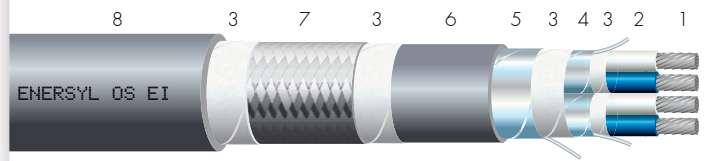


ENERSYL® OS SHF1 INSTRUM

Instrumentation cables



- 1 • Stranded tin-plated copper core, class 2 as per IEC 60228.
- 2 • Insulation: cross-linked polyethylene, type XLPE + optional filler(s).
- 3 • Optional separating tape.
- 4 • (optional) Individual electrical screen (EI): aluminium/PET tape + continuity wire.
- 5 • General electrical screen: aluminium/PET tape + continuity wire (EG) / tin-plated copper braid (BE) / bare copper braid (BR).
- 6 • (optional) Internal sheath: HFFR, type SHF1.
- 7 • (optional) Armour: galvanized steel braid (BG) / double steel tape (FA).
- 8 • Outer sheath: HFFR, type SHF1.

Reference

- (example) ENERSYL® OS EI BG INSTRUM 2P1,5 mm²
OS: for offshore applications
EI, EG, BE, BR: type of electrical screen
BG, FA: type of armour
SHF1: nature of sheath material INSTRUM:
instrumentation cable
2 : number of pairs, triples or quads
P,T,Q: pairs, triples or quads
1.5 mm²: cross-section in mm²

Approvals - standards

- IEC 60228 / IEC 60092-376.
• IEC 60092-360.
• IEC 60332-1 / IEC 60332-3.
• IEC 61034-2 / IEC 60754-1 / IEC 60754-2.

Markings

- OMERIN – ENERSYL < OS xx xx SHF1 INSTRUM >
< cross-section > – 300/500V – < batch > – < year >

Standard products

- Sheath: grey.
- Colour identification of conductors:
> Pair: white and blue numbered.
> Triple: white, red and blue numbered.
> Quad: white, black, red and blue numbered.

Technical characteristics

Thermal

- Continuous operating temperature: -30 °C to +80 °C.
- Maximum core temperature: +90 °C.

Electrical

- Rated voltage: 300/500 V.
- Test voltage: 2000 V.

Smoke - fire

- Flame retardant – cable alone: IEC 60332-1-2 / NF C 32-070 test C2.
- Flame retardant – bunched cable: IEC 60332-3-24 cat. C.
- Low smoke density: IEC 61034-2.
- Halogen-free: IEC 60754-1.
- Low corrosivity of gas emissions: IEC 60754-2.

Resistance of outer sheath to chemical attacks as per OMERIN test report NT140220-01:

- Good resistance to acid.
- Good resistance to base.
- Fairly good resistance to aliphatic hydrocarbons.
- Resistance to water: type AD7 as per IEC 60529 without immersion of ends.
- Resistance to UV ≥ 2000 hours as per EN 16472.

Options

- SHF2: cross-linked HFFR outer sheath, type SHF2.
- Other colours: contact us.
- ATEX as per EN 60079-14.
Particularly suited for static facilities in potentially explosive environments with "i" intrinsic safety protection mode, requiring specific identification of cables.
Colour of the sheath: blue as per EN 60079-14 part 16.2.2.6.
> ENERSYL® OS EI BE EX SHF1 INSTRUM:
with individual electrical screen (aluminium/PET tape) and general (tin-plated copper braid).
> ENERSYL® OS EI EG EX SHF1 INSTRUM:
with individual and general electrical screen (aluminium/PET tape).
> ENERSYL® OS BE EX SHF1 INSTRUM:
with general electrical screen (tin-plated copper braid).
> ENERSYL® OS EG EX SHF1 INSTRUM:
with general electrical screen (aluminium/PET tape).

For this product, please contact:

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LES CABLES DE L'EXTREME

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The information provided in this technical data sheet is indicative and may be modified without prior notice, laying, wiring and electrical conditions and the environment of the cable can not be fully considered in our studies. In no way the company OMERIN shall be held responsible for any incidents in the case of inappropriate uses, particularly in the case of wiring conditions that do not respect the good practice and the standards in force.
For an optimum use of the cables produced by our company, we recommend testing in real conditions. Our sales department is available for a possible provision of samples, and/or for the conditions of a complete study in our laboratories.

