INDUSTRIAL ETHERNET DATA CABLES

Connecting cable in general machinery construction

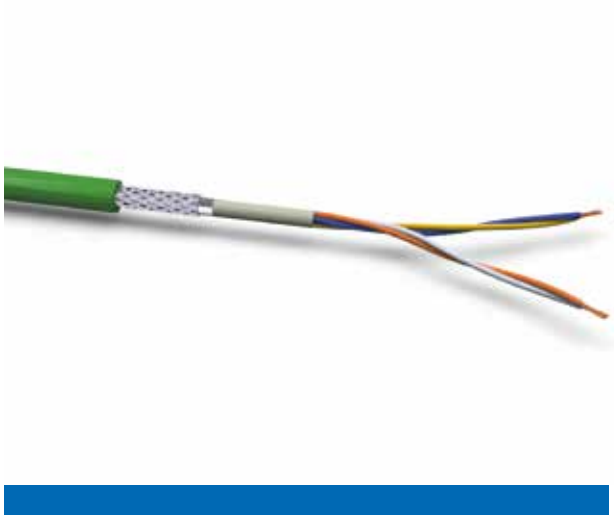
Connection cable between bus segments

VOKA

VOKA-ETH

2YY(St)CY 2PR AWG 22/1

Profinet A
Permanent Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1, IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
EN 60332-1; IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper, solid, bare, AWG 22/1
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: PVC; colour: green RAL 6018

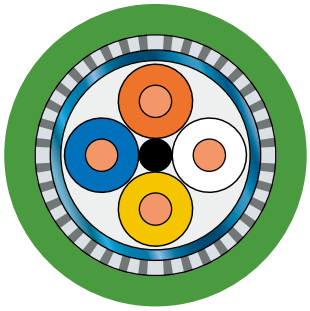
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,2 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-20°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	5 x diameter
Maximum traction	100 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/1	1,0	6,6	68	25	–

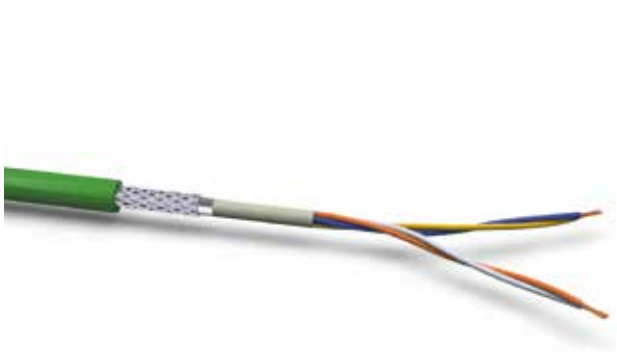
We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH

2YH(St)CH 2PR AWG 22/1 FRNC

Profinet A
Permanent Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1/EC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
EN 60332-1, EN 61034, EN 50267, IEC 60754-2, IEC 60811-2-1
RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper, solid, bare, AWG 22/1
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: halogen-free compound (FRNC); colour: green RAL 6018

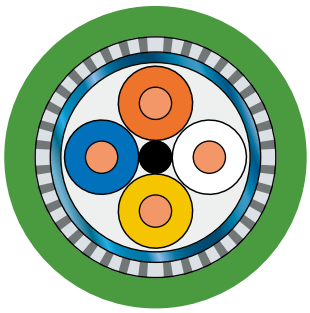
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,2 Ω/km
Insulation resistance min.	5 GΩ x km
Characteristic impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-20°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	5 x diameter
Maximum traction	100 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



