

HARTING PROFINET Type A Cable 4-wire Cat. 5 PVC



09 45 600 01X0

PROFINET Type A Cable
4-wire, Cat. 5, PVC



Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable for fix installation
- Applicable for industrial premises
- RoHS conform, UL listed, flame retardant

General

This data cable is suitable for PROFINET cabling according to type A in industrial premises and areas. It is useable for fix installation. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100Mbit/s.

It is designed for fast assembling with the easy-stripping tool and can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type A Cable
4-wire, Cat. 5, PVC

20 m	ring
50 m	ring
100 m	ring
500 m	reel

Part number

09 45 600 0130
09 45 600 0140
09 45 600 0100
09 45 600 0110

Drawing



- Wire: Solid bare copper AWG 22/1
- Insulation: PE Ø 1.5 mm
- Inner sheath: Polyvinylchloride (PVC)
- Overall screen: Aluminate foil overlapped, tinned copper wire braid, braid coverage about 90%
- Outer sheath: Polyvinylchloride (PVC), flame retardant

Color code: wh, ye, bu, or

Color of inner sheath: white

Color of outer sheath: green, RAL 6018

Overall diameter: 6.3 mm – 6.7 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 7,5 x diameter
Single bending: 3 x diameter

Tensile strength max. 150 N

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 10 mOhm/m

Conductor resistance max. 115 Ohm/km

Insulation resistance min. 500 MOhm*km

Velocity of propagation 5.3 ns/m

Characteristic impedance at 100 MHz 100 Ohm ± 5 Ohm

Test voltage (wire/wire/screen rms 50 Hz 1 min) 2000 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Free of hazardous substances RoHS 2002/95/EG

Limited oil resistance

Sunlight resistant UL 1581 Sec. 1200

Thermal Characteristics

Permissible temperature range

fixed operation – 40 °C to + 75 °C

flexible operation – 20 °C to + 60 °C

Printing

HARTING INDUSTRIAL ETHERNET STANDARD CABLE
CAT 5 PLUS * 22AWG (SHIELDED) (UL) E333432 VERIFIED
CAT 5E CMG 75°C or PLTC or AWM 21694 600V FT4
SUN RES * 094560001000100 "Metermarkierung" * "Jahr/
Auftragsnummer" "HARTING-LOGO"

Weight about 66 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*
1	1.6	2.1	80	65.3
4	3.2	4.0	75	56.3
10	5.2	6.3	70	50.3
16	6.9	8.0	65	47.2
20	7.8	9.0	63	45.8
31.25	10.5	11.4	60	42.9
62.5	15	16.5	55	38.4
100	19.5	21.3	50	35.3

* EN 50288-2-1:2003

HARTING PROFINET Type B Cable 4-wire Cat. 5 PVC



PROFINET Type B Cable
4-wire, Cat. 5, PVC

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable flexible cords
- Applicable for industrial premises
- RoHS conform, UL listed, flame retardant

General

This data cable is suitable for PROFINET cabling according to type B in industrial premises and areas. It is useable for flexible cords. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100Mbit/s.

It is designed for fast assembling with the easy-stripping tool and can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type B Cable
4-wire, Cat. 5, PVC

20 m	ring
50 m	ring
100 m	ring
500 m	reel

Part number

09 45 600 0132
09 45 600 0142
09 45 600 0102
09 45 600 0112

Drawing



- Wire: Stranded tinned copper AWG 22/7
- Insulation: : PE Ø 1.56 mm (± 0.03)
- Inner sheath: Polyvinylchloride (PVC)
- Overall screen: aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 %
- Outer sheath: Polyvinylchloride (PVC), flame retardant

Color code: wh, ye, bu, or

Color of inner sheath: white

Color of outer sheath: green, RAL 6018

Overall diameter: 6.3 mm – 6.7 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 5 x diameter
Single bending: 3 x diameter

