

HARTING Industrial Cable 8-wire, Cat. 6, PUR



Industrial Cable
8-wire, Cat. 6, PUR

Advantages

- Suitable for generic cabling Category 6 / Class E according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Qualified for transmission up to 1GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG27/7- delivers patch cord performance up to 250MHz
- Applicable for industrial premises
- High EMC capability based on the PIMF construction
- Flame retardant, halogen free and RoHS compliant

General

This high-speed data cable was designed for flexible installation in industrial premises and it's especially suitable for termination of HARTING RJ45 data plugs in IP 20 as well as in IP 65 / IP 67.

The four pair / eight wire PIMF-construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173- 3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class E)

Transmission performance meets Cat.6 specification up to 250MHz for 1GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very protective signal transmission and high EMC performance.

PUR is used as jacket material. The cable is flame retardant, halogen free and RoHS compliant.

Identification

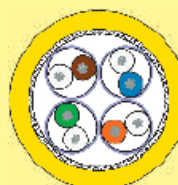
Industrial Cable
8-wire, Cat. 6, PUR

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

Part number

09 45 600 0630
09 45 600 0640
09 45 600 0600
09 45 600 0620

Drawing



- Wire: bare stranded copper, AWG27/7
 - Insulation: PE, Ø 0.98 mm
 - Color code: whbu/bu, whor/or, whgn/gn, whbr/br
 - Pairs: aluminate foil overlapped PIMF
 - Overall screen: tinned copper wire braid, braid coverage about 60 %
 - Outer sheath: Polyurethane (PUR), flame retardant, halogen free, lead free
- Color of outer sheath: rape yellow, RAL 1021
Overall diameter: 6.3 mm – 6.9 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

Mechanical Characteristics

Minimal bending radius Repeated bending: 8 x diameter
Single bending: 4 x diameter

Tensile strength max. 70 N

Electrical Characteristics at 20 °C

Conductor resistance max. 385 Ohm/km

Insulation resistance min. 1.5 TOhm*km

Propagation delay 4.6 ns/m

Characteristic impedance 1 - 100 MHz 100 Ohm - 115 Ohm

Characteristic impedance 100 - 250 MHz 100 Ohm - 110 Ohm

Characteristic impedance 10 - 250 MHz 100 Ohm - 110 Ohm

Test voltage 700 V

Operating voltage max. 100 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Halogen free

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range - 40 °C to + 70 °C

Printing

HARTING INDUSTRIAL CABLE S/FTP CAT 6 PUR
4x2xAWG27/7 094560006000100 „year/internal order
number“
„sequential length in metres“ Textintervals about 1000 mm

Weight about 43 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m		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	3.0	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	44.0	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	30.0	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 50288-5-2 (except Attenuation max. 10% higher)



Industrial Cable 8-wire, Cat. 6, PVC

Advantages

- Suitable for generic cabling Category 6 / Class E according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Qualified for transmission up to 1GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG27/7 delivers patch cord performance up to 250MHz
- Applicable for industrial premises
- High EMC capability based on the PIMF construction
- Flame retardant, lead free and RoHS compliant
- UL certified AWM Style 20276

General

This high-speed data cable was designed for flexible installation in industrial premises and it's especially suitable for termination of HARTING RJ45 data plugs in IP 20 as well as in IP 65 / IP 67.

The four pair / eight wire PIMF-construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173- 3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class E)

Transmission performance meets Cat.6 specification up to 250MHz for 1GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very protective signal transmission and high EMC performance.

PVC is used as jacket material. The cable is flame retardant, lead free and RoHS compliant.

Identification

Industrial Cable
8-wire, Cat. 6, PVC

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

Part number

09 45 600 0532
09 45 600 0542
09 45 600 0502
09 45 600 0522

Drawing



- Wire: bare stranded copper, AWG27/7
- Insulation: PE, Ø 0.98 mm
- Color code: whbu/bu, whor/or, whgn/gn, whbr/br
- Pairs: aluminate foil overlapped PIMF
- Overall screen: tinned copper wire braid, braid coverage about 60 %
- Outer sheath: Polyvinylchloride (PVC), flame retardant, lead free

Color of outer sheath: rape yellow, RAL 1021
Overall diameter: 6.3 mm – 6.9 mm

Technical Characteristics

Performance Category 6 according to EN 50288-5-2

Mechanical Characteristics

Minimal bending radius Repeated bending: 8 x diameter
Single bending: 4 x diameter