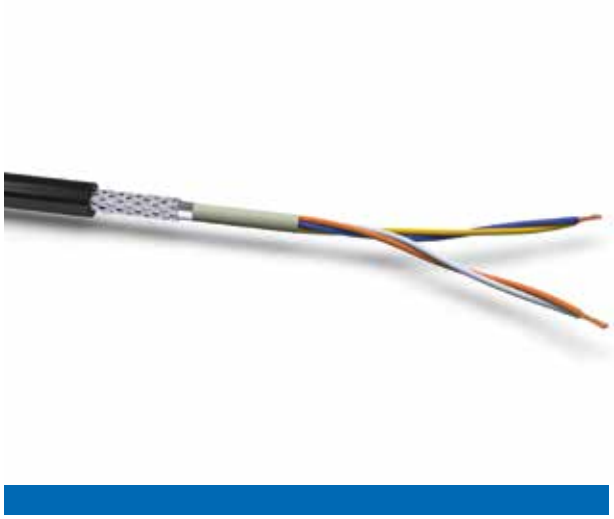
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/1	1,0	6,6	68	25	–

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH

2YY(St)C2Y 2PR AWG 22/1 PE

Profinet A
Permanent Installation / Outdoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmissions for wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments and for outdoor installation.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1; IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper, solid, bare, AWG 22/1
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: PE; colour: black RAL 9005

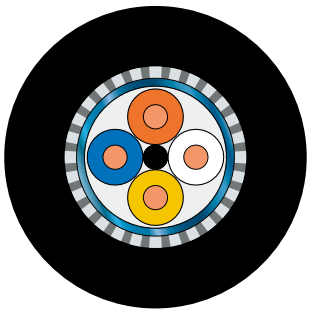
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,2 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-30°C to +70°C
Min. bending radius during installation	15 x diameter
Minimum bending radius stationary	10 x diameter
Maximum traction	120 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/1	1,5	7,5	65	25	–

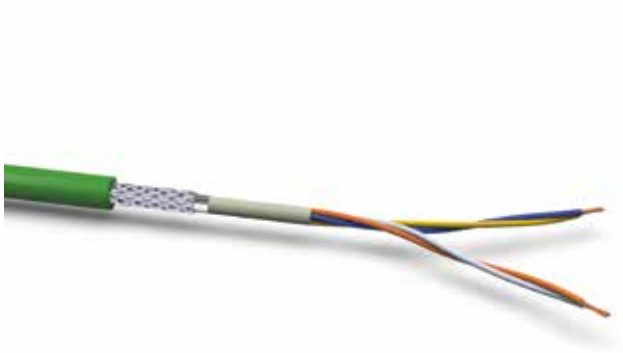
We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH flex

2YY(St)CY 2PR AWG 22/7

Profinet B • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for flexible wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1; IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
EN 60332-1; IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper strand, tinned AWG 22/7
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: PVC; colour: green RAL 6018

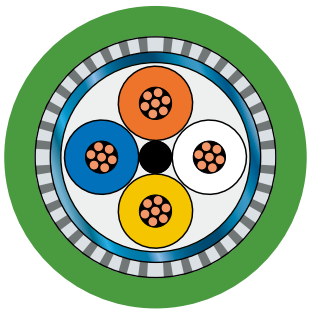
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,8 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-20°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	5 x diameter
Maximum traction	100 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



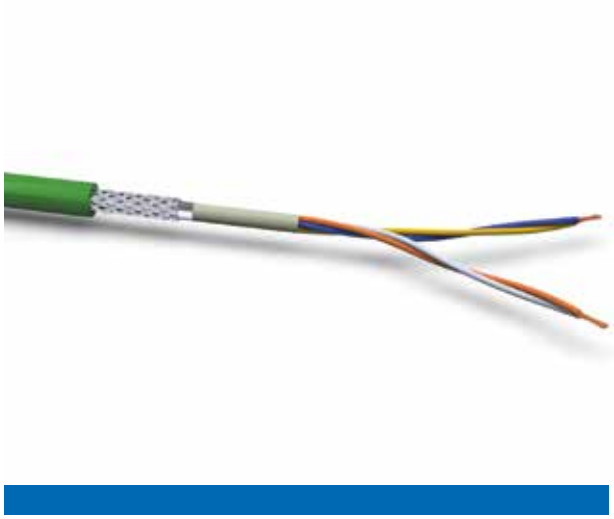
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/7	1,0	6,7	70	27	–