Torsional strength $\pm 180^\circ$ on 1 m, 30,000 cycles

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 20 mOhm/m

Conductor resistance max. 120 Ohm/km

Insulation resistance min. 500 MOhm*km

Velocity of propagation 5.3 ns/m

Characteristic impedance at 100 MHz 100 Ohm \pm 5 Ohm

Test voltage (wire/wire/screen rms 50 Hz 1min) 2000 V

Chemical Characteristics

Flame retardant UL 1685 (CSA FT 4)

Free of hazardous substances RoHS 2002/95/EG

Sunlight resistant UL 1581 Sec. 1200

Thermal Characteristics

Permissible temperature range

fixed operation - 40 °C to + 70 °C

flexible operation - 20 °C to + 60 °C

Printing

HARTING INDUSTRIAL ETHERNET STRANDED CABLE
CAT 5 PLUS * 22AWG (SHIELDED) (UL) E333432
CMG or PLTC or AWM 21695 80°C 600V FT4 SUN
RES * 094560001020200 "Metermarkierung" * "Jahr/
Auftragsnummer" HARTING-LOGO"

Weight about 68 kg/km

Technical Characteristics

Frequency MHz	Attenuatin dB/100m		NEXT dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*
1	2.1	2.1	80	80
4	4	4	76	76
10	6.3	6.3	70	70
16	8	8	65	65
20	9	9	63	63
31.25	11.4	11.4	60	60
62.5	16.5	16.5	55	55
100	21.3	21.3	50	50

* EN 50288-2-1:2003

HARTING PROFINET Type B Outdoor Cable 4-wire Cat. 5 PVC



PROFINET Type B Outdoor cable 4-wire, Cat. 5, PVC

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable for outdoor installation
- Applicable for industrial premises
- RoHS conform, UL listed, flame retardant

General

This data cable is suitable for PROFINET cabling according to type B in industrial premises and areas. It is useable for flexible cords. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100 Mbit/s.

It is designed for fast assembling with the easy-stripping tool and can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type B
Outdoor Cable
4-wire, Cat. 5, PVC

20 m	ring
50 m	ring
100 m	ring
500 m	reel

Part number

09 45 600 0135
09 45 600 0145
09 45 600 0105
09 45 600 0115

Drawing



- Wire: Stranded tinned copper AWG 22/7
- Insulation: : PE Ø 1.56 mm (± 0.03)
- Inner sheath: Polyvinylchloride (PVC)
- Overall screen: aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 %
- Outer sheath: Polyvinylchloride (PVC), flame retardant

Color code: wh, ye, bu, or

Color of inner sheath: white

Color of outer sheath: black, RAL 9005

Overall diameter: 6.3 mm – 6.7 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 5 x diameter
Single bending: 3 x diameter

Torsional strength $\pm 180^\circ$ on 1 m, 30,000 cycles

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 20 mOhm/m

Conductor resistance max. 120 Ohm/km

Insulation resistance min. 500 MOhm*km

Velocity of propagation 5.3 ns/m

Characteristic impedance at 100 MHz 100 Ohm \pm 5 Ohm

Test voltage (wire/wire/screen rms 50 Hz 1min) 2000 V

Chemical Characteristics

Flame retardant UL 1685 (CSA FT 4)

Free of hazardous substances RoHS 2002/95/EG

Sunlight resistant UL 1581 Sec.1200

Thermal Characteristics

Permissible temperature range

fixed operation $- 40^\circ\text{C}$ to $+ 70^\circ\text{C}$

flexible operation $- 20^\circ\text{C}$ to $+ 60^\circ\text{C}$

Printing

HARTING INDUSTRIAL ETHERNET STRANDED CABLE
CAT 5 PLUS * UV protected * 22AWG (SHIELDED) (UL)
E333432 CMG or PLTC or AWM 21695 80°C 600V FT4
SUN RES * 094560001020300 "Metermarkierung" * "Jahr/
Auftragsnummer" "HARTING-LOGO"