Tensile strength max. 70 N

Electrical Characteristics at 20 °C

Conductor resistance max. 385 Ohm/km

Insulation resistance min. 1.5 TOhm*km

Propagation delay 4.6 ns/m

Characteristic impedance 1 - 100 MHz 100 Ohm - 115 Ohm

Characteristic impedance 100 - 250 MHz 100 Ohm - 110 Ohm

Characteristic impedance 10 - 250 MHz 100 Ohm - 110 Ohm

Test voltage 700 V

Operating voltage max. 100 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Halogen free

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range - 10 °C to + 70 °C

Printing

HARTING INDUSTRIAL GIGABIT ETHERNET STRANDED
CABLE CAT 6 4x2xAWG28/7 E130266 AWM STYLE 20276
80°C 30V 094560005000200 "meter marking"
"Charge Number" "HARTING Logo"

Weight about 43 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m		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	3.0	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	44.0	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	30.0	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 50288-5-2 (except Attenuation max. 10% higher)

HARTING Industrial Cable 8-wire, Cat. 6, Outdoor, PVC



Industrial Cable
8-wire, Cat. 6, Outdoor, PVC

Advantages

- Suitable for generic cabling Category 6 / Class E according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Designed for outdoor use, sun light resistant
- Qualified for transmission up to 1GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG27/7 delivers patch cord performance up to 250MHz
- Applicable for industrial premises and outdoor installation
- High EMC capability based on the PIMF construction
- Flame retardant, lead free and RoHS compliant
- UL certified for external use AWM Style 20276

General

This high-speed data cable was designed for flexible installation in industrial premises and it's especially suitable for termination of HARTING RJ45 data plugs in IP 20 as well as in IP 65 / IP 67.

The four pair / eight wire PIMF-construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173- 3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class E)

Transmission performance meets Cat.6 specification up to 250MHz for 1GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very protective signal transmission and high EMC performance.

PVC is used as jacket material. The cable is flame retardant, lead free and RoHS compliant.

Identification

Industrial Cable
8-wire, Cat. 6, Outdoor,
PVC

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

Part number

09 45 600 0531
09 45 600 0541
09 45 600 0501
09 45 600 0521

Drawing



- Wire: bare stranded copper, AWG27/7
 - Insulation: PE, Ø 0.98 mm
 - Color code: whbu/bu, whor/or, whgn/gn, whbr/br
 - Pairs: aluminate foil overlapped PIMF
 - Overall screen: tinned copper wire braid, braid coverage about 60 %
 - Outer sheath: Polyvinylchloride (PVC), flame retardant, lead free
- Color of outer sheath: rape black, RAL 9005
Overall diameter: 6.3 mm – 6.9 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

Mechanical Characteristics

Minimal bending radius Repeated bending: 8 x diameter
Single bending: 4 x diameter

Tensile strength max. 70 N

Electrical Characteristics at 20 °C

Conductor resistance max. 385 Ohm/km

Insulation resistance min. 1.5 TOhm*km

Propagation delay 4.6 ns/m

Characteristic impedance 1 - 100 MHz 100 Ohm - 115 Ohm

Characteristic impedance 100 - 250 MHz 100 Ohm - 110 Ohm

Characteristic impedance 10 - 250 MHz 100 Ohm - 110 Ohm

Test voltage 700 V

Operating voltage max. 100 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range - 10 °C to + 80 °C

Printing

HARTING INDUSTRIAL CABLE PVC OUTDOOR CAT 6
S/FTP 4x2xAWG28/7 E47543-L "UR" AWM STYLE 20276
80°C 30V* 09456000107000 „sequential length in metres“*
„year/internal order number“ „HARTING LOGO“ Textintervalls
about 1000 mm

Weight about 43 kg/km

Technical Characteristics

Frequency MHz	Dämpfung dB/100m		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	3.0	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	44.0	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	30.0	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 50288-5-2 (except Attenuation max. 10% higher)



Industrial Cable 8-wire, Cat. 5, PUR

Advantages

- Suitable for generic cabling Category 5 / Class D according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Qualified for transmission up to 1 GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG26/7 delivers patch cord performance up to 100 MHz
- Applicable for industrial premises
- Double jacket allows Easy-Stripping and delivers very short assembling time
- Good EMC capability based on fully screen design
- Flame retardant, halogen free and RoHS compliant
- UL certified AWM Style 21586

General

This high-speed data cable was designed for flexible installation in industrial premises and it's especially suitable for termination of HARTING RJ45 data plugs in IP 20 as well as in IP 65 / IP 67.