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH flex

2YH(St)CH 2PR AWG 22/7 FRNC

Profinet B • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for flexible wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1; IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
EN 60332-1; EN 61034; EN 50267; IEC 60754-2; IEC 61034
IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper strand, tinned AWG 22/7
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: halogen-free compound (FRNC); colour: green RAL 6018

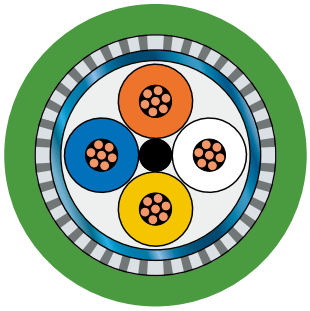
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,8 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-20°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	5 x diameter
Maximum traction	100 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/7	1,0	6,7	70	27	–

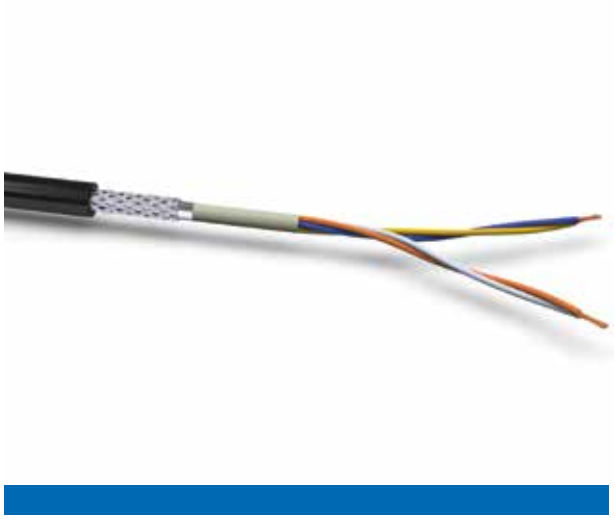
We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH flex

2YY(St)C2Y 2PR AWG 22/7 PE

Profinet B • Flexible cables
Flexible Installation / Outdoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments and for outdoor installation.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1; IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper strand, tinned AWG 22/7
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: PE; colour: black RAL 9005

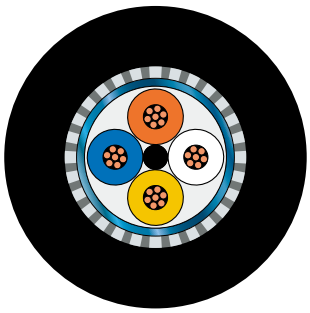
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	57,8 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +50°C
Temperature range stationary	-30°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	5 x diameter
Maximum traction	120 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



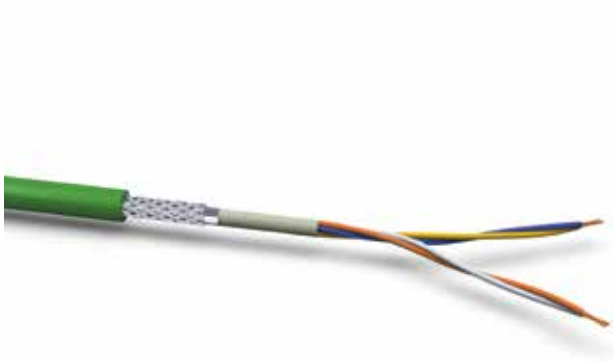
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 AWG 22/7	1,5	7,7	70	27	–

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH Highflex

2YY(St)C11Y 2PR AWG 22/19 PUR

Profinet C • Ultraflexible cables
Ultraflexible Installation



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	75	73,1	69	-
4	3,7	65	61,3	57	25,0
10	5,8	60	54,2	50	30,0
16	7,6	54	46,4	46	30,0
20	8,6	52	41,4	44	30,0
31,25	11,0	49	38,0	40	28,5
62,5	16,3	47	30,7	34	27,0
100	20,9	45	24,1	30	24,0