Weight about 68 kg/km



Technical Characteristics

Frequency MHz	Attenuatin dB/100m		NEXT dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*
1	2.1	2.1	80	80
4	4	4	76	76
10	6.3	6.3	70	70
16	8	8	65	65
20	9	9	63	63
31.25	11.4	11.4	60	60
62.5	16.5	16.5	55	55
100	21.3	21.3	50	50

* EN 50288-2-1:2003

09 45 600 01X5

HARTING PROFINET Type B Cable 4-wire Cat. 5 PUR



PROFINET Type B Cable
4-wire, Cat. 5, PUR

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable for flexible cords
- Applicable for industrial premises
- RoHS conform, flame retardant, halogen free

General

This data cable is suitable for PROFINET cabling according to type B in industrial premises and areas. It is useable for flexible cords. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100Mbit/s.

It is designed for fast assembling with the easy-stripping tool and can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type B Cable
4-wire, Cat. 5, PUR

20 m	ring
50 m	ring
100 m	ring
500 m	reel

Part number

09 45 600 0139
09 45 600 0149
09 45 600 0109
09 45 600 0119

Drawing



- Wire: Stranded tinned copper AWG 22/7
- Insulation: : PE Ø 1.56 mm (± 0.03)
- Inner sheath: Thermoplastic Copolymer (FRNC)
- Overall screen: aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 %
- Outer sheath: Polyurethane (PUR), flame retardant, halogen free

Color code: wh, ye, bu, or

Color of inner sheath: white

Color of outer sheath: green, RAL 6018

Overall diameter: 6.3 mm – 6.7 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 7 x diameter
Single bending: 3 x diameter

Torsional strength $\pm 180^\circ$ on 1 m, 30,000 cycles

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 20 mOhm/m

Conductor resistance max. 120 Ohm/km

Insulation resistance min. 500 MOhm*km

Velocity of propagation 5.3 ns/m

Characteristic impedance at 100 MHz 100 Ohm \pm 5 Ohm

Test voltage (wire/wire/screen rms 50 Hz 1min) 2000 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range

fixed operation $- 40^\circ\text{C}$ to $+ 70^\circ\text{C}$

flexible operation $- 20^\circ\text{C}$ to $+ 60^\circ\text{C}$

Printing

HARTING INDUSTRIAL ETHERNET STRANDED
CABLE CAT 5 PLUS PUR FRNC * 22AWG (SHIELDED) *
094560001020400 "sequential length in meters" * "year/in-
ternal order number" HARTING LOGO"

Weight about 62 kg/km

Technical Characteristics

Frequency MHz	Attenuatin dB/100m		NEXT dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*
1	2.1	2.1	80	80
4	4	4	76	76
10	6.3	6.3	70	70
16	8	8	65	65
20	9	9	63	63
31.25	11.4	11.4	60	60
62.5	16.5	16.5	55	55
100	21.3	21.3	50	50

* EN 50288-2-1:2003

HARTING PROFINET Type C Cable 4-wire Cat. 5 PUR



PROFINET Type C Cable
4-wire, Cat. 5, PUR

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable for drag-line
- Applicable for industrial premises
- RoHS conform, UL listed, flame retardant, halogen free

General

This data cable is suitable for PROFINET cabling according to type C in industrial premises and areas. It is useable for flexible cords especially for drag-chain. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100 Mbit/s.

It is designed for fast assembling with the easy-stripping tool and can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type C Cable
4-wire, Cat. 5, PUR

20 m	ring
50 m	ring
100 m	ring
500 m	reel

Part number

09 45 600 0131
09 45 600 0141
09 45 600 0101
09 45 600 0111

Drawing



- Wire: Stranded tinned copper AWG 22/7
- Insulation: : PE Ø 1.56 mm (± 0.03)
- Inner sheath: Thermoplastic copolymer (FRNC)
- Overall screen: aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 %
- Outer sheath: Polyurethane (PUR), flame retardant

