

ETHERLINE® Cat. 5 FRNC HYBRID

DB2170887

valid from: 24.05.2012

Application

ETHERLINE® Cat. 5 FRNC HYBRID is a CATEGORY 5 hybrid data cable for simultaneous data transmission and power supply for industrial usage. The cable is designed for fixed installation and occasional movement. The separately screened core pairs ensure high transmission reliability in areas with a high load of electromagnetic capacity. The cable is halogen free and sunlight resistant.

Approvals: UL AWM style 21282

Design

Power supply cores	conductor	bare copper, fine-wire stranded, ca. 1.55 mm ϕ , ca. 1.5 mm ²
	insulation	halogen free compound, black, wall thickness nom. 0.4 mm, outer ϕ ca. 2.4 mm
	number of cores	4
	core identification	numbered 1-2-3-4
Data cores	conductor	bare copper, fine-wire stranded, ca. 0.75 mm ϕ
	insulation	Foam-Skin PE, outer ϕ ca. 1.5 mm
	stranding	2 cores stranded to pair
	number of pairs	2
	core identification	pair 1: white/blue; pair 2: yellow/orange
	pair wrapping	non-woven tape (overlapping)
	pair screening	plastic laminated aluminum foil (overlapping)
		<u>on top:</u> braid of copper wires, tinned, coverage ca. 75 %
Overall stranding		4 cores and 2 pairs stranded to bundle with central filler
Wrapping		non-woven tape (overlapping)
Sheath		halogen free compound, green similar to RAL 6018, sheath thickness nom. 1.0 mm, outer ϕ ca. 10.3 mm

Electrical properties at 20° C

Power supply cores	conductor resistance	max. 14 Ω /km
	insulation resistance	min. 20 M Ω xkm
	operating peak voltage	100 V
	test voltage (rms 50 Hz, 1 minute)	core/core: 1000 V core/screen: 1000 V
	Data cores	resistance (loop)
signal propagation time		4.4 ns/m
insulation resistance		min. 500 M Ω xkm
characteristic impedance		100 Ω \pm 15 Ω (1 MHz up to 100 MHz)
test voltage (rms 50 Hz, 1 minute)		core/core: 700 V core/screen: 700 V



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Transmission properties

f [MHz]	Attenuation max. [dB/100m]	NEXT [dB/100m]
1	2.1	65.3
4	4.0	56.3
10	6.3	50.3
16	8.0	47.2
20	9.0	45.8
31,25	11.4	42.9
62,5	16.5	38.4
100	21.3	35.3

Electrical requirements acc. to EN 50288-2-1

Mechanical and thermal properties

Temperature range	-20 °C up to 70 °C
Minimum bending radius	moved: 10 x cable \varnothing fixed installation: 5 x cable \varnothing
Halogen free	halogen free acc. to IEC 60754-1/60754-2
Flame retardance	flame retardant acc. to IEC 60332-1-2
Sunlight resistance	sunlight resistant acc. to UL 1581 Sec. 1200
General requirements	Dangerous and forbidden substances acc. to RoHS directive (2002/95/EG) are not allowed to the manufacturing.