

Common Types / 300 V and 500 V

Single, multipair and multitriple, individual and/or collective screen, PVC sheath

- unarmoured
- armoured
- with or without chemical protection, armoured

Technical Data				
Type of insulation/ sheath	PVC/PVC	PVCw/PVCw	PE/PVC	XLPE/PVC
Type of cabling elements	Pair, Triple, PiMF, TiMF, Quad			
No. of cabling elements	1, 2, 4, 5, 6, 8, 10, 12, 16, 20, 24			
Conductor sizes	0.5 mm ² , 0.75 mm ² , 1.0 mm ² , 1.3 mm ² , 1.5 mm ² , 2.5 mm ²			
1. Unarmoured types	RE-Y(St)Y-fl	RE-Yw(St)Yw-fl	RE-2Y(St)Y-fl ¹⁾	RE-2X (St)Y-fl
<ul style="list-style-type: none"> ■ Laying ■ Bending radius 	Recommended for indoor and outdoor installation, on racks, trays, in conduits, in dry and wet locations 7.5 x cable Ø			
2. Armoured types	RE-Y(St)YSWAY ²⁾	RE-Yw(St)YwSWAYw ²⁾	RE-2Y(St)YSWAY ²⁾	RE-2X(St)YSWAY ²⁾
<ul style="list-style-type: none"> ■ Laying ■ Bending radius 	Recommended for outdoor installation, on racks, trays, in conduits, in dry and wet locations, for direct burial 10 x cable Ø			
3. Armoured types with chemical protection Multi layer sheathed	—	—	—	RE-2X(L)2Y4YSWAY ^{3),4)}
<ul style="list-style-type: none"> ■ Laying ■ Bending radius 	Recommended for direct burial, especially in presence of oil and aggressive chemical substances 15 x cable Ø			
Temperature range				
<ul style="list-style-type: none"> ■ During operation ■ During installation 	-30°C up to 70°C -5°C up to 50°C	-30°C up to 105°C -5°C up to 50°C	-30°C up to 70°C -5°C up to 50°C	-30°C up to 90°C -5°C up to 50°C
Reaction to fire				
<ul style="list-style-type: none"> ■ Flame propagation a) Test on single cable b) Test on bunched cables 	IEC 60332-1 IEC 60332-3 part 24 (Cat. C), (excluded types with Multi layer sheath)			
Sunlight resistance (Optional)	UL 1581 Section 1200			
Oil resistance (Optional)	ICEA S-82-552			
Application	For transmission of analogue and digital signals in instrument and control systems; allowed for use in zone 1 and zone 2, group II, classified areas (IEC 60079-14), not allowed for direct connection to low impedance sources, e.g. public mains electricity supply			

- 1) Also with increased thickness of outer sheath (Yv)
- 2) Also with SWB or GSTA
- 3) Also with HDPE outer sheath; in this case Tests "Reaction to Fire" are not passed.
- 4) Max. operating temperature 80°C



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Construction						
Product Type	Unarmoured Types Armoured Types					
Conductor	Plain annealed copper; 7 stranded acc. to HD 383, Class 2					
<ul style="list-style-type: none"> ■ Cross-section mm² ■ Conductor design mm 	<table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">0.5 7 x 0.3</td> <td style="width: 15%; text-align: center;">0.75 7 x 0.37</td> <td style="width: 15%; text-align: center;">1.0 7 x 0.43</td> <td style="width: 15%; text-align: center;">1.3 7 x 0.49</td> <td style="width: 15%; text-align: center;">1.5 7 x 0.53</td> </tr> </table>	0.5 7 x 0.3	0.75 7 x 0.37	1.0 7 x 0.43	1.3 7 x 0.49	1.5 7 x 0.53
0.5 7 x 0.3	0.75 7 x 0.37	1.0 7 x 0.43	1.3 7 x 0.49	1.5 7 x 0.53		
Insulation materials	<ul style="list-style-type: none"> ■ Cross linked Polyethylene XLPE or ■ Polyethylene PE or ■ Polyvinylchloride PVC or ■ Polyvinylchloride heat resistant PVCw 					
Cabling element ¹⁾ <ul style="list-style-type: none"> ■ Without ind. screen ■ With ind. screen 	Pair, Triple, Quad PiMF, TiMF, QiMF					
Individual screen	Aluminium/Plastic tape over solid tinned copper drain wire, 0.6 mm plastic tape under and above screen					
Wrapping	At least one plastic tape above cable core					
Overall screen	Aluminium/Plastic tape over tinned copper drain wire 0.5 mm ² / 7 x 0.3 mm					
Inner sheath	— PVC and PVCw resp. , black					
Armouring	— Galvanized steel wire armouring; wire Ø depending on cable-Ø under armouring, at least 0.9 mm					
Outer sheath ²⁾ Colour	PVC and PVCw resp. Black or blue for intrinsically safe systems					
Marking	ZARSIM Instrumentation Cable . Standard . Rated voltage . RP ³⁾ . Length marking					