Color code: wh, ye, bu, or

Color of inner sheath: white

Color of outer sheath: green, RAL 6018

Overall diameter: 6.3 mm – 6.7 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius	Repeated bending: 7 x diameter Single bending: 3 x diameter
Tensile strength	max. 150 N
Trailing strength	3 million bending cycles bending diameter 200 mm at a speed of 4 m/s acceleration 4 m/s ²
Torsional strength	± 180° on 1 m, 30,000 cycles

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz	20 mOhm/m
Conductor resistance	max. 120 Ohm/km
Insulation resistance	min. 500 MOhm*km
Velocity of propagation	5.3 ns/m
Characteristic impedance at 100 MHz	100 Ohm ± 5 Ohm
Test voltage (wire/wire/screen rms 50 Hz 1min)	2000 V

Chemical Characteristics

Flame retardant	IEC 60332-1-2
Free of hazardous substances	RoHS 2002/95/EG
Oil resistance	EN 60811-2-1
UV-resistant	

Thermal Characteristics

Permissible temperature range	
fixed operation	– 40 °C to + 70 °C
flexible operation	– 20 °C to + 60 °C

Printing

HARTING INDUSTRIAL ETHERNET TRAILING
CABLE CAT 5 PLUS *  E333432 VERIFIED
(UL) CAT 5E PATCH CABLE CMX 75°C FRNC *
2x2xAWG22/7*094560001010100 "Metermarkierung" *
"HARTING-LOGO"

Weight about 61 kg/km

Technical Characteristics

Frequency MHz	Attenuatin dB/100m		NEXT dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*
1	2.1	2.1	80	65.3
4	4	4	76	56.3
10	6.3	6.3	70	50.3
16	8	8	65	47.2
20	9	9	63	45.8
31.25	11.4	11.4	60	42.9
62.5	16.5	16.5	55	38.4
100	21.3	21.3	50	35.3

* EN 50288-2-1:2003



PROFINET Type C Torsional Cable 4-wire, Cat. 5, PUR

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11801 respectively EN 50 173 and ISO/IEC 24702 respectively EN 50 173-3
- Applicable for industrial premises
- Applicable for torsional stress
- RoHS conform, UL recognized, flame retardant, halogen free

General

This data cable is suitable for PROFINET cabling according to type C torsional stress in industrial premises and areas. It is usable for flexible cords especially e.g. for industrial robot application. The core is fitted with 4 wires twisted to quad that allows the transmission of Fast Ethernet 10/100Mbit/s.

Can be assembled with all HARTING 4-pole RJ45 connectors.

Identification

PROFINET Type C
Torsional Cable
4-wire, Cat. 5, PUR

20 m	ring
50 m	ring
100 m	reel
500 m	reel

Part number

09 45 600 1110
09 45 600 1120
09 45 600 1130
09 45 600 1140

Drawing



- Wire: Stranded tinned copper AWG 22/19
- Foamed: PE Ø 1.52 mm (± 0.03)
- Plastic Tape, overlapped
- Overall screen: tinned copper wire braid, braid coverage about 85 %
- Outer sheath: Polyurethane (PUR), flame retardant

Color code: wh, ye, bu, or

Color of outer sheath: green, RAL 6018

Overall diameter: 6.3 mm – 6.7 mm

Technical Characteristics

Performance Category 5 according to EN 50288-2-2:2003, IEC 61156-6:2002

Mechanical Characteristics

Minimal bending radius Single bending: 5 x diameter
max. 150 N

Torsional strength $\pm 180^\circ$ on 1 m, 1 Mil. cycles

Electrical Characteristics at 20 °C

Conductor resistance max. 120 Ohm/km

Insulation resistance min. 500 MOhm * km

Velocity of propagation 4.7 ns/m

Characteristic impedance at 100 MHz 100 Ohm \pm 15 Ohm

Test voltage
(wire/wire/screen rms 50 Hz 1 min) 700 V

Chemical Characteristics


Halogen free

Flame retardant IEC 60332-1-2
UL-Style 21 161 (80 °C)

