

HARTING Industrial Cable 8-wire Cat. 6_A PUR



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

Advantages

- Suitable for generic cabling Category 6_A / Class E_A according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Qualified for transmission up to 10 GigaBit Ethernet 10 GBase-T acc. IEEE 802.3an
- Based on stranded copper wires AWG26/7 delivers patch cord performance up to 500 MHz
- 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 10/100 Mbit/s, 10 GigaBit/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 respectively EN 50173-3. Maximum patch cord length specified up to 20 m (part of transmission channel class E_A).

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

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very safety 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_A, 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: tinned stranded copper, AWG 26/7
 - Insulation: PE, Ø 1.05 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 70 %
 - 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_A according to IEC 61 156-6

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. 290 Ohm/km

Insulation resistance min. 500 MOhm*km

Propagation delay 5.13 ns/m

Characteristic impedance 100 MHz (100 ± 5) Ohm

Test voltage 700 V

Operating voltage max. 100 V

Chemical Characteristics

Flame retardant IEC 60332-1-2

Halogen free IEC 60754-1

Oil resistant EN 60811-2-1 (90 °C / 7 x 24 h)

Free of hazardous substances RoHS 2002/95/EG

Thermal Characteristics

Permissible temperature range

fixed operation – 40 °C to + 80 °C

flexible operation – 40 °C to + 80 °C

Printing

HARTING INDUSTRIAL CABLE S/FTP CAT 6_A PUR
4x2xAWG26/7 094560006000101 „year/internal order
number“ „sequential length in metres“ Textintervals about
1000 mm

Weight about 46 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m	NEXT dB	PS NEXT dB	EL FEXT dB	PS EL FEXT dB	Return Loss dB
1	3.1	75.63	72.3	67.8	64.8	20
4	5.7	66.3	63.3	55.8	52.8	23
8	8	61.8	58.8	49.7	46.7	24.5
10	8.9	60.3	57.3	47.8	44.8	25
16	11.2	57.2	54.2	43.7	40.7	25
20	12.6	55.8	52.8	41.8	38.8	25
25	14.1	54.3	51.3	39.8	36.8	24.2
31.25	15.8	52.8	49.9	37.9	34.9	23.3
62.5	22.5	48.4	45.4	31.9	28.9	20.7
100	28.7	45.3	42.3	27.8	24.8	19
200	41.4	40.8	37.8	21.8	18.8	16.4
250	46.6	39.3	36.3	19.8	16.8	15.6
300	51.4	38.1	35.1	18.3	15.3	15.6
400	60.1	36.3	33.3	15.8	12.8	15.6
500	67.9	34.8	31.8	13.8	10.8	15.6

acc. to IEC 61 156-6

HARTING Industrial Cable 8-wire Cat. 6_A PVC



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

Advantages

- Suitable for generic cabling Category 6_A / Class E_A according ISO/IEC 11801 respectively EN 50173-1 especially for flexible installation (patch cords)
- Qualified for transmission up to 10 GigaBit Ethernet 10 GBase-T acc. IEEE 802.3an
- Based on stranded copper wires AWG 26/7 delivers patch cord performance up to 500MHz
- 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 10/100 Mbit/s, 10 GigaBit/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. Maximum patch cord length specified up to 20 m (part of transmission channel class E_A)

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

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

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

Identification

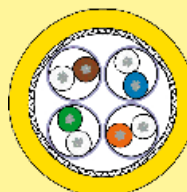
Industrial Cable
8-wire, Cat. 6_A, PVC

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, AWG 26/7
- Insulation: PE, Ø 1.05 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 70 %
- Outer sheath: Polyvinylchloride (PVC), flame retardant, 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_A according to IEC 61 156-6

Mechanical Characteristics

Minimal bending radius	Repeated bending: 8 x diameter Single bending: 4 x diameter
Dynamical bending (Tick - Tock)	30,000 cycles EN 50 396:2005 Chpt. 6 (angle: ± 90°, radius: 70 mm, load: 1 kg, cyc. p. min: 70)
Tensile strength	max. 70 N

Electrical Characteristics at 20 °C

Conductor resistance	max. 290 Ohm/km
Insulation resistance	min. 500 MOhm*km
Propagation delay	5.13 ns/m
Characteristic impedance 100 MHz	(100 ± 5) Ohm
Test voltage	700 V
Operating voltage	max. 100 V


Chemical Characteristics

Flame retardant	IEC 60 332-1-2
Free of hazardous substances	RoHS 2002/95/EG
UV resistant	

