD612.03.14	(14×0.34)C	8.0	74.0	112.0
FMD612.03.18	(18×0.34)C	9.0	91.0	139.0
FMD612.03.24	(24×0.34)C	10.0	119.0	177.0

Note: The outer diameters are reference values.

G: With green-yellow earth core

x: Without earth core

### FMD900 Data cables



- TPE outer jacket
- Shielded
- Oil-resistant
- UV-resistance
- Resistant to hydrolysis and microbes
- PVC and halogen-free

### Dynamic Information

	Min. bending radius	Moving in cable carriers	6.8 x d
		Flexible moving	5 x d
		Fixed installation	4 x d
	Temperature	Moving in cable carriers	-35°C to +100°C
		Flexible moving	-50°C to +100°C
		Fixed installation	-55°C to +100°C
	v max.	Unsupported	10 m/s
		Gliding	6 m/s
	a max.	100 m/s <sup>2</sup>	
	Travel distance	Unsupported travels and up to 400 m and more for gliding applications	

### Cable structure

	Conductor	Conductor consisting of bare copper wires (according to EN 60228).
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	Cores twisted in pairs with a short pitch length, core pairs then wound with short pitch lengths.
	Color code	Cross -sectional < 1.0mm <sup>2</sup> : Color code in accordance with DIN 47100 Cross -sectional ≥ 1.0 mm <sup>2</sup> : Black cores with white numbers.
	Inner jacket	TPE mixture adapted to suit the requirements in cable carriers.
	Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70 %, optical approx. 90 %
	Outer jacket	Low-adhesion mixture on the basis of TPE, especially abrasion-resistant and highly flexible, adapted to suit the requirements in cable carriers. Color: Steel blue RAL 5011

## Electrical Information

	Nominal voltage	$U_0/U$ : 300/300 V (following VDE0298-3)
	Test voltage	1500 V (following EN50395)

## Properties and approvals

	UV-resistance	High
	Hydrolysis-resistance	High
	Cold-resistant	-55°C
	Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS), bio-oil-resistant (following VDMA24568, tested by SGS)
	Halogen-free	Following IEC60754
	REACH	Accordding to the regulation (EC) No. 1907/2006 (REACH)
	EAC	Certificate No. KG 417/043.CN.02.00249
	Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
	Cleanroom	Following ISO 14644-1
	CE	Following 2014/35/EU
	UL	Following UL21481, 300V, 80°C

## Guaranteed service life

Double strokes	5 million times	7.5 million times	10 million times
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-35/-25	7.5	8.5	9.5
-25/+90	6.8	7.5	8.5
+90/+100	7.5	8.5	9.5



### FMD900 Data cables

Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
FMD900.01.04.02	(4×(2×0.14))C	7.5	30.0	63.0
FMD900.01.18.02	(18×(2×0.14))C	12.5	101.0	202.0
FMD900.02.01.02	(2×0.25)C	6.0	17.0	39.0
FMD900.02.02.02 <sup>④</sup>	(2×(2×0.25))C	6.5	26.0	47.0
FMD900.02.03.02	(3×(2×0.25))C	8.0	35.0	78.0
FMD900.02.04.02	(4×(2×0.25))C	8.5	42.0	90.0
FMD900.02.05.02	(5×(2×0.25))C	9.0	49.0	100.0
FMD900.02.06.02	(6×(2×0.25))C	10.0	69.0	125.0
FMD900.02.09.02	(9×(2×0.25))C	12.5	102.0	208.0
FMD900.02.10.02	(10×(2×0.25))C	13.5	103.0	207.0
FMD900.02.14.02	(14×(2×0.25))C	14.0	124.0	228.0
FMD900.03.08.02	(8×(2×0.34))C	13.0	106.0	209.0
FMD900.05.04.02	(4×(2×0.5))C	9.5	77.0	140.0
FMD900.05.06.02	(6×(2×0.5))C	12.0	103.0	198.0
FMD900.05.08.02	(8×(2×0.5))C	14.5	135.0	251.0
FMD900.07.03.02	(3×(2×0.75))C	10.5	83.0	155.0
FMD900.10.04.02	(4×(2×1))C	12.5	125.0	232.0
FMD900.15.06.02	(6×(2×1.5))C	16.5	247.0	420.0

④) Cables marked with ④ are four-star twisted design.