Thermal Characteristics

Permissible temperature range $- 40^\circ\text{C}$ to $+ 80^\circ\text{C}$

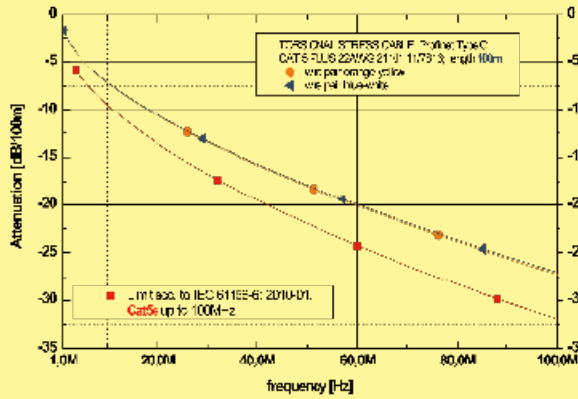
Printing

HARTING INDUSTRIAL ETHERNET TORSIONAL STRESS
CABLE CAT 5 PLUS * 22AWG * E 333435  AWM STYLE
21161 80°C * 094560001010300 „sequential length in
meters“ * „year/internal order number“ „HARTINGLOGO“

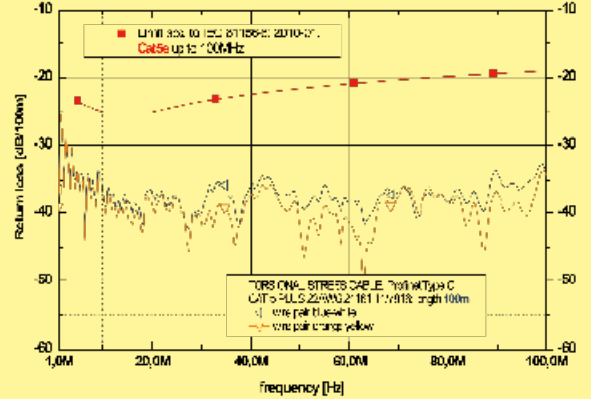
Weight about 54 kg/km

Technical Characteristics, Transmission performance

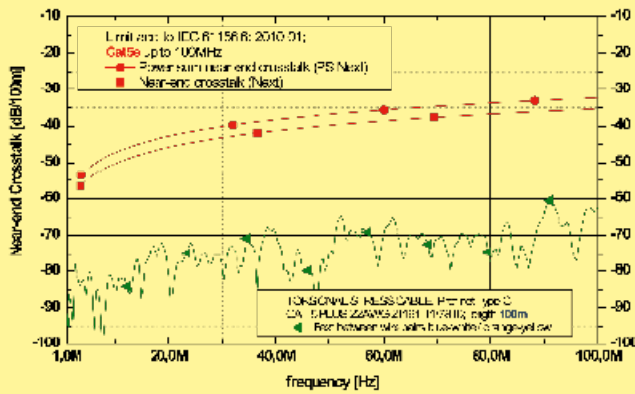
Attenuation



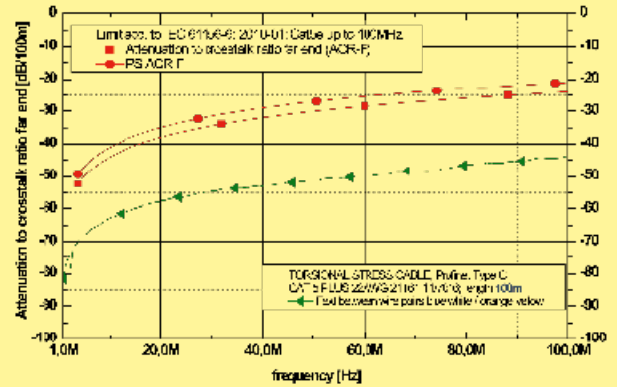
Return loss



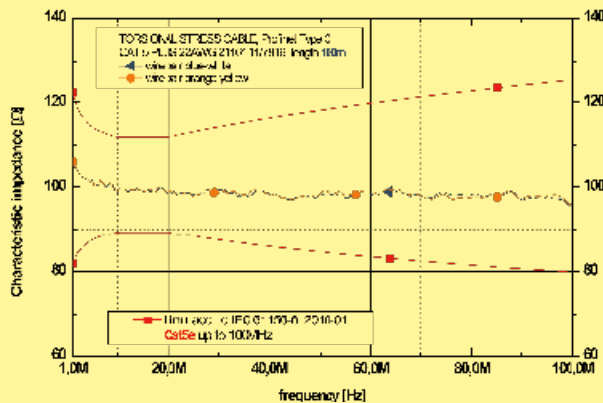
NEXT



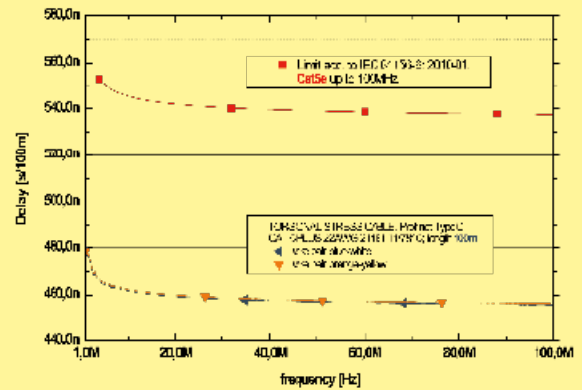
Attenuation to Crosstalk Ratio far-end (ACR)



Characteristic Impedance



Propagation Delay



All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.



PROFINET Hybrid Cable 4-wire + 4 x 1.5, Cat. 5, FRNC

Advantages

- Suitable for PROFINET cabling Category 5 / Class D according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Capable for flexible cords
- Applicable for industrial premises
- RoHS conform, UL recognized, flame retardant FRNC

General

This data cable is suitable for PROFINET Hybrid cabling according to type B in industrial premises and areas. It is useable for flexible cords and installation also. The core is fitted with 4 data wires twisted to star quad that allows the transmission of Fast Ethernet 10/100 Mbit/s and 4 power wires each of 1.5 mm² cross section.