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Number of pairs, triples or quads	Nominal cross-section (mm ²)	Nominal stranding	Maximum linear resistance at 20 °C (Ω/km)	Nominal thickness of insulation (mm)	Nominal diameter of conductors (mm)	NON-SHIELDED CABLES Nominal outside diameter* (mm)						ARMoured CABLES Nominal outside diameter* (mm)					
						Pairs		Triples		Quads		Pairs		Triples		Quads	
						EG	EI	EG	EI	EG	EI	EG	EI	EG	EI	EG	EI
1	0.5	7 / 0.30	36.7	0.6	2.1	6.6		6.9		7.5		9.6		9.9		10.5	
2 **	0.5	7 / 0.30	36.7	0.6	2.1	7.5	10.2	10.5	11.4	13.0	13.1	10.5	13.3	13.6	14.6	16.4	16.5
3	0.5	7 / 0.30	36.7	0.6	2.1	10.0	10.8	11.3	12.1	14.0	14.1	13.1	13.9	14.5	15.3	17.4	17.5
4	0.5	7 / 0.30	36.7	0.6	2.1	10.9	11.9	12.4	13.2	15.4	15.5	14.0	15.1	15.6	16.6	19.0	19.1
5	0.5	7 / 0.30	36.7	0.6	2.1	12.1	13.0	13.5	14.6	17.0	17.1	15.3	16.4	16.9	18.0	20.7	20.8
6	0.5	7 / 0.30	36.7	0.6	2.1	13.1	14.3	14.8	16.0	18.5	18.6	16.5	17.7	18.2	19.6	22.3	22.4
7	0.5	7 / 0.30	36.7	0.6	2.1	13.1	14.3	14.8	16.0	18.5	18.6	16.5	17.7	18.2	19.6	22.3	22.4
8	0.5	7 / 0.30	36.7	0.6	2.1	14.9	16.1	16.9	18.1			18.3	19.7	20.6	21.9		
9	0.5	7 / 0.30	36.7	0.6	2.1	16.2	17.6	18.3	19.6			19.7	21.4	22.1	23.4		
12	0.5	7 / 0.30	36.7	0.6	2.1	17.6	19.0	19.9	21.3			21.4	22.7	23.7	25.2		
19	0.5	7 / 0.30	36.7	0.6	2.1	20.7	22.3	23.4	25.1			24.5	26.3	27.4	29.1		
24	0.5	7 / 0.30	36.7	0.6	2.1	24.4	26.4					28.3	30.6				
37	0.5	7 / 0.30	36.7	0.6	2.1	28.2	30.4					32.4	34.6				
1	0.75	7 / 0.37	24.8	0.6	2.2	6.8		7.2		7.7		9.8		10.2		10.7	
2 **	0.75	7 / 0.37	24.8	0.6	2.2	7.7	10.5	11.1	11.8	13.4	13.5	10.7	13.6	14.2	15.0	16.8	16.9
3	0.75	7 / 0.37	24.8	0.6	2.2	10.4	11.4	11.7	12.5	14.5	14.6	13.5	14.6	14.9	15.8	17.9	18.0
4	0.75	7 / 0.37	24.8	0.6	2.2	11.5	12.4	12.8	13.9	16.0	16.1	14.7	15.6	16.1	17.3	19.5	19.6
5	0.75	7 / 0.37	24.8	0.6	2.2	12.5	13.5	14.2	15.2	17.7	17.8	15.8	16.9	17.6	18.7	21.4	21.5
6	0.75	7 / 0.37	24.8	0.6	2.2	13.8	14.8	15.5	16.8	19.5	19.6	17.2	18.2	19.1	20.5	23.2	23.3
7	0.75	7 / 0.37	24.8	0.6	2.2	13.8	14.8	15.5	16.8	19.5	19.6	17.2	18.2	19.1	20.5	23.2	23.3
8	0.75	7 / 0.37	24.8	0.6	2.2	15.5	16.9	17.6	18.8			19.1	20.6	21.3	22.6		
9	0.75	7 / 0.37	24.8	0.6	2.2	17.0	18.3	19.0	20.6			20.7	22.0	22.8	24.3		
12	0.75	7 / 0.37	24.8	0.6	2.2	18.3	19.9	20.7	22.4			22.1	23.7	24.6	26.3		
19	0.75	7 / 0.37	24.8	0.6	2.2	21.5	23.4	24.4	26.3			25.4	27.3	28.3	30.5		
