



Caledonian

OUTDOOR TELEPHONE CABLES

www.caledonian-cables.co.uk www.addison-cables.com

Foam Skin Insulated & LAP Sheathed Air Core/Jelly Filled Cables to DIN VDE 0816

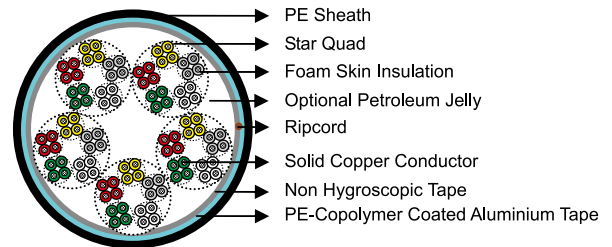
APPLICATION

The cables are designed for use as connection between central offices. The cables are suitable for installation in ducts, direct burial in the ground and also for aerial installation with integral suspension strand. Jelly filled option is for subscriber's cables installed underground or along the edge of pavement. An armoured option is offered for direct burial installations. A figure-8 self support option is offered for aerial installation.



STANDARDS

- VDE 0816



CONSTRUCTION

- **Conductors:** Solid annealed bare copper 0.6 and 0.8mm as per class 1 of VDE 0295/IEC 60228.
- **Insulation:** Foam Skin which is a composite polyethylene insulation made of an inner cellular layer and an outer solid skin 2Y11 type as per VDE 0207-2.
- **Twisted Pairs:** Insulated conductors are twisted into pairs with varying lay length to minimize crosstalk.
- **Cabling Element:** Star Quads.
- **Cable Core Assembly:** 4 Cores are twisted into star quad. 5 star quads are stranded into a basic unit. 5 or 10 basic units each are stranded into one main unit. The star quads are grouped in units and stranded in layers to form the cable core. Standard make up is per VDE 0816 in the Cable Make Up Diagram.
- **Core Wrapping:** One or more non-hygroscopic polyester tapes are helically or longitudinally laid with an overlap. These tapes furnish thermal, mechanical as well as high dielectric protection between shielding and individual conductors.
- **Moisture Barrier:** A layer of aluminium tape (0.2mm) coated with PE-copolymer on one or both sides is applied longitudinally with overlap over the cable core to provide 100% electrical shielding coverage and ensure a barrier against water vapor.
- **Sheath:** Black low density polyethylene type 2YM2 as per VDE 0207-3, being able to withstand exposure to sunlight, temperature variations, ground chemicals and other environmental contaminants.
- **Ripcord:** Ripcord may be provided for slitting the sheath longitudinally to facilitate its removal.
- **Spare Pairs (optional):** Spare pairs may be provided for large pair cable.
- **Continuity Wire (optional):** Tinned copper drain wire may be longitudinally laid to ensure electrical continuity of the screen.

OPTIONAL CONSTRUCTION

- **Jelly Filled Cable:** The cable core interstices are filled with petroleum jelly to avoid longitudinal water penetration within

the cable. The water resistant filling compound is applied to the air space between non-hygroscopic tape and shield, shield and sheath within the cable core.

- **Armoured Cable:** Steel Wire Armour or Corrugated steel tape armour is applied over an optional inner polyethylene sheath. For steel tape version, the 0.15mm thick steel tape is coated with a copolymer and applied with an overlap. An outer polyethylene sheath is applied over the armour.

TYPE CODES

A-	Outdoor Cable
02YS	Foam Skin insulation
F	Continuous core filling
(L)2Y	Laminated sheath(copolymer-coated aluminium tape laminated to PE outer sheath)
SR	Corrugated steel tape
b	Armouring
T	Messenger of galvanized steel wires
StIII	Star quad in local cables.
Bd	Unit-type stranding

ELECTRICAL PROPERTIES

Nominal Conductor Diameter	mm	0.6	0.8
Conductor Gauge Size	AWG	-	20
Conductor Size	mm ²	0.283	0.5
Maximum Average Conductor Resistance @20°C	Ω/km	63	34.6
Minimum Insulation Resistance @500V DC	MΩ·km	5000	5000
Maximum Mutual Capacitance @800Hz	100% of all values	nF/km	42
	95% of all values	nF/km	40
Capacitance Unbalance @800Hz pair-to-pair			
K1 100% of values max	pF/500m	800	800
	pF/500m	400	400
K9-12 100% of values max	pF/500m	300	300
	pF/500m	100	100
Maximum Conductor Loop Resistance @20°C	Ω/km	130	73.2
Impedance @0.8KHz	Ω	664	500
Maximum Average Attenuation @0.8KHz	dB/km	0.91	0.68
Dielectric Strength 50Hz			
Conductor to Conductor (2mins)	V AC	500	500
Conductor to Screen (2mins)	V AC	2000	2000
Maximum Operating Voltage Peak Value	V	225	225
Nominal Insulation Thickness (Air Core)	mm	0.25	0.3
	(Jelly Filled)	mm	0.36
Nominal Insulated Conductor Diameter (Air Core)	mm	1.1	1.4
	(Jelly Filled)	mm	1.32