It is designed for fast assembling in benefit for the customer. The PROFINET Hybrid cable is best capable for termination with Han® 3 A RJ45 Hybrid connector set.

Identification

PROFINET Hybrid Cable
4-wire + 4 x 1.5, Cat. 5,
FRNC

10 m	ring
20 m	ring
50 m	ring
100 m	reel
500 m	reel

Part number

09 45 600 0310
09 45 600 0330
09 45 600 0340
09 45 600 0300
09 45 600 0320

Drawing



Quad

- Wire: Stranded tinned copper AWG 22/7
- Insulation: PE Ø 1.55 mm
- Color: wh, ye, bu, og
- Screen: Aluminate foil overlapped, tinned copper wire braid, braid coverage about 85 %

Power

- Wire: Stranded bare copper 4 x 1.5 mm² 84 x 0.15 mm (AWG 16)
- Insulation: FRNC Ø 2.4 mm
- Color: bk, number printed

Core

- Plastic tape overlapped
- Outer sheath: Thermoplastic Copolymer (FRNC), flame retardant

Color of outer sheath: green, RAL 6018

Overall diameter: 9.7 mm – 10.3 mm

Technical Characteristics

Performance Category 5 according to EN 50288-2-1:2003, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 10 x diameter
Single bending: 5 x diameter
Tensile strength max. 200 N

Electrical Characteristics at 20 °C

Quad

Transfer impedance at 1 MHz 50 mOhm/m
Transfer impedance at 10 - 100 MHz 10 mOhm/m
Conductor resistance max. 120 Ohm/km
Insulation resistance min. 500 MOhm x km
Velocity of propagation 5.3 ns/m
Characteristic impedance at 100 MHz 100 Ohm ± 5 Ohm
Test voltage (wire/wire/screen rms 50 Hz 1 min) 1500 V
Operating voltage 150 V