24	0.75	7 / 0.37	24.8	0.6	2.2	25.5	27.7					29.6	31.9				
37	0.75	7 / 0.37	24.8	0.6	2.2	29.4	31.8					33.6	36.2				
1	1	7 / 0.43	18.2	0.6	2.4	7.2		7.6		8.3		10.2		10.6		11.3	
2 **	1	7 / 0.43	18.2	0.6	2.4	8.3	11.2	11.6	12.6	14.4	14.5	11.3	14.4	14.8	15.8	17.8	17.9
3	1	7 / 0.43	18.2	0.6	2.4	11.1	12.1	12.5	13.4	15.6	15.7	14.3	15.3	15.7	16.8	19.2	19.3
4	1	7 / 0.43	18.2	0.6	2.4	12.3	13.2	13.7	14.7	17.2	17.3	15.5	16.6	17.1	18.1	20.9	21.0
5	1	7 / 0.43	18.2	0.6	2.4	13.4	14.4	15.2	16.4	19.0	19.1	16.8	17.8	18.7	19.9	22.7	22.8
6	1	7 / 0.43	18.2	0.6	2.4	14.6	16.0	16.6	17.8	20.7	20.8	18.0	19.6	20.2	21.6	24.5	24.6
7	1	7 / 0.43	18.2	0.6	2.4	14.6	16.0	16.6	17.8	20.7	20.8	18.0	19.6	20.2	21.6	24.5	24.6
8	1	7 / 0.43	18.2	0.6	2.4	16.7	17.9	18.9	20.2			20.2	21.7	22.6	24.0		
9	1	7 / 0.43	18.2	0.6	2.4	18.3	19.6	20.4	22.1			22.0	23.4	24.2	26.1		
12	1	7 / 0.43	18.2	0.6	2.4	19.7	21.4	22.3	23.9			23.4	25.1	26.2	27.8		
19	1	7 / 0.43	18.2	0.6	2.4	23.2	25.2	26.3	28.4			27.1	29.1	30.4	32.5		
24	1	7 / 0.43	18.2	0.6	2.4	27.5	29.6					31.7	33.8				
37	1	7 / 0.43	18.2	0.6	2.4	31.7	34.3					36.0	38.7				
1	1.5	7 / 0.52	12.2	0.6	2.85	8.2		8.7		9.6		11.2		11.7		12.7	
2 **	1.5	7 / 0.52	12.2	0.6	2.85	9.4	13.0	13.5	14.7	16.9	17.0	12.4	16.4	16.9	18.1	20.5	20.8
3	1.5	7 / 0.52	12.2	0.6	2.85	12.9	13.9	14.6	15.7	18.2	18.3	16.1	17.3	18.0	19.3	22.0	22.1
4	1.5	7 / 0.52	12.2	0.6	2.85	14.1	15.5	16.1	17.2	20.0	20.1	17.5	19.0	19.6	21.0	23.8	23.9
5	1.5	7 / 0.52	12.2	0.6	2.85	15.7	16.9	17.8	19.0	22.1	22.2	19.3	20.5	21.5	22.8	26.1	26.2
6	1.5	7 / 0.52	12.2	0.6	2.85	17.1	18.6	19.4	21.0	24.4	24.5	20.9	22.4	23.1	24.7	28.4	28.5
7	1.5	7 / 0.52	12.2	0.6	2.85	17.1	18.6	19.4	21.0	24.4	24.5	20.9	22.4	23.1	24.7	28.4	28.5
8	1.5	7 / 0.52	12.2	0.6	2.85	19.4	21.1	22.0	23.8			23.2	24.9	25.9	27.7		
9	1.5	7 / 0.52	12.2	0.6	2.85	21.3	22.9	24.1	25.8			25.0	26.8	28.0	29.7		
12	1.5	7 / 0.52	12.2	0.6	2.85	22.9	24.9	26.0	28.1			26.9	28.9	30.1	32.2		
19	1.5	7 / 0.52	12.2	0.6	2.85	27.3	29.6	30.9	33.3			31.4	33.7	35.1	37.7		
24	1.5	7 / 0.52	12.2	0.6	2.85	32.3	34.8					36.7	39.3				
37	1.5	7 / 0.52	12.2	0.6	2.85	37.2	40.3					41.8	45.0				

* The rated outer diameter of cables may vary by +/- 20 % depending on the options selected.

** The two pairs with general electrical screen (EG) are twisted like a quad cable.