MECHANICAL AND THERMAL PROPERTIES

Temperature range during operation (fixed state): -30°C – +70°C

Temperature range during installation (mobile state): -20°C – +50°C

Minimum bending radius: 10 x Overall Diameter (unarmoured cables); 15 x Overall Diameter (armoured cables)



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COLOUR CODE

Standard colour code is per VDE 0816 given in Colour Code Chart

DIMENSIONS AND WEIGHT

Foam Skin Insulated and LAP Sheathed Air Core Cable VDE CODE: A-02YS(L)2Y...x2x0.6/0.8mm StIII Bd

Cable Code	Number of Pairs	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.6mm Conductor, 1.1mm Insulated Wire					
TP816A-02YS(L)2Y-StIII-Bd-50P06	50	0.25	1.8	22.0	565
TP816A-02YS(L)2Y-StIII-Bd-100P06	100	0.25	2.0	28.0	960
TP816A-02YS(L)2Y-StIII-Bd-200P06	200	0.25	2.2	37.5	1785
TP816A-02YS(L)2Y-StIII-Bd-300P06	300	0.25	2.2	44.5	2545
TP816A-02YS(L)2Y-StIII-Bd-400P06	400	0.25	2.6	51.0	3370
TP816A-02YS(L)2Y-StIII-Bd-600P06	600	0.25	3.0	61.5	4855
TP816A-02YS(L)2Y-StIII-Bd-800P06	800	0.25	3.4	70.0	6315
TP816A-02YS(L)2Y-StIII-Bd-1000P06	1000	0.25	3.4	76.5	7850
TP816A-02YS(L)2Y-StIII-Bd-1200P06	1200	0.25	3.8	83.0	9390
0.8mm Conductor, 1.4mm Insulated Wire					
TP816A-02YS(L)2Y-StIII-Bd-50P08	50	0.3	1.8	25.0	840
TP816A-02YS(L)2Y-StIII-Bd-100P08	100	0.3	2.0	33.0	1500
TP816A-02YS(L)2Y-StIII-Bd-150P08	150	0.3	2.2	39.5	2165
TP816A-02YS(L)2Y-StIII-Bd-200P08	200	0.3	2.2	45.5	2825
TP816A-02YS(L)2Y-StIII-Bd-300P08	300	0.3	2.6	55.0	4145
TP816A-02YS(L)2Y-StIII-Bd-400P08	400	0.3	3.0	63.0	5475
TP816A-02YS(L)2Y-StIII-Bd-500P08	500	0.3	3.4	69.5	6750
TP816A-02YS(L)2Y-StIII-Bd-600P08	600	0.3	3.4	76.0	8090
TP816A-02YS(L)2Y-StIII-Bd-750P08	750	0.3	3.8	84.5	10065

Foam Skin Insulated and LAP Sheathed Jelly Filled Cable VDE CODE: A-02YSF(L)2Y...X2X 0.6/0.8mm StIII Bd

Cable Code	Number of Pairs	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.6mm Conductor, 1.32mm Insulated Wire					
TP816A-02YSF(L)2Y-StIII-Bd-50P06	50	0.36	1.8	23.0	620
TP816A-02YSF(L)2Y-StIII-Bd-100P06	100	0.36	2.0	30.5	1150
TP816A-02YSF(L)2Y-StIII-Bd-150P06	150	0.36	2.2	37.5	1650
TP816A-02YSF(L)2Y-StIII-Bd-200P06	200	0.36	2.2	41.0	2100
TP816A-02YSF(L)2Y-StIII-Bd-300P06	300	0.36	2.6	50.0	3170
TP816A-02YSF(L)2Y-StIII-Bd-400P06	400	0.36	3.0	56.5	4100
TP816A-02YSF(L)2Y-StIII-Bd-600P06	600	0.36	3.4	68.0	5970
TP816A-02YSF(L)2Y-StIII-Bd-800P06	800	0.36	3.4	78.0	7900
TP816A-02YSF(L)2Y-StIII-Bd-1000P06	1000	0.36	3.8	86.5	9840
0.8mm Conductor, 1.68mm Insulated Wire					
TP816A-02YSF(L)2Y-StIII-Bd-50P08	50	0.44	2.0	28.5	935
TP816A-02YSF(L)2Y-StIII-Bd-100P08	100	0.44	2.2	38.0	1820
TP816A-02YSF(L)2Y-StIII-Bd-150P08	150	0.44	2.2	44.5	2625
TP816A-02YSF(L)2Y-StIII-Bd-200P08	200	0.44	2.6	51.0	3450
TP816A-02YSF(L)2Y-StIII-Bd-300P08	300	0.44	3.0	62.0	5145
TP816A-02YSF(L)2Y-StIII-Bd-400P08	400	0.44	3.4	71.5	6810
TP816A-02YSF(L)2Y-StIII-Bd-500P08	500	0.44	3.8	79.0	8365
TP816A-02YSF(L)2Y-StIII-Bd-600P08	600	0.44	3.8	86.5	10030