1) Colour code of cabling elements: see Appendix I
 2) Also with increased thickness of outer sheath (Yv) for PE insulated, unarmoured types
 3) RP = Reduced flame propagation



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Construction											
Product Type	Multi layer sheathed, armoured Types										
Conductor	Plain annealed copper acc. to HD 383, Class 2										
<ul style="list-style-type: none"> ■ Cross-section mm² ■ Conductor design mm 	<table style="width: 100%; text-align: center;"> <tr> <td>0.5</td> <td>0.75</td> <td>1.0</td> <td>1.3</td> <td>1.5</td> </tr> <tr> <td>7 x 0.30</td> <td>7 x 0.37</td> <td>7 x 0.43</td> <td>7 x 0.49</td> <td>7 x 0.53</td> </tr> </table>	0.5	0.75	1.0	1.3	1.5	7 x 0.30	7 x 0.37	7 x 0.43	7 x 0.49	7 x 0.53
0.5	0.75	1.0	1.3	1.5							
7 x 0.30	7 x 0.37	7 x 0.43	7 x 0.49	7 x 0.53							
Insulation materials	XLPE										
Cabling element ¹⁾											
<ul style="list-style-type: none"> ■ Without ind. screen ■ With ind. screen 	Pair, Triple, Quad PIMF, TiMF, QIMF										
Individual screen	Aluminium/Plastic tape over tinned copper drain wire, 0.6 mm, plastic tape under and above screen										
Wrapping	At least one plastic tape above cable core										
Overall screen	Longitudinal one side plastic coated aluminium foil over tinned copper drain wire, 7x0.3 mm, high density Polyethylene sheath with an additional Polyamide covering. The aluminium foil is bonding within the overlapping and with the inner surface of the Polyethylene sheath										
Armouring	Galvanized steel wire; wire∅ depending on cable-∅ under armouring, at least 0.9 mm										
Outer sheath	PVC or PE (high density)										
Colour	Black										
Marking	ZARSIM Instrumentation Cable . Standard . Rated voltage . RP ²⁾ . Length marking										

1) Colour code of cabling elements: see Appendix I

2) RP = Reduced flame propagation, excluded types with multi layer sheath

Common Types / 300 V

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Electrical Data at 20°C		300 V					
Properties	Character	Unit	Values				
Conductor sizes	nom.	mm ²	0.5	0.75	1.0	1.3	1.5
Conductor resistance	max.	Ω/km	36.7	25.0	18.5	14.2	12.3
Insulation resistance							
■ PVC / PVCw insulation	min.	MΩxkm	100				
■ PE / XLPE insulation	min.	MΩxkm	5000				
L/R Ratio	max.	μH/Ω	25			40	
Inductance	max.	mH/km	1				
Mutual capacitance							
■ PVC / PVCw insulation Pair, Triple ^{1), 2)}	max.	nF/km	150			160	
■ PiMF, TiMF	max.	nF/km	190			200	
■ PE / XLPE insulation Pair, Triple ^{1), 2)}	max.	nF/km	75			85	
■ PiMF, TiMF	max.	nF/km	115			115	
Capacitance unbalance ³⁾							
■ Pair	max.	pF/500m	500				
Test voltage							
■ Core/core (U _{rms})		V	1500				
■ Core/screen (U _{rms})		V	1500				
Operating voltage (U_{rms})	max.	V	300				

- 1) Values for cables with 1 element correspond to those for PiMF and TiMF resp.
 2) Values for cables with 2 up to 4 elements + 20%
 3) To apply only for PE/XLPE insulated types