The four pair / eight wire TP construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173-3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class D)

Transmission performance meets Cat.5e specification up to 100MHz for 1GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened by an overall wire braid and guaranties a very protective signal transmission and high EMC performance.

PUR is used as jacket material. The cable is flame retardant, halogen free and RoHS compliant.

Identification

Industrial Cable 8-wire, Cat. 5, PUR

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

Part number

09 45 600 0430
09 45 600 0440
09 45 600 0400
09 45 600 0420

Drawing



- Wire: bare stranded copper, AWG26/7
 - Insulation: PE, Ø 1.0 mm
 - Color code: whbu/bu, whor/or, whgn/gn, whbr/br
 - Inner jacket: halogen free, flame retardant compound
 - Overall screen: aluminium-bonded polyester tape and tinned copper wire braid, braid coverage about 85 %
 - Outer sheath: Polyurethane (PUR), flame retardant, halogen free, lead free
- Color of inner sheath: white
Color of outer sheath: yellow, RAL 1021
Overall diameter: 6.5 mm – 6.9 mm

Technical Characteristics

Performance

Category 5/5e according to EN 50288-2-2:2004 / IEC 61 156-6:2002

Mechanical Characteristics

Minimal bending radius	Repeated bending: 8 x diameter Single bending: 4 x diameter
Tensile strength	max. 110 N
Crush	1000 N/100 mm

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz	5 mOhm/m
Coupling attenuation up to 1000 MHz	90 dB
Conductor resistance	max. 145 Ohm/km
Insulation resistance	min. 5 GOhm*km
Mutual capacitance	47 pF/m
Signal velocity	0.69 c
Propagation delay	485 ns/100m
Skew (Delay Skew) at 100 MHz	15 ns/100m
Characteristic impedance at 100 MHz	100 Ohm ± 5 Ohm
Test voltage	1000 V
Operating voltage	max. 125 V

Chemical Characteristics

Flame retardant	IEC 60332-1-2
Halogen free	IEC 60754-2
calorific value	0.75 MJ/m
Free of hazardous substances	RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range	- 40 °C to + 80 °C
During laying	- 10 °C to + 60 °C

Printing

HARTING INDUSTRIAL CABLE SF/UTP ES CAT 5 PUR
4x2xAWG26/7 * E96807 „RU“ AWM 21586 80°C 30V *
094560001050000 “Production lot code” “Meter marking”

Weight about

58 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/10m		NEXT dB		PS NEXT dB		ACR dB@10m		PS ACR dB@10m		EL FEXT dB@10m		PS EL FEXT dB@10m		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*	typ.	Cat 5 min*	typ.	Cat 5 min*
1	0.24	0.32	76	65	73	62	76	65	73	62	91	64	88	61	24.9	-
4	0.44	0.6	71	56	68	53	70	56	67	53	76	52	73	49	29.8	23
10	0.8	0.95	64	50	61	47	63	49	60	47	68	44	65	41	38.2	25
16	1.01	1.21	60	47	57	44	59	46	56	44	64	40	61	37	39.3	25
31.25	1.44	1.71	56	43	53	40	54	41	51	40	58	34	55	31	36.7	23.6
62.5	2.07	2.48	52	38	49	35	50	36	47	35	52	28	49	25	35	21.5
100	2.66	3.2	48	35	45	32	45	32	42	32	47	24	44	21	29.9	20.1
155	3.26	-	45	-	42	-	42	-	39	-	42	-	39	-	26.2	-
200	3.86	-	42	-	39	-	39	-	36	-	37	-	34	-	23.5	-

* EN 50288-2-2:2004 / IEC 61156-6:2002



Industrial Cable 8-wire, Cat. 5, Outdoor, PVC

Advantages

- Suitable for generic cabling Category 5 / Class D according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Designed for outdoor use, sun light resistant
- Qualified for transmission up to 1GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG26/7 delivers patch cord performance up to 100MHz
- Applicable for industrial premises and outdoor installation
- Double jacket allows Easy-Stripping and delivers very short assembling time
- Good EMC capability based on fully screen design
- Flame retardant and RoHS compliant
- UL certified, UL AWM style 2969

General

This high-speed data cable was designed for flexible installation in industrial premises and in outdoor areas and it's especially suitable for termination of HARTING RJ45 data plugs in IP 65 / IP 67.