Thermal Characteristics

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

Printing

HARTING INDUSTRIAL CABLE CAT 6_A S/FTP
4x2xAWG26/7 E333435  AWM STYLE 20276 80°C
30V 094560005000201 “meter marking” “Charge Number”
“HARTING LOGO”

Weight about 47 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m	NEXT dB	PS NEXT dB	EL FEXT dB	PS EL FEXT dB	Return Loss dB
1	3.1	75.63	72.3	67.8	64.8	20
4	5.7	66.3	63.3	55.8	52.8	23
8	8	61.8	58.8	49.7	46.7	24.5
10	8.9	60.3	57.3	47.8	44.8	25
16	11.2	57.2	54.2	43.7	40.7	25
20	12.6	55.8	52.8	41.8	38.8	25
25	14.1	54.3	51.3	39.8	36.8	24.2
31.25	15.8	52.8	49.9	37.9	34.9	23.3
62.5	22.5	48.4	45.4	31.9	28.9	20.7
100	28.7	45.3	42.3	27.8	24.8	19
200	41.4	40.8	37.8	21.8	18.8	16.4
250	46.6	39.3	36.3	19.8	16.8	15.6
300	51.4	38.1	35.1	18.3	15.3	15.6
400	60.1	36.3	33.3	15.8	12.8	15.6
500	67.9	34.8	31.8	13.8	10.8	15.6

acc. to IEC 61 156-6

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



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

Advantages

- Suitable for generic cabling Category 6A / Class E_A 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 10 GigaBit Ethernet 10 GBase-T acc. IEEE802.3an
- Based on stranded copper wires AWG 26/7 delivers patch cord performance up to 500 MHz
- 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 10/100 Mbit/s, 10 GigaBit/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 respectively EN 50173-3. Maximum patch cord length specified up to 20 m (part of transmission channel class E_A)

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

The cable is fully screened (each pair in metal foil plus an overall wire braid) and guaranties a very safety 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. 6A, 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: tinned stranded copper, AWG 26/7
- Insulation: PE, Ø 1.05 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 70 %
- 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_A according to IEC 61 156-6

Mechanical Characteristics

Minimal bending radius	Repeated bending: 8 x diameter Single bending: 4 x diameter
Dynamical bending (Tick - Tock)	30,000 cycles EN 50396:2005 Chpt. 6 (angle: ± 90°, radius: 70 mm, load: 1 kg, cyc. p. min: 70)
Tensile strength	max. 70 N

Electrical Characteristics at 20 °C

Conductor resistance	max. 290 Ohm/km
Insulation resistance	min. 500 MOhm*km
Propagation delay	5.13 ns/m
Characteristic impedance 100 MHz	(100 ± 5) 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	
fixed operation	– 20 °C to + 80 °C
flexible operation	– 20 °C to + 80 °C

Printing

HARTING INDUSTRIAL CABLE PVC OUTDOOR CAT 6_A
S/FTP 4x2xAWG26/7 E333435  AWM STYLE 20276
80°C 30V 094560001070001 "meter marking" "Charge
Number" "HARTING Logo"

Weight about 47 kg/km

Technical Characteristics

Frequency MHz	Attenuation dB/100m	NEXT dB	PS NEXT dB	EL FEXT dB	PS EL FEXT dB	Return Loss dB
1	3.1	75.63	72.3	67.8	64.8	20
4	5.7	66.3	63.3	55.8	52.8	23
8	8	61.8	58.8	49.7	46.7	24.5
10	8.9	60.3	57.3	47.8	44.8	25
16	11.2	57.2	54.2	43.7	40.7	25
20	12.6	55.8	52.8	41.8	38.8	25
25	14.1	54.3	51.3	39.8	36.8	24.2
31.25	15.8	52.8	49.9	37.9	34.9	23.3
62.5	22.5	48.4	45.4	31.9	28.9	20.7
100	28.7	45.3	42.3	27.8	24.8	19
200	41.4	40.8	37.8	21.8	18.8	16.4
250	46.6	39.3	36.3	19.8	16.8	15.6
300	51.4	38.1	35.1	18.3	15.3	15.6
400	60.1	36.3	33.3	15.8	12.8	15.6
500	67.9	34.8	31.8	13.8	10.8	15.6

acc. to IEC 61156-6

HARTING Industrial Cable 8-wire Cat. 5 PUR



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 1000 Base-T acc. IEEE 802.3ab
- Based on stranded copper wires AWG 26/7 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 10/100 Mbit/s, 1 GigaBit/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 IEEE 802.3ab.