Common Types / 500 V

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Electrical Data at 20°C		500 V					
Properties	Character	Unit	Values				
Conductor sizes	nom.	mm ²	0.5	0.75	1.0	1.3	1.5
Conductor resistance	max.	Ω/km	36.7	25.0	18.5	14.2	12.3
Insulation resistance							
■ PVC / PVCw insulation	min.	MΩxkm	100				
■ PE / XLPE insulation	min.	MΩxkm	5000				
L/R Ratio	max.	μH/Ω	25			40	
Inductance	max.	mH/km	1				
Mutual capacitance							
■ PVC / PVCw insulation Pair, Triple ^{1), 2)}	max.	nF/km	120			130	
■ PiMF, TiMF	max.	nF/km	160			170	
■ PE / XLPE insulation Pair, Triple ^{1), 2)}	max.	nF/km	65			75	
■ PiMF, TiMF	max.	nF/km	100			100	
Capacitance unbalance ³⁾							
■ Pair	max.	pF/500m	500				
Test voltage							
■ Core/core (U _{rms})		V	2000				
■ Core/screen (U _{rms})		V	2000				
Operating voltage (U_{rms})	max.	V	500				

1) Values for cables with 1 element correspond to those for PiMF and TiMF resp.

2) Values for cables with 2 up to 4 elements + 20%

3) To apply only for PE/XLPE insulated types

Common Types / 70°C / 300 V

Single, multipair, PVC insulation, individual & collective screen, PVC sheath

Unarmoured RE-Y(St)Y			Armoured RE-Y(St)YSWAY		
Cross section	Outer diameter	Weight	Diameter under armour	Outer diameter	Weight
(mm ²)	(mm)	(kg/km)	(mm ²)	(mm)	(kg/km)
0.5 mm²/7 , RE-Y(St)Y			0.5 mm²/7 , RE-Y(St)YSWAY		
1 x 2 x 0.5	6.3	38	6.3	9.6	178
2 x 2 x 0.5	8.2	74	8.2	12.2	265
4 x 2 x 0.5	9.0	98	9.0	13.6	330
5 x 2 x 0.5	9.8	119	9.8	14.4	370
12 x 2 x 0.5	13.7	245	13.7	18.5	589
24 x 2 x 0.5	18.5	448	18.5	24.4	1,056
0.75 mm²/7 , RE-Y(St)Y			0.75 mm²/7 , RE-Y(St)YSWAY		
1 x 2 x 0.75	6.7	48	6.7	10.2	208
2 x 2 x 0.75	9.1	86	9.1	13.3	329
4 x 2 x 0.75	10.0	123	10.0	14.6	388
5 x 2 x 0.75	11.1	155	11.1	15.9	455
12 x 2 x 0.75	15.3	313	15.3	21.0	841
24 x 2 x 0.75	21.0	588	21.0	27.1	1,322
1 mm²/7 , RE-Y(St)Y			1 mm²/7 , RE-Y(St)YSWAY		
1 x 2 x 1	7.2	58	7.2	10.7	222
2 x 2 x 1	9.8	102	9.8	14.0	341
4 x 2 x 1	11.1	159	11.1	15.9	458
5 x 2 x 1	12.1	193	12.1	16.9	506
12 x 2 x 1	17.0	415	17.0	22.9	970
24 x 2 x 1	23.3	766	23.3	29.4	1,571
1.3 mm²/7 , RE-Y(St)Y			1.3 mm²/7 , RE-Y(St)YSWAY		
1 x 2 x 1.3	7.7	66	7.7	11.2	245
2 x 2 x 1.3	11.0	125	11.0	15.0	402
4 x 2 x 1.3	12.2	198	12.2	17.0	525
5 x 2 x 1.3	13.6	244	13.6	18.4	613
12 x 2 x 1.3	19.1	528	19.1	25.0	1,185
24 x 2 x 1.3	26.2	1,001	26.2	33.2	2,130
1.5 mm²/7 , RE-Y(St)Y			1.5 mm²/7 , RE-Y(St)YSWAY		
1 x 2 x 1.5	8.2	73	8.2	11.7	261
2 x 2 x 1.5	11.4	138	11.4	15.8	424
4 x 2 x 1.5	12.7	212	12.7	17.5	538
5 x 2 x 1.5	14.2	268	14.2	19.2	655
12 x 2 x 1.5	19.9	568	19.9	25.8	1,251
24 x 2 x 1.5	27.6	1,092	27.6	34.8	2,293