The four pair / eight wire TP construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173-3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class D)

Transmission performance meets Cat. 5e specification up to 100MHz for 1 GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened by an overall wire braid and guaranties a very protective signal transmission and high EMC performance.

PVC black is used as jacket material. The cable is flame retardant, lead free and RoHS compliant.

Identification

Industrial Cable
8-wire, Cat. 5, Outdoor,
PVC

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

Part number

09 45 600 0230
09 45 600 0240
09 45 600 0200
09 45 600 0220

Drawing



- Wire: bare stranded copper, AWG26/7
- Insulation: PE, Ø 1.0 mm
- Color code: whbu/bu, whor/or, whgn/gn, whbr/br
- Inner jacket: halogen free, flame retardant compound
- Overall screen: aluminium-bonded polyester tape and tinned copper wire braid, braid coverage about 85 %
- Outer sheath: PVC, flame retardant, lead free
Color of inner sheath: white
Color of outer sheath: black, RAL 9005
Overall diameter: 6.5 mm – 6.9 mm

Technical Characteristics

Performance

Category 5/5e according to EN 50288-2-2:2004 / IEC 61 156-6:2002

Mechanical Characteristics

Minimal bending radius	Repeated bending: 8 x diameter Single bending: 4 x diameter
Tensile strength	max. 110 N
Crush	1000 N/100 mm

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz	5 mOhm/m
Coupling attenuation up to 1000 MHz	90 dB
Conductor resistance	max. 145 Ohm/km
Insulation resistance	min. 5 GOhm*km
Mutual capacitance	47 pF/m
Signal velocity	0.69 c
Propagation delay	485 ns/100m
Skew (Delay Skew) at 100 MHz	15 ns/100m
Characteristic impedance at 100 MHz	100 Ohm ± 5 Ohm
Test voltage	1000 V
Operating voltage	max. 125 V

Chemical Characteristics

Flame retardant	IEC 60332-3-24
calorific value	0.62 MJ/m
Free of hazardous substances	RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range	- 40 °C to + 80 °C
During laying	- 10 °C to + 60 °C

Printing

HARTING INDUSTRIAL CABLE SF/UTP ES CAT 5 PVC
OUTDOOR 4x2xAWG26/7 * E96807 „RU“ AWM 2969 80°C
30V VW-1 * 094560001040000 "Production lot code"
"Meter marking"

Weight about

58 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/10m		NEXT dB		PS NEXT dB		ACR dB@10m		PS ACR dB@10m		EL FEXT dB@10m		PS EL FEXT dB@10m		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*	typ.	Cat 5 min*	typ.	Cat 5 min*
1	0.24	0.32	76	65	73	62	76	65	73	62	91	64	88	61	24.9	-
4	0.44	0.6	71	56	68	53	70	56	67	53	76	52	73	49	29.8	23
10	0.8	0.95	64	50	61	47	63	49	60	47	68	44	65	41	38.2	25
16	1.01	1.21	60	47	57	44	59	46	56	44	64	40	61	37	39.3	25
31.25	1.44	1.71	56	43	53	40	54	41	51	40	58	34	55	31	36.7	23.6
62.5	2.07	2.48	52	38	49	35	50	36	47	35	52	28	49	25	35	21.5
100	2.66	3.2	48	35	45	32	45	32	42	32	47	24	44	21	29.9	20.1
155	3.26	-	45	-	42	-	42	-	39	-	42	-	39	-	26.2	-
200	3.86	-	42	-	39	-	39	-	36	-	37	-	34	-	23.5	-

* EN 50288-2-2:2004 / IEC 61156-6:2002

HARTING Industrial Cable 8-wire, Cat. 5, trailing PUR



Industrial Cable
8-wire, Cat. 5, trailing PUR

Advantages

- Suitable for generic cabling Category 5 / Class D according ISO/IEC 11801 respectively EN 50173-1 especially for high-flexible installation (patch cords)
- Qualified for transmission up to 1 GigaBit Ethernet 1000Base-T acc. IEEE802.3ab
- Based on stranded copper wires AWG26/19 delivers patch cord performance up to 100 MHz
- Applicable for industrial premises
- Usable as trailing cables
- Double jacket allows Easy-Stripping and delivers very short assembling time
- Good EMC capability based on fully screen design
- Flame retardant, halogen free and RoHS compliant

General

This high-speed data cable was designed for higher flexible installation in drag-chains and it's especially suitable for termination of HARTING RJ45 data plugs in IP 20 as well as in IP 65 / IP 67.