Note: The outer diameters are reference values.

G: With green-yellow earth core

x: Without earth core

## FMD910 Data cables



- PUR outer jacket
- Shielded
- Oil-resistant and coolant-resistant
- UV-resistance
- Notch-resistant
- Resistant to hydrolysis and microbes
- PVC and halogen-free



## Dynamic Information

	Min. bending radius	Moving in cable carriers	10 x d
		Flexible moving	8 x d
		Fixed installation	5 x d
	Temperature	Moving in cable carriers	-25°C to +80°C
		Flexible moving	-40°C to +80°C
		Fixed installation	-50°C to +80°C
	v max.	Unsupported	3 m/s
		Gliding	2 m/s
	a max.	20 m/s <sup>2</sup>	
	Travel distance	Unsupported travels and up to 50 m for gliding applications	













## Cable structure

	Conductor	Fine bare copper stranded wires with high flexibility design
	Conductor insulation	Mechanically high-quality TPE mixture.
	Conductor construction	The individual cores are wound in layers with a short pitch length.
	Color code	Color code in accordance with DIN 47100
	Intermediate layer	Foil taping over the outer layer.
	Overall shield	Extremely bending-resistant braiding made of tinned copper wires. Coverage linear approx. 70 %, optical approx. 90 %
	Outer jacket	Low-adhesion mixture on the basis of PUR, adapted to suit the requirements in cable carriers (following DIN EN 50363-10-2). Color: Grey RAL 7001

### Electrical Information

	Nominal voltage	$U_0/U$ : 300/300 V (following VDE0298-3)
	Test voltage	1500 V (following EN50395)

### Properties and approvals

	UV-resistance	Medium
	Hydrolysis-resistance	High
	Cold-resistant	-50°C
	Oil resistance	Oil-resistant (following IEC60811-404, tested by SGS), bio-oil-resistant (following VDMA24568, tested by SGS)
	Flame resistance	According to IEC 60332-1-2、VW-1、FT1
	Halogen-free	Following IEC60754
	REACH	According to the regulation (EC) No. 1907/2006 (REACH)
	EAC	Certificate No. KG 417/043.CN.02.00249
	Lead-free	Following 2015/863/EU (RoHS-II Tested by SGS)
	Cleanroom	Following ISO 14644-1
	CE	Following 2014/35/EU
	UL	Following UL20233, 300V, 80°C

### Guaranteed service life

Double strokes	5 million times		7.5 million times		10 million times	
	< 10 m	≥ 10 m	< 10 m	≥ 10 m	< 10 m	≥ 10 m
Temperature, from/to [°C]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]	R min. [factor x d]
-25/-15	12.5	15	13.5	16	14.5	17
-15/+70	10	12.5	11	13.5	12	14.5
+70/+80	12.5	15	13.5	16	14.5	17

**FMD910 Data cables**

Part No.	Number of cores and conductor nominal cross-section [mm]	Outer diameter [mm]	Copper index [kg/km]	Weight [kg/km]
FMD910.01.04	(4×0.14)C	5.5	15	39
FMD910.01.07	(7×0.14)C	6.5	24	54
FMD910.01.08	(8×0.14)C	7	26	64
FMD910.01.14	(14×0.14)C	7.5	41	79
FMD910.01.18	(18×0.14)C	8	51	97
FMD910.01.25	(25×0.14)C	8.5	66	101
FMD910.02.03	(3×0.25)C	5.5	18	41
FMD910.02.04	(4×0.25)C	6	22	45
FMD910.02.05	(5×0.25)C	6	25	50
FMD910.02.07	(7×0.25)C	7	33	65
FMD910.02.08	(8×0.25)C	7	39	72
FMD910.02.14	(14×0.25)C	8	60	103
FMD910.02.18	(18×0.25)C	9	71	122
FMD910.02.25	(25×0.25)C	10.5	97	152
FMD910.03.03	(3×0.34)C	5	25	47
FMD910.03.04	(4×0.34)C	5.5	30	54
FMD910.03.05	(5×0.34)C	6	34	60
FMD910.03.07	(7×0.34)C	6.5	45	84
FMD910.03.14	(14×0.34)C	8	74	126
FMD910.03.18	(18×0.34)C	8.5	91	156

Note: The outer diameters are reference values.

G: With green-yellow earth core

x: Without earth core