Common Types / 70°C / 300 V

Single, multipair, PVC insulation, individual & collective screen, PVC sheath

Unarmoured RE-Y(St)Y, PiMF			Armoured RE-Y(St)YSWAY, PiMF		
Cross section	Outer diameter	Weight	Diameter under armour	Outer diameter	Weight
(mm ²)	(mm)	(kg/km)	(mm ²)	(mm)	(kg/km)
0.5 mm²/7 , RE-Y(St)Y, PiMF			0.5 mm²/7 , RE-Y(St)YSWAY, PiMF		
2 x 2 x 0.5	9.3	83	9.3	13.5	334
4 x 2 x 0.5	10.2	120	10.2	14.8	379
5 x 2 x 0.5	11.4	152	11.4	16.2	458
12 x 2 x 0.5	15.8	304	15.8	21.5	818
24 x 2 x 0.5	21.8	584	21.8	27.9	1,297
0.75 mm²/7 , RE-Y(St)Y, PiMF			0.75 mm²/7 , RE-Y(St)YSWAY, PiMF		
2 x 2 x 0.75	10.1	103	10.1	14.3	345
4 x 2 x 0.75	11.4	151	11.4	16.2	445
5 x 2 x 0.75	12.5	183	12.5	17.3	518
12 x 2 x 0.75	17.6	381	17.6	23.5	960
24 x 2 x 0.75	24.4	734	24.4	30.7	1,551
1 mm²/7 , RE-Y(St)Y, PiMF			1 mm²/7 , RE-Y(St)YSWAY, PiMF		
2 x 2 x 1	11.0	125	11.0	15.0	382
4 x 2 x 1	12.3	182	12.3	17.1	496
5 x 2 x 1	13.7	231	13.7	18.5	577
12 x 2 x 1	19.3	480	19.3	25.2	1,108
24 x 2 x 1	26.5	913	26.5	33.5	1,953
1.3 mm²/7 , RE-Y(St)Y, PiMF			1.3 mm²/7 , RE-Y(St)YSWAY, PiMF		
2 x 2 x 1.3	12.0	160	12.0	16.9	460
4 x 2 x 1.3	13.7	222	13.7	18.5	591
5 x 2 x 1.3	15.0	280	15.0	20.0	683
12 x 2 x 1.3	21.2	594	21.2	27.3	1,295
24 x 2 x 1.3	29.3	1,171	29.3	36.5	2,439
1.5 mm²/7 , RE-Y(St)Y, PiMF			1.5 mm²/7 , RE-Y(St)YSWAY, PiMF		
2 x 2 x 1.5	12.4	157	12.4	17.3	506
4 x 2 x 1.5	14.2	243	14.2	19.2	624
5 x 2 x 1.5	15.5	299	15.5	21.2	805
12 x 2 x 1.5	22.2	646	22.2	28.3	1,375
24 x 2 x 1.5	30.7	1,264	30.7	38.1	2,476