Foam Skin Insulated & LAP Sheathed Double Steel Tape Armoured Air Core Cable

VDE CODE: A-02YS(L)2Yb2Y...x2x 0.6/0.8mm StIII Bd

Cable Code	Number of Pairs	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.6mm Conductor, 1.1mm Insulated Wire					
T816A-02YS(L)2Yb2Y-StIII-Bd-100P06	100	0.25	2.0	35.0	1835
T816A-02YS(L)2Yb2Y-StIII-Bd-200P06	200	0.25	2.2	45.0	2940
T816A-02YS(L)2Yb2Y-StIII-Bd-300P06	300	0.25	2.2	52.0	3940
T816A-02YS(L)2Yb2Y-StIII-Bd-400P06	400	0.25	2.6	58.0	4905
T816A-02YS(L)2Yb2Y-StIII-Bd-600P06	600	0.25	3.0	69.5	6870
T816A-02YS(L)2Yb2Y-StIII-Bd-800P06	800	0.25	3.4	79.0	8570
T816A-02YS(L)2Yb2Y-StIII-Bd-1000P06	1000	0.25	3.4	86.5	10450
T816A-02YS(L)2Yb2Y-StIII-Bd-1200P06	1200	0.25	3.8	94.0	12000
0.8mm Conductor, 1.4mm Insulated Wire					
T816A-02YS(L)2Yb2Y-StIII-Bd-100P08	100	0.3	2.0	40.0	2550
T816A-02YS(L)2Yb2Y-StIII-Bd-150P08	150	0.3	2.2	46.5	3330
T816A-02YS(L)2Yb2Y-StIII-Bd-200P08	200	0.3	2.2	53.0	4220
T816A-02YS(L)2Yb2Y-StIII-Bd-300P08	300	0.3	2.6	62.5	5810
T816A-02YS(L)2Yb2Y-StIII-Bd-400Q08	400	0.3	3.0	72.0	7515
T816A-02YS(L)2Yb2Y-StIII-Bd-500P08	500	0.3	3.4	79.0	9005
T816A-02YS(L)2Yb2Y-StIII-Bd-600P08	600	0.3	3.4	86.0	10650
T816A-02YS(L)2Yb2Y-StIII-Bd-750P08	750	0.3	3.8	95.5	12630

Foam Skin Insulated & LAP Sheathed Double Steel Tape Armoured Jelly Filled Cable

VDE CODE: A-02YSF(L)2Yb2Y...x2x 0.6/0.8mm StIII Bd

Cable Code	Number of Pairs	Nominal Insulation Thickness mm	Nominal Sheath Thickness mm	Nominal Overall Diameter mm	Nominal Weight kg/km
0.6mm Conductor, 1.32mm Insulated Wire					
T816A-02YSF(L)2Yb2Y-StIII-Bd-100P06	100	0.36	2.0	38.5	2100
T816A-02YSF(L)2Yb2Y-StIII-Bd-150P06	150	0.36	2.2	44.5	2870
T816A-02YSF(L)2Yb2Y-StIII-Bd-200P06	200	0.36	2.2	48.5	3355
T816A-02YSF(L)2Yb2Y-StIII-Bd-300P06	300	0.36	2.6	57.0	4670
T816A-02YSF(L)2Yb2Y-StIII-Bd-400P06	400	0.36	3.0	65.0	5850
T816A-02YSF(L)2Yb2Y-StIII-Bd-600P06	600	0.36	3.4	77.0	8200
T816A-02YSF(L)2Yb2Y-StIII-Bd-800P06	800	0.36	3.4	88.0	10500
0.8mm Conductor, 1.68mm Insulated Wire					
T816A-02YSF(L)2Yb2Y-StIII-Bd-100P08	100	0.44	2.2	47.5	2960
T816A-02YSF(L)2Yb2Y-StIII-Bd-150P08	150	0.44	2.2	52.0	4010
T816A-02YSF(L)2Yb2Y-StIII-Bd-200P08	200	0.44	2.6	58.5	4985
T816A-02YSF(L)2Yb2Y-StIII-Bd-300P08	300	0.44	3.0	70.5	7180
T816A-02YSF(L)2Yb2Y-StIII-Bd-400P08	400	0.44	3.4	81.0	9130
T816A-02YSF(L)2Yb2Y-StIII-Bd-500P08	500	0.44	3.8	89.0	10915
T816A-02YSF(L)2Yb2Y-StIII-Bd-600P08	600	0.44	3.8	97.5	12620