The four pair / eight wire TP construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to complete a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173-3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class D)

Transmission performance meets Cat.5 specification up to 100MHz for 1GigaBit Ethernet transmission according IEEE802.3ab.

The cable is fully screened by an overall wire braid and guaranties a very protective signal transmission and high EMC performance.

PUR is used as jacket material. The cable is flame retardant, halogen free and RoHS compliant.

Identification

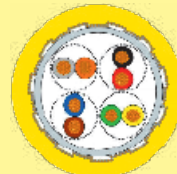
Industrial Cable
8-wire, Cat. 5, trailing PUR

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

Part number

09 45 600 0136
09 45 600 0146
09 45 600 0106
09 45 600 0156

Drawing



- Wire: bare stranded copper, AWG26/19
- Insulation: PE, Ø 1.0 mm
- Color code: gr/or, bl/rd, gn/ye, bl/br
- Inner jacket: EPDM
- Overall screen: tinned copper wire braid, braid coverage about 90 %
- Outer sheath: Polyurethane (PUR), flame retardant, halogen free, lead free

Color of inner sheath: white

Color of outer sheath: yellow, RAL 1021

Overall diameter: 6.8 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 5/5e according to EN 50288-2-2:2004 / IEC 61 156-6:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 5 x diameter
 Tensile strength max. 60 N
 Crush 2000 N/100 mm

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 25 mOhm/m
 Coupling attenuation up to 1000 MHz 75 dB
 Conductor resistance max. 130 Ohm/km
 Insulation resistance min. 5 GOhm*km
 Mutual capacitance 50 pF/m
 Signal velocity 0.68 c
 Propagation delay 490 ns/100m
 Skew (Delay Skew) at 100 MHz 15 ns/100m
 Characteristic impedance at 100 MHz 100 Ohm ± 5 Ohm
 Test voltage 1000 V
 Operating voltage max. 125 V

Chemical Characteristics

Flame retardant IEC 60332-2-2
 calorific value 0.7 MJ/m
 Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range - 40 °C to + 85 °C
 During laying 0 °C to + 50 °C

Printing

HARTING INDUSTRIAL CABLE SF/UTP ES CAT 5 PUR trailing 4x2xAWG26/19 094560001xx0000 "Production lot code" "Meter marking"

Weight about

58 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/10m		NEXT dB		PS NEXT dB		ACR dB@10m		PS ACR dB@10m		EL FEXT dB@10m		PS EL FEXT dB@10m		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*	typ.	Cat 5 min*	typ.	Cat 5 min*
1	0.22	0.32	80	65	77	62	80	65	77	62	80	64	77	61	17	-
4	0.56	0.6	67	56	64	53	67	56	64	53	69	52	66	49	26	23
10	1.0	1.05	63	50	60	47	62	49	59	47	61	44	65	41	30	25
16	1.35	1.45	61	47	58	44	60	46	57	44	56	40	53	37	30	25
20	1.5	1.6	59	46	56	43	58	44	55	43	53	38	50	35	30	25
31.25	1.95	2.0	57	43	54	40	55	41	52	40	48	34	45	31	30	23.6
62.5	2.95	3.0	52	38	49	35	50	36	47	35	43	28	40	25	28	21.5
100	3.95	4.0	45	35	42	32	42	32	39	32	38	24	35	21	26	20.1

* in dependence on EN 50288-2-2:2004 / IEC 61156-6:2002

HARTING Industrial Cable 8-wire, Cat. 7_A, FRNC



Industrial Cable
8-wire, Cat. 7_A, FRNC

Advantages

- Suitable for generic cabling Category 7_A / Class F_A according ISO/IEC 11801 respectively EN 50173-1 especially for fixed installation
- Qualified for transmission up to 10GigaBit Ethernet 10GBase-T acc. IEEE802.3an
- Based on solid copper wires AWG22/1 delivers full 100 m channel performance up to 1300MHz
- Applicable for industrial premises
- High EMC capability based on the PIMF construction
- Flame retardant, halogen free and RoHS compliant

General

This high-speed data cable was designed for fix installation in industrial premises and it's especially suitable for connections between distribution cabinets and industrial outlets. As part of the industrial generic cabling system from HARTING & LEONI Kerpen the cable is well applicable for the Vario-keystone® termination technology.