Power

Conductor resistance max. 14 Ohm/km
Insulation resistance min. 20 MOhm*km
Test voltage (wire/wire/screen rms 50 Hz 1 min) 1500 V
Operating voltage 150 V


Chemical Characteristics

Flame retardant IEC 60332-1-2
Free of hazardous substances RoHS 2002/95/EG
Halogen free EN 60811-2-1

Thermal Characteristics

Permissible temperature range
fixed operation - 20 °C to + 80 °C
flexible operation - 20 °C to + 80 °C

Printing

HARTING PROFINET HYBRID CABLE CAT 5 FRNC *
4xAWG22/7 + 4x1.5 (SHIELDED) E333435 
AWM 21282 * 09456000300200 "internal lot number"
"sequential length in meters"

Weight about

154 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100 m		NEXT dB		PS NEXT dB		EL FEXT dB		PS EL FEXT dB		Return Loss dB	
	typ.	Cat 5 max*	typ.	Cat 5 min*	typ.	Cat 5 min*	typ.	Cat 5 min*	typ.	Cat 5 min*	typ.	Cat 5 min*
1	2.1	2.1	65.3	65.3	62.3	62.3	63.8	63.8	60.8	60.8	-	-
4	4	4	56.3	56.3	53.3	53.3	51.8	51.8	48.8	48.8	23.0	23
10	6.3	6.3	50.3	50.3	47.3	47.3	43.8	43.8	40.8	40.8	25	25
16	8	8	47.2	47.2	44.2	44.2	39.7	39.7	36.7	36.7	25	25
20	9	9	45.8	45.8	42.8	42.8	37.8	37.8	34.8	34.8	25	25
31.25	11.4	11.4	42.9	42.9	39.9	39.9	33.9	33.9	30.9	30.9	23.6	23.6
62.5	16.5	16.5	38.4	38.4	35.4	35.4	27.9	27.9	24.9	24.9	21.5	21.5
100	21.3	21.3	35.3	35.3	32.3	32.3	23.8	23.8	20.8	20.8	20.1	20.1

* EN 50288-2-1:2003

HARTING Hybrid Cable 8-wire + 4 x 1.5 Cat. 6 PUR



Hybrid Cable
8-wire + 4 x 1.5 Cat. 6 PUR

Advantages

- Suitable for cabling Category 6 / Class E according to ISO/IEC 11 801 respectively EN 50 173-1 and ISO/IEC 24 702 respectively EN 50 173-3
- Valid for Gigabit Ethernet 1000 Base-T acc. to IEEE 802.3
- Capable for industrial communications cabling for the outdoor
- Very robust and high flexible PUR jacket
- Halogen-free and Oil retardant
- Good EMC characteristics

General

This data cable is suitable for Hybrid cabling in industrial premises as well as outdoor areas.

The four twisted pairs PIMF construction is designed for Gigabit Ethernet and gives good EMC capabilities.

The cable comes with four power wires which each of them has a 1.5 mm² cross section. Polyurethane is used for the cable sheath which protects the cable against ingress and impact.

HARTING offers field assembling Han® 3 A RJ45 Hybrid connectors with reliable IDC termination technology.

The connectors are designed for fast and easy assembling without any special tooling.

Identification

Hybrid Cable
8-wire + 4 x 1.5,
Cat. 6, PUR

20 m ring
50 m ring
100 m reel

other length on request

Part number

09 45 600 0332
09 45 600 0342
09 45 600 0302

Drawing



Data wires

- Wire: Stranded tinned copper AWG 28/7
- Insulation: foamed PE Ø 0.98 mm
- Wires: Twisted Pair acc. TIA/EIA 568
- Shielding: F/FTP, tinned copper wire braid coverage about 60 %

Power wires

- Wire: Stranded bare copper 4 x 1.5 mm² 84 x 0.15 mm (AWG 16)
- Insulation: FRNC Ø 2.4 mm
- Color: bk, number printed

Core

- Plastic tape overlapped
- Outer sheath: Polyurethane, flame retardant and halogen free

Color of outer sheath: black, RAL 9004

Overall diameter: 10.0 mm – 10.6 mm

All data given are in line with the actual state of art and therefore not binding.
HARTING reserves the right to modify designs without giving the relevant reasons.