APPLICATION

Data cable for analogue and digital signal transmission for ultraflexible wiring according to Profinet Standard in industrial environments. Specially optimised for high mechanical loads in harsh environments.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: ISDN, FDDI, ATM

STANDARDS

EN 50173-1; IEC 61156-5; EN 50288-2-1; ISO/IEC 11801 2nd edition
IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

Conductor: copper strand, tinned AWG 22/19
Core insulation: PE
Core identification: wh, ye, bu, or
Core stranding: star-quad
Screen: screening foil (plastic-laminated aluminium foil), tinned copper wire braid
Sheath: PUR; colour: green RAL 6018

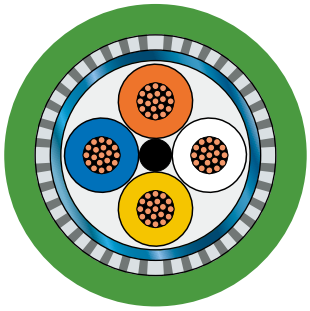
ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	58,0 Ω/km
Insulation resistance min.	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Transfer impedance max. (10 MHz)	10 mΩ/m
Screen attenuation min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-5°C to +60°C
Temperature range stationary	-20°C to +70°C
Min. bending radius during installation	10 x diameter
Minimum bending radius stationary	8 x diameter
Maximum traction	100 N

Minimum order quantities may be required where the requested product does not meet our standard manufaturing minimums or is not indicated in the order, Shipping will always be made in the standard manufactured lengths or unless precisely requested.



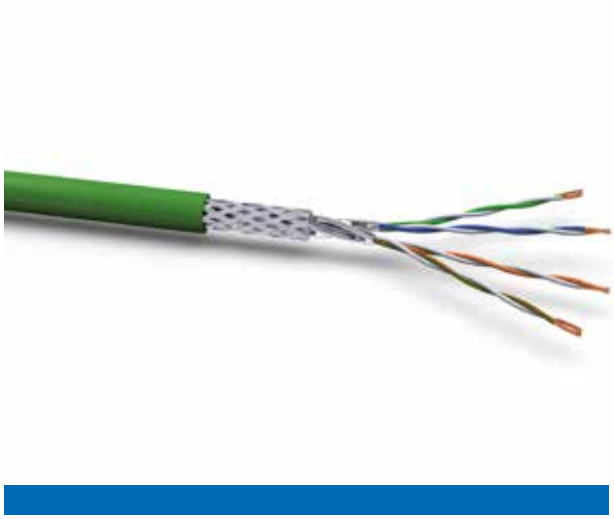
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
2 x 2 x AWG 22/19	1,0	6,8	71	28	

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH 1000
S/FTP 4PR AWG 23/1 PUR

Category 7 • Class F



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,7	100	98,3	95	25
4	3,2	100	96,8	93	28
10	5,2	100	94,8	92	30
16	6,5	100	93,5	91	30
20	7,3	100	92,7	90	30
31,25	9,4	100	90,6	86	30
62,5	13,6	100	86,4	82	30
100	17,0	100	83,0	77	30
155	22,2	98	75,8	73	28
200	24,3	95	70,7	70	26
300	30,2	93	62,8	67	25
400	35,2	90	54,8	64	24
500	39,1	87	47,9	62	23
600	43,5	85	41,5	60	23
800	50,0	80	30,0	56	22
900	55,2	78	21,8	53	21
1000	58,1	75	16,9	50	20

APPLICATION

Data cable for analogue and digital signal transmission in the frequency range up to 1000 MHz. It is designed for primary (campus), secondary (riser) and tertiary (horizontal) wiring in industrial environments.
Use: IEEE 802.3: 10/100/1000/10GBase-T; FDDI, broadband, video, ISDN, ATM, PoE

STANDARDS

EN 50288-4-1; IEC 61156-5; EN 50173-1; ISO/IEC 11801 2nd edition
EN 60754-2; IEC 60811-2-1, EN 60332-1; RoHS 2002/95/EG