The four pair / eight wire PIMF-construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1/10GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to construct a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173-3:2007. Maximum channel length specified up to 100 m (transmission channel class FA)

Transmission performance meets Cat. 7_A specification up to 1300MHz for 10GigaBit Ethernet transmission according IEEE802.3an.

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very protective signal transmission and high EMC performance.

FRNC compound is used as jacket material. The cable is flame retardant, halogen free and RoHS compliant.

Identification

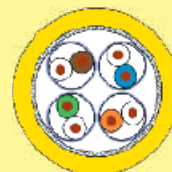
Industrial Cable
8-wire, Cat. 7_A, FRNC

1000 m reel

Part number

09 45 600 0720

Drawing



- Wire: bare copper, AWG22/1
- Insulation: PE, Ø 1.6 mm
- Color code: whbu/bu, whor/or, whgn/gn, whbr/br
- Pairs: Aluminium-bonded polyester tape
- Overall screen: tinned copper wire braid
- Outer sheath: FRNC Compound, flame retardant, halogen free

Color of outer sheath: yellow, RAL 1021

Overall diameter: approx. 8.8 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 7A according to EN 50288-4-1:2004, IEC 61156-5:2002

Mechanical Characteristics

Minimal bending radius Repeated bending: 8 x diameter
Single bending: 4 x diameter

Tensile strength max. 130 N

Crush 1000 N/100 mm

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz 5 mOhm/m

Coupling attenuation up to 1000 MHz 85 dB

Conductor resistance max. 57.1 Ohm/km

Insulation resistance min. 5 GOhm*km

Mutual capacitance 40 pF/m

Signal velocity 0.80 c

Propagation delay 420 ns/100m

Skew (Delay Skew) at 100 MHz 5 ns/100m

Characteristic impedance at 100 MHz 100 Ohm ± 5 Ohm

Test voltage 1000 V

Operating voltage max. 125 V

Chemical Characteristics

Flame retardant IEC 60332-3-24

Halogen free IEC 60754-2

Smoke density IEC 61034

calorific value 0.80 MJ/m

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range - 20 °C to + 60 °C

During laying 0 °C to + 50 °C

Printing

LEONI KERPEN MegaLine F10-130 S/F 4P HVö SPICE
Code 34455 \$VDE-Zeichen\$ \$Chargennummer\$ \$Meter\$

Weight about

84 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB		PS NEXT dB		ACR dB@100m		PS ACR dB@100m		EL FEXT dB@100m		PS EL FEXT dB@100m		Return Loss dB	
	typ.	Cat 7 max*	typ.	Cat 7 min*	typ.	Cat 7 min*	typ.	Cat 7 min*	typ.	Cat 7 min*	typ.	Cat 7 min*	typ.	Cat 7 min*	typ.	Cat 7 min*
1	1.7	2	105	80	102	77	104	78	101	75	105	80	102	77	27.1	23
10	4.5	5.7	105	80	102	77	101	74	98	71	108	74	105	71	35.2	25
100	15.4	18.5	105	72	102	69	90	54	87	51	93	54	90	51	38.9	20.1
200	22.9	26.8	105	68	102	65	83	41	80	38	85	48	82	45	36.6	18
250	26	30.2	105	68	102	63	79	36	76	33	82	46	79	43	35.3	17.3
500	35.9	44.1	100	62	97	59	64	18	61	15	70	40	67	37	29.4	17.3
600	40.4	48.9	95	61	92	58	55	12	52	9	63	38	60	35	26.6	17.3
700	44.6	-	95	-	92	-	50	-	47	-	60	-	57	-	25.8	-
800	47.7	-	93	-	90	-	45	-	42	-	57	-	54	-	25	-
900	51.6	-	90	-	87	-	38	-	35	-	53	-	50	-	23.6	-
1000	54.8	-	88	-	85	-	33	-	30	-	48	-	45	-	22.3	-
1100	56.9	-	87	-	84	-	30	-	27	-	44	-	41	-	21.4	-
1300	61.4	-	80	-	77	-	21	-	18	-	39	-	36	-	18.3	-

* EN 50288-4-1:2004 / IEC 61156-5:2002



Industrial Cable 8-wire, Cat. 6_A, FRNC

Advantages

- Suitable for generic cabling Category 6_A / Class E_A according ISO/IEC 11801 respectively EN 50173-1 especially for fixed installation
- Qualified for transmission up to 10GigaBit Ethernet 10GBase-T acc. IEEE802.3an
- Based on solid copper wires AWG23/1 delivers full 100m channel performance up to 500MHz
- Applicable for industrial premises
- High EMC capability based on the PIMF construction
- Flame retardant, halogen free and RoHS compliant

General

This high-speed data cable was designed for fix installation in industrial premises and it's especially suitable for connections between distribution cabinets and industrial outlets.