Technical Characteristics

Performance

Category 6 according to EN 50288-5-2, IEC 61156-5
 Note: Standardized up to 60 m. For length above attenuation is max. 10 % higher.

Mechanical Characteristics

Minimal bending radius Repeated bending: 10 x diameter
 Single bending: 5 x diameter
 Tensile strength max. 200 N

Electrical Characteristics at 20 °C

Data wires

Conductor resistance 385 Ohm/km
 Insulation resistance 1.5 TOhm x km
 Velocity of propagation 4.6 ns/m
 Characteristic impedance at 100 MHz 105 Ohm ± 5 Ohm
 Test voltage
 (wire/wire/screen rms 50 Hz 1 min) 700 V
 Operating voltage 100 V

Power

Conductor resistance max. 14 Ohm/km
 Insulation resistance min. 20 MOhm*km
 Test voltage
 (wire/wire/screen rms 50 Hz 1 min) 1500 V
 Operating voltage 150 V


Chemical Characteristics

Flame retardant UL style 21523 (80 °C / 30 V)
 Free of hazardous substances RoHS 2002/95/EG
 Halogen free
 Oil resistant EN 60811-2-1
 UV resistant

Thermal Characteristics

Permissible temperature range
 fixed operation - 20 °C to + 80 °C
 flexible operation - 20 °C to + 80 °C

Printing

HARTING HYBRID Ethernet OUTDOOR CABLE CAT 6
 PUR 4x2xAWG28/7 + 4x1.5 094560007000000 * E333435
 AWM21523 80°C 30V * "sequential length in meters"
 "internal lot number" "HARTING-Logo"

Weight about


135 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100 m		NEXT dB		PS NEXT dB		EL FEXT dB		PS EL FEXT dB		Return Loss dB	
	typ.	Cat 6 max*	typ.	Cat 6 min*	typ.	Cat 6 min*	typ.	Cat 6 min*	typ.	Cat 6 min*	typ.	Cat 6 min*
1	3	3.1	75	66	75	64	80	66	80	64	24	20
4	5.6	5.8	80	65.3	80	63.3	80	58	80	55	27	23
10	8.7	9.0	95	59.3	90	57.3	75	50	70	47	29	25
16	11	11.4	95	56.2	90	54.2	70	45.9	68	43	29	25
20	12.2	12.8	91	54.8	88	52.8	68	44	65	41	29	25
31,25	15.3	16.1	88	51.9	86	49.9	62	40.1	62	37.1	30	23.6
62,5	22	23.2	83	47.4	78	45.3	45	34.1	45	31.1	30	21.53
100	28.3	29.9	77	44.3	75	42.3	38	30	40	27	30	20.1
155	36	38.0	72	41.4	70	39.4	38	26.2	38	23.2	26	18.8
200	41.5	43.7	68	39.8	67	37.8	37	24	37	21	23	18
250	47.1	49.5	65	38.3	65	36.3	35	22	35	19	22	17.32

* EN 50288-2-1:2003

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Identification	Part number	
<p>HARTING RJ Industrial® Stripping Tool</p> <p>Stripping tool for Ethernet cables including blade cassette</p>	<p>09 45 800 0000</p>	
<p>Spare blade cassette</p>	<p>09 45 800 0001</p>	<p>The RJ Industrial Stripping Tool is ready to remove insulation from cables for fast mounting with diameters from 2.5 to 8 mm quick and easy. It allows to remove cable sheath and shielding braid in one.</p>

Identification

Part number

HARTING Assembly tool for
Ha-VIS preLink® terminale
module

20 82 000 9901



The preLink® tool for termination of data cables by cutting
all wires in length at the same time.
Just to use in combination with the preLink® termination
block.