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, AWG 26/7
 - 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

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 50288-2-2:2004
Category 5e, IEC 61156-6:2002, EIA / TIA 568

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	
fixed operation	- 40 °C to + 80 °C
flexible operation	- 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

HARTING Industrial Cable 8-wire Cat. 5 Outdoor PVC



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

Advantages

- Suitable for generic cabling Category 5 / Class D according ISO/IEC 11801 respectively EN 50 173-1 especially for flexible installation (patch cords)
- Designed for outdoor use, sun light resistant
- Qualified for transmission up to 1 GigaBit Ethernet 1000 Base-T acc. IEEE 802.3ab
- Based on stranded copper wires AWG 26/7 delivers patch cord performance up to 100 MHz
- 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 10/100 Mbit/s, 1 GigaBit/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 50 173-3:2007. Maximum patch cord length specified up to 20 m (part of transmission channel class D)

Transmission performance meets Cat. 5e specification up to 100 MHz for 1 GigaBit Ethernet transmission according IEEE 802.3ab.

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, AWG 26/7
 - 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

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
Category 5e, IEC 61156-6:2002, EIA / TIA 568

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

fixed operation - 40 °C to + 80 °C

flexible operation - 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 1000 Base-T acc. IEEE 802.3ab
- Based on stranded copper wires AWG 26/19 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 10/100 Mbit/s, 1 GigaBit/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 100 MHz for 1 GigaBit Ethernet transmission according IEEE 802.3ab.

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

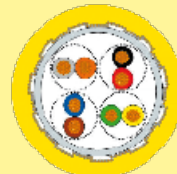
Industrial Cable
8-wire, Cat. 5, trailing PUR

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, AWG 26/19
- 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 according to EN 50288-2-2:2004
Category 5e, IEC 61156-6:2002, EIA / TIA 568

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
fixed operation - 40 °C to + 85 °C
flexible operation 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



Industrial Cable 8-wire, Cat. 7, PUR

Advantages

- Suitable for generic cabling Category 7 / Class F according ISO/IEC 11801 respectively EN 50 173-1 especially for fixed installation
- Qualified for transmission up to 10 GigaBit Ethernet 10 GBase-T acc. IEEE 802.3an
- Based on solid copper wires AWG 23/1 delivers full 100 m channel performance up to 600 MHz
- Applicable for industrial premises
- High EMC capability based on the PIMF construction
- Flame retardant, halogen free and RoHS compliant
- Oil resistant

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 10/100 Mbit/s, 1/10 GigaBit/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 50 173-3:2007. Maximum channel length specified up to 100 m (transmission channel class E_A).

Transmission performance meets Cat. 7 specification up to 600 MHz for 10 GigaBit Ethernet transmission according IEEE 802.3an.

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.

PUR elastomer as jacket material provide high resistance against oil and chemicals. The cable is flame retardant, halogen free and RoHS compliant.

Identification

Industrial Cable
8-wire, Cat. 7, PUR

100 m	ring
500 m	reel
1000 m	reel

Part number

09 45 600 0651
09 45 600 0650
09 45 600 0660

Drawing



- Wire: bare copper, AWG 23/1
- 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: PUR elastomer, flame retardant, halogen free

Color of outer sheath: yellow, RAL 1021

Overall diameter: approx. 8.3 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 7 according to IEC 61 156-5

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	85 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	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 60 332-1-2
Halogen free	IEC 60 754-2
Smoke density	IEC 61 034
calorific value	0.92 MJ/m
Free of hazardous substances	RoHS 2002/95/EG
Oil resistance	EN 60 811-2-1
Chemical resistance	
Ozone resistance	EN 60 811
Microbe resistance	DIN VDE 0282
Hydrolysis resistance	DIN 53 504

Thermal Characteristics

Permissible temperature range	
fixed operation	- 20 °C to + 70 °C
flexible operation	- 10 °C to + 50 °C

Printing

HARTING INDUSTRIAL INSTALLATION CABLE
S/FTP CAT 7 PUR
4x2xAWG23/1 "Charge Number" "meter marking"