Common Types / 70°C / 300 V

Single, multipair, XLPE insulation, individual & collective screen, PVC sheath

Unarmoured RE-2X(St)Y			Armoured RE-2X(St)YSWAY		
Cross section	Outer diameter	Weight	Diameter under armour	Outer diameter	Weight
(mm ²)	(mm)	(kg/km)	(mm ²)	(mm)	(kg/km)
0.5 mm²/7 , RE-2X(St)Y			0.5 mm²/7 , RE-2X(St)YSWAY		
1 x 2 x 0.5	6.3	38	6.3	9.6	183
2 x 2 x 0.5	8.3	71	8.3	12.2	280
4 x 2 x 0.5	9.0	94	9.0	13.6	336
5 x 2 x 0.5	9.8	113	9.8	14.4	376
12 x 2 x 0.5	13.7	230	13.7	18.5	593
24 x 2 x 0.5	18.5	418	18.5	24.4	1,060
0.75 mm²/7 , RE-2X(St)Y			0.75 mm²/7 , RE-2X(St)YSWAY		
1 x 2 x 0.75	6.7	48	6.7	10.2	200
2 x 2 x 0.75	9.2	91	9.2	13.3	319
4 x 2 x 0.75	10.0	119	10.0	14.6	383
5 x 2 x 0.75	11.1	149	11.1	15.9	449
12 x 2 x 0.75	15.3	299	15.3	21.0	827
24 x 2 x 0.75	21.0	560	21.0	27.1	1,294
1 mm²/7 , RE-2X(St)Y			1 mm²/7 , RE-2X(St)YSWAY		
1 x 2 x 1	7.2	56	7.2	10.7	220
2 x 2 x 1	9.9	107	9.9	14.0	358
4 x 2 x 1	11.1	151	11.1	15.9	450
5 x 2 x 1	12.1	183	12.1	16.9	510
12 x 2 x 1	17.0	383	17.0	22.9	974
24 x 2 x 1	23.3	721	23.3	29.4	1,523
1.3 mm²/7 , RE-2X(St)Y			1.3 mm²/7 , RE-2X(St)YSWAY		
1 x 2 x 1.3	7.7	63	7.7	11.2	242
2 x 2 x 1.3	11.1	129	11.1	15.0	383
4 x 2 x 1.3	12.2	184	12.2	17.0	512
5 x 2 x 1.3	13.6	227	13.6	18.4	596
12 x 2 x 1.3	19.1	487	19.1	25.0	1,115
24 x 2 x 1.3	26.2	920	26.2	33.2	2,049
1.5 mm²/7 , RE-2X(St)Y			1.5 mm²/7 , RE-2X(St)YSWAY		
1 x 2 x 1.5	8.2	71	8.2	11.7	260
2 x 2 x 1.5	11.5	150	11.5	15.8	420
4 x 2 x 1.5	12.7	209	12.7	17.5	531
5 x 2 x 1.5	14.2	259	14.2	19.2	646
12 x 2 x 1.5	19.9	547	19.9	25.8	1,230
24 x 2 x 1.5	27.6	1,050	27.6	34.8	2,251



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Single, multipair, XLPE insulation, individual & collective screen, PVC sheath

Unarmoured RE-2X(St)Y, PiMF			Armoured RE-2X(St)YSWAY, PiMF		
Cross section	Outer diameter	Weight	Diameter under armour	Outer diameter	Weight
(mm ²)	(mm)	(kg/km)	(mm ²)	(mm)	(kg/km)
0.5 mm²/7 , RE-2X(St)Y, PiMF			0.5 mm²/7 , RE-2X(St)YSWAY, PiMF		
2 x 2 x 0.5	9.4	90	9.4	13.5	332
4 x 2 x 0.5	10.2	116	10.2	14.8	387
5 x 2 x 0.5	11.4	145	11.4	16.2	452
12 x 2 x 0.5	15.8	289	15.8	21.5	830
24 x 2 x 0.5	21.8	554	21.8	27.9	1,314
0.75 mm²/7 , RE-2X(St)Y, PiMF			0.75 mm²/7 , RE-2X(St)YSWAY, PiMF		
2 x 2 x 0.75	10.2	106	10.2	14.3	353
4 x 2 x 0.75	11.4	146	11.4	16.2	453
5 x 2 x 0.75	12.5	177	12.5	17.3	512
12 x 2 x 0.75	17.6	367	17.6	23.5	972
24 x 2 x 0.75	24.4	706	24.4	30.7	1,534
1 mm²/7 , RE-2X(St)Y, PiMF			1 mm²/7 , RE-2X(St)YSWAY, PiMF		
2 x 2 x 1	11.1	121	11.1	15.0	398
4 x 2 x 1	12.3	174	12.3	17.1	503
5 x 2 x 1	13.7	221	13.7	18.5	584
12 x 2 x 1	19.3	456	19.3	25.2	1,113
24 x 2 x 1	26.5	866	26.5	33.5	1,997
1.3 mm²/7 , RE-2X(St)Y, PiMF			1.3 mm²/7 , RE-2X(St)YSWAY, PiMF		
2 x 2 x 1.3	12.1	154	12.1	16.9	483
4 x 2 x 1.3	13.7	209	13.7	18.5	578
5 x 2 x 1.3	15.0	264	15.0	20.0	666
12 x 2 x 1.3	21.2	554	21.2	27.3	1,254
24 x 2 x 1.3	29.3	1,090	29.3	36.5	2,358
1.5 mm²/7 , RE-2X(St)Y, PiMF			1.5 mm²/7 , RE-2X(St)YSWAY, PiMF		
2 x 2 x 1.5	12.5	159	12.5	17.3	503
4 x 2 x 1.5	14.2	236	14.2	19.2	617
5 x 2 x 1.5	15.5	290	15.5	21.2	797
12 x 2 x 1.5	22.2	625	22.2	28.3	1,388
24 x 2 x 1.5	30.7	1,222	30.7	38.1	2,546