CONSTRUCTION

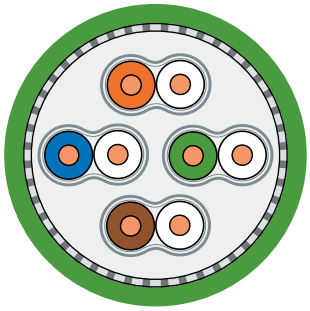
Conductor: copper, solid, bare, AWG 23/1
Core insulation: SFS-PE
Core identification: wh-bu, wh-or, wh-gn, wh-bn
Core stranding: cores twisted to layers
Screen: pair screen (PIMF) (plastic-laminated aluminium foil); drain wire optional; tinned copper wire braid
Sheath: PUR; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	14,5 Ω/100 m
Insulation resistance min.	5 GΩ x km
Characteristic impedance (100 MHz)	100 ±5 Ω
Transfer impedance max. (10 MHz)	5 mΩ/m
Mutual capacitance nom.	45 nF/km
Relative propagation velocity ca.	0,78 c
Screen attenuation ≤ 1000 MHz min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	8 x diameter
Min. bending radius without tensile load	4 x diameter
Maximum traction	130 N

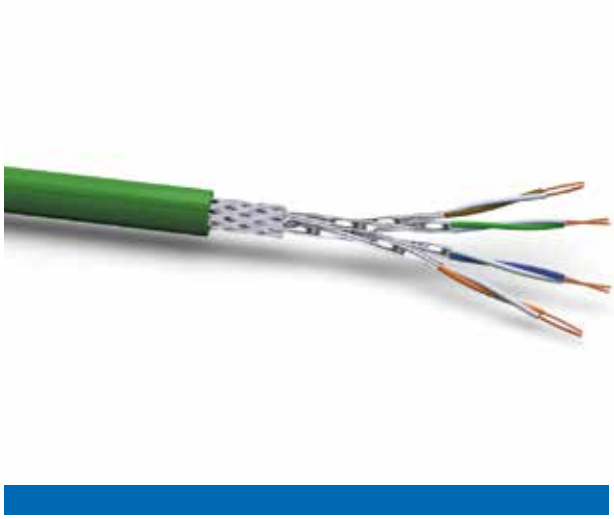


dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG23/1	0,80	7,9	64	34	610

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH 1000 flex
S/FTP 4PR AWG 23/7 PUR

Category 7 • Class F • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,8	100	98,2	95	25
4	3,4	100	96,6	93	28
10	5,4	100	94,6	92	30
16	6,8	100	93,2	91	30
20	7,6	100	92,4	90	30
31,25	9,7	100	90,3	86	30
62,5	14,0	98	84,0	82	30
100	17,8	95	77,2	77	30
155	22,3	92	69,7	73	28
200	25,4	89	63,6	70	27
300	31,4	82	50,6	67	25
400	36,5	79	42,5	64	24
500	40,5	77	36,5	62	23
600	45,2	75	29,8	60	23
800	52,0	72	20,0	56	21
900	57,3	71	13,7	53	20
1000	60,3	70	9,7	50	19

APPLICATION

Flexible data cable for analogue and digital signal transmission in the frequency range up to 1000 MHz. Very robust due to use of stranded wires for link lengths up to 100 m.
Use: IEEE 802.3: 10/100/1000/10GBase-T; IEEE 802.5: FDDI, ISDN, ATM, PoE

STANDARDS

EN 50288-4-1, IEC 60754-2, ISO/IEC 11801, 2nd edition, EN 50173-1
IEC 61156-5; EN 50288-4-2; IEC 60811-2-1; RoHS 2002/95/EC
EN 60332-1