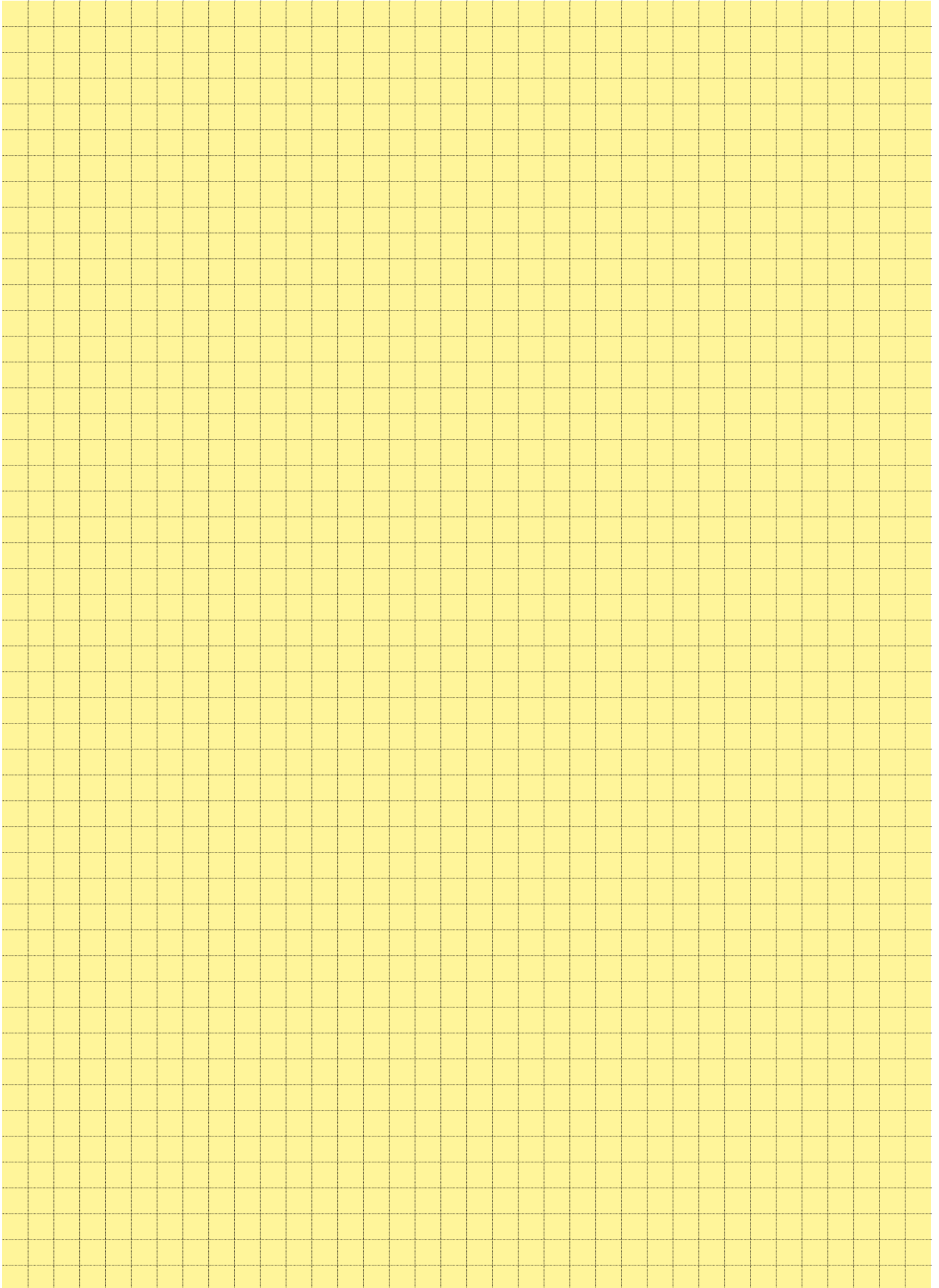
Weight about

70 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.	Kat. 7 max*	typ.	Kat. 7 min*	typ.	Kat. 7 min*	typ.	Kat. 7 min*	typ.	Kat. 7 min*	typ.	Kat. 7 min*	typ.	Kat. 7 min*	typ.	Kat. 7 min*
1	1.9	2	105	80	102	77	104	78	101	75	98	80	95	77	26.6	23
10	4.8	5.7	105	80	102	77	101	74	98	71	103	74	100	71	35.3	25
100	16.3	18.5	105	72	102	69	89	54	86	51	89	54	86	51	39.6	20.1
200	24.3	26.8	105	68	102	65	81	41	78	38	82	48	79	45	36	18
250	27.5	30.2	105	66	102	63	78	36	75	33	79	46	76	43	34	17.3
500	37.9	44.1	100	62	97	59	62	18	59	15	67	40	64	37	29	17.3
600	42.4	48.9	95	61	92	58	53	12	50	9	60	38	57	35	25.4	17.3
700	47.2	-	95	-	92	-	48	-	45	-	57	-	54	-	24.6	-
800	50.3	-	93	-	90	-	43	-	40	-	53	-	50	-	23.5	-
900	54.6	-	90	-	87	-	35	-	32	-	49	-	46	-	26.2	-
1000	58	-	88	-	85	-	30	-	27	-	44	-	41	-	21.5	-

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



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