

# PROFINET *Type R Industrial Ethernet Cat 5e ES (PUR) for Robotic Applications*

## Cable Design

Conductor	Stranded tinned copper wire (22 AWG)	Ø 0,74 mm
Insulation	Polypropylene (PP)	Ø 1,60 mm
1 <sup>st</sup> Layer	4 wires twisted with Filler as central element	
Tape	Plastic tapes overlapped	
Foil Shield	Alulminate foil overlapped	
Braid Shield	Tinned Copper Wire Braid, 90% coverage approx.	
Tape	Plastic tape conductive, overlapped	Ø 5,0 mm
Outer Jacket	Polyurethane (PUR)	Ø 7,0 ± 0,20 mm
Core Identification	White - Yellow - Blue - Orange	



## Characteristics

- Flame retardant acc. to IEC 60332-1-2
- UL-Style 21329 (80°C/600V)
- RoHS compliant (Directive 2011/65/EC)

### Trailing cable suitable for the following requirements

- 5 million bending cycles	
- bending radius	75 mm
- Maximum acceleration	20 m/s <sup>2</sup>
- Maximum horizontal speed	300 m/min
- Maximum length horizontal of cable	5 m

### Torsional strength

- 5 million cycles at ± 180° on 1 meter	
- not adapted for garland mounting	

### Reversed bending strength (tic-toc test)

- 1 million bending cycles	
- bending radius	50 mm

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### Electrical data at 20°C

Loop resistance	≤	120	Ω/km
Insulation resistance	≥	500	MΩm*km
Signal run time	≤	5,3	ns/m
Characteristic impedance 100 MHz		100±5	Ohm
Operating Voltage	≤	100	V
Test voltage (wire/wire/screen rms 50Hz 1 min)		2000	V

Frequency (MHz)	1	4	10	16	20	31,25	62,5	100
Next (dB)	65,3	56,3	50,3	47,2	45,8	42,9	38,4	35,3
PSNext (dB)	62,3	53,3	47,3	44,2	42,8	39,9	35,4	32,3
ELFext (dB)	64	52	44	40	38	34	28	24
PSELFext (dB)	61	49	41	37	35	31	25	21
Attenuation (dB/100m)	3,2	6,0	9,5	12,1	13,6	17,1	24,8	32

  

Frequency (MHz)	4	8	10	16	20	31,25	62,5	250
Return Loss (dB)	23,0	24,1	25,0	25,0	25,0	23,6	21,5	20,1

Electrical requirements acc. to. EN 50288-2-2 (2014) and IEC 61156-6

### Mechanical Characteristics

Min. bending radius allowed	5 x Ø
Weight approx.	70 kg/km

### Specification

Part Number	Type
L45467-J17-K18	PROFINET type R cable for robotic applications, 2x2x22AWG 19, UL recognized: AWM