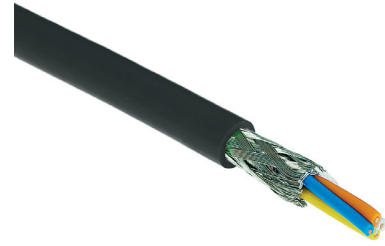


Ha-VIS EtherRail highly elastic data cable, 4-wire cat.5/5e



Advantages

- Transmission of Fast Ethernet 100 BaseT acc. IEEE 802.3
- Suitable for data cabling in rail vehicle and between coaches
- Fire protection acc. EN 45545-1 and TS EN 45545-5, flame retardant and heat resistant acc. DIN 5510 (1-4) and EN 50264-1
- Temperature range from -40°C up to +90°C
- RoHS conform, halogen free LSZH

Application

This data cable was especially designed for the cabling connection between coaches but also for installation within rail vehicles and busses. The cable fulfils the actual safety and fire protection requirements acc. international standards. The robust star quad cable construction guaranties a reliable data transmission up to 100Mbit/sec. The cable was designed in accordance with HARTING connecting hardware components like Han-Quintax® und Han® M12 Crimp series.

Description

Ha-VIS EtherRail highly elastic data cable. star quad
1x4xAWG22/19, category 5/5e

Sheath material: Elastomer. electron beam cross-linked
Colour: black

Cable sheath diameter:
(7.4 +/- 0.1) mm

Transmission performancen: Categorie 5/ 5e / transmission class D up to 100MHz according ISO/ IEC 11801 and EN 50173-1

Transmission rate: 10/100Mbit/s

Operating temperature range:
-40°C...+90°C

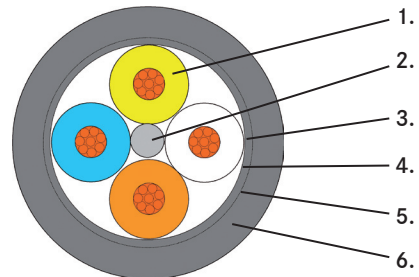
Cable weight: 77kg/km

100 m ring
500 m drum
1000 m drum

Order number

09 45 600 0138
09 45 600 0148
09 45 600 0158

Drawing



- 1. Conductor**
4 x stranded copper wire. tin-plated
AWG22/19 x 0.16 mm Isolation PE. Comp.655
colours: blue, yellow, white, orange
- 2. Filler**
- 3. Interlayer**
Aluminium foil-clad polyester
- 4. Screening**
Double shield. copper braid and foil
- 5. Banding**
Vylene ribbon
- 6. Jacket**
Elastomer electron beam cross-linked Comp 603

Technical characteristics

Transmission performance	Category 5/5e acc. EN 50288-2-1, IEC 61156-5	
Mechanical features	Repeated bending: 12 x cable diameter	
minimum bending radius	Singular bending: 6 x cable diameter	
Tensile strength	max. 100 N	
Electrical characteristics at 20 °C Star quad		
Conductor resistance	max. 45.4 Ohm/km	
Insulation resistance	min. 500 MOhm x km	
Signal run time	5.3 ns/m	
Characteristic impedance at 100 MHz	100 Ohm +/- 5 Ohm	
Test voltage		
(wire/wire/screen rms 50Hz for 1min)	2000 V	
Operating voltage	300 V	
Chemical characteristics		
Fire protection for railway vehicles	DIN 5510	Level 1 - 4
Flammability, smoke and toxicity (FST)		
Vertical flame propagation on single cables	EN 60332-1-2	Carbonisation > 50 and ≥ 540 mm
Smoke density	EN 61034-2	transparency > 70 %
Toxicity of brand gases	EN 50305	ITC ≤ 3
Fire protection in railway vehicles	EN 50264-1	
Halogen free	EN 50267-2-1	HCl and HBr < 0.5 %
	EN 50684-2	HF < 0.1 %
Corrosiveness of brand gases	EN 50267-2-2	pH > 4.3 conductivity < 10 µs / mm
Material characteristics		
Ozone resistance	EN 50264-3-1	72h/40 °C, Procedere B. Volumen concentration 200x10 ⁻⁶
Oil resistance	EN 50264-3-1	72h/100 °C, IRM 902
Fuel resistance	EN 50264-3-1	168h/70 °C, IRM 903
Marginal fire load	DIN 51900	
Thermic features		
maximum temperature range	+ 90 °C	
Printing	"HARTING-Logo" Ha-VIS EtherRail CAT 5 LSZH 4xAWG22/19 "Part-Number" "Chargecode" "Meter"	
Weight	77 kg/km	
Copper number	3.267 kg/100m	

Technical characteristic, transmission performance

Frequenz MHz	1	4	10	16	31.25	62.5	100
Next [dB]	65.3	56.3	50.3	57.2	42.9	38.4	35.3
PSNext [dB]	62.3	53.3	47.3	44.2	39.9	35.4	32.3
ELFext [dB]	63.8	51.8	43.8	39.7	33.9	27.9	23.8
PSELFext [dB]	60.8	48.8	40.8	36.7	30.9	24.9	20.8
Attanuation [dB/100m]	3.2	6	9.5	12.1	17.1	24.8	32

Frequenz MHz	1	4	10	16	31.25	62.5	100
Return Loss [dB]		21.4	25	25	23.6	21.5	20.1