The four pair / eight wire PIMF-construction allows the transmission of IT digital and analogue signals like Ethernet 10/100Mbit/s, 1/10GigaBit/s, video and voice services as well as IP-based data services.

It delivers all characteristics to construct a Generic cabling system according ISO/IEC 24702:2006 respectively EN 50173-3:2007. Maximum channel length specified up to 100 m (transmission channel class EA).

Transmission performance meets Cat. 6_A specification up to 500MHz for 10GigaBit Ethernet transmission according IEEE802.3an.

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very protective signal transmission and high EMC performance.

FRNC compound is used as jacket material. The cable is flame retardant, halogen free and RoHS compliant.

Identification

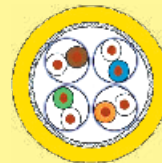
Industrial Cable
8-wire, Cat. 6_A, FRNC

500 m reel
1000 m reel

Part number

09 45 600 0650
09 45 600 0660

Drawing



- Wire: bare copper, AWG23/1
- Insulation: PE, Ø 1.4 mm
- Color code: whbu/bu, whor/or, whgn/gn, whbr/br
- Pairs: aluminium-bonded polyester tape
- Overall screen: tinned copper wire braid
- Outer sheath: FRNC Compound, flame retardant, halogen free

Color of outer sheath: yellow, RAL 1021

Overall diameter: approx. 7.4 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 6A according to EN 50288-10-1

Mechanical Characteristics

Minimal bending radius	Repeated bending: 8 x diameter Single bending: 4 x diameter
Tensile strength	max. 110 N
Crush	1000 N/100 mm

Electrical Characteristics at 20 °C

Transfer impedance 10 MHz	5 mOhm/m
Coupling attenuation up to 1000 MHz	80 dB
Conductor resistance	max. 75 Ohm/km
Insulation resistance	min. 5 GOhm*km
Mutual capacitance	42 pF/m
Signal velocity	0.80 c
Propagation delay	420 ns/100m
Skew (Delay Skew) at 100 MHz	7 ns/100m
Characteristic impedance at 100 MHz	100 Ohm ± 5 Ohm
Test voltage	1000 V
Operating voltage	max. 125 V

Chemical Characteristics

Flame retardant	IEC 60332-1-2
Halogen free	IEC 60754-2
Smoke density	IEC 61034
calorific value	0.60 MJ/m
Free of hazardous substances	RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range	- 20 °C to + 60 °C
During laying	0 °C to + 50 °C

Printing

HARTING INDUSTRIAL INSTALLATION CABLE S/FTP
CAT 6 FRNC 4x2xAWG23/1 094560001080000 \$Charge
Number\$ \$meter marking\$

Weight about 55 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m		NEXT dB		PS NEXT dB		ACR dB@100m		PS ACR dB@100m		EL FEXT dB@100m		PS EL FEXT dB@100m		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*	typ.	Cat 6 min*	typ.	Cat 6 min*
1	1.9	2	95	66	92	64	93	64	90	62	91	66	88	63	26	-
10	5.2	5.9	90	59	87	57	85	53	82	51	96	57	93	54	35.9	25
100	17.7	19	75	44	72	42	57	25	54	23	90	42	87	39	37.2	20.1
200	26.4	27.5	68	40	65	38	42	12	39	10	78	38	75	35	33.1	18
250	29.9	31	66	38	63	36	36	7	33	5	75	36	72	33	30.5	17.3
300	31.9	34.2	65	37	62	35	33	3	30	1	72	35	69	32	29.9	17.3
450	38.9	42.7	63	35	60	33	24	-8	21	-10	69	33	66	30	28.9	17.3
500	41.2	45.3	61	34	58	32	20	-11	17	-13	66	32	63	29	28.3	17.3
600	46.2	-	57	-	54	-	11	-	8	-	60	-	57	-	27.2	-
700	51.4	-	54	-	51	-	3	-	0	-	56	-	53	-	26.2	-

* EN 50288-4-1:2004 / IEC 61156-5:2002