CONSTRUCTION

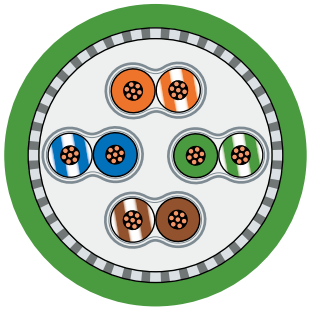
Conductor: copper strand, bare, AWG 23/7
Core insulation: SFS-PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: pair screen (PIMF) (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (acc. to VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	2 GΩ x km
Characteristic impedance (100 MHz)	100 ±5 Ω
Transfer impedance max. (10 MHz)	5 mΩ/m
Mutual capacitance nom.	45 nF/km
Relative propagation velocity ca.	0,78 c
Screen attenuation ≤ 1000 MHz min.	85 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	8 x diameter
Min. bending radius without tensile load	4 x diameter
Maximum traction	120 N



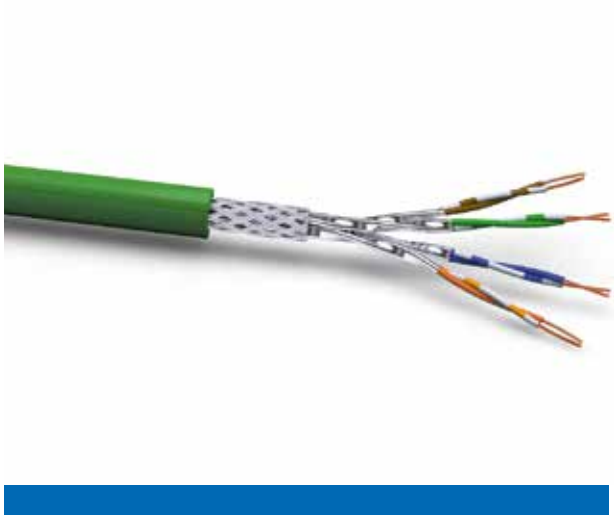
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 23/7	0,80	8,3	70	40	650

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA
Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH 1000 flex
S/FTP 4PR AWG 26/7 PUR

Category 7 • Class F • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/10 m) NOM	NEXT (dB) NOM	ACR (dB/10 m) NOM	EL-FEXT (dB/10 m) NOM	RL (dB) NOM
1	0,28	95	95	95	23
4	0,55	95	94	93	27
10	0,85	95	94	90	30
16	1,05	95	94	81	30
20	1,20	92	91	77	30
31,25	1,50	90	88	75	30
62,5	2,10	88	86	70	30
100	2,70	86	83	58	28
200	3,85	84	80	50	26
300	4,70	82	77	47	24
400	5,10	81	76	45	23
500	5,70	80	74	42	22
600	6,75	78	71	40	21
800	7,90	77	69	52	24
900	8,40	76	68	50	23
1000	9,20	75	66	45	22

APPLICATION

Flexible data cable for analogue and digital signal transmission in the frequency range up to 1000 MHz. It is designed for wiring as switchboard cable in industrial environments.
Use: IEEE 802.3: 10/100/1000/10GBase-T; IEEE 802.5: FDDI, ISDN, ATM

STANDARDS

EN 50288-4-2; EN 50173; ISO/IEC 11801 2nd edition; IEC 61156-6
EN 60332-1; IEC 60754-2; IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

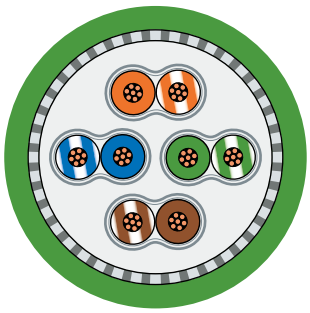
Conductor: copper strand, tinned, AWG 26/7
Core insulation: SFS-PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: pair screen (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (acc. to VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	2 GΩ x km
Characteristic impedance at 100 MHz	100 ±5 Ω
Mutual capacitance nom.	45 nF/km
Transfer impedance bei 1 MHz	15 mΩ/m
Transfer impedance bei 10 MHz	10 mΩ/m
Transfer impedance bei 30 MHz	30 mΩ/m
Relative propagation velocity ca.	0,76 c
Screen attenuation ≤ 1000 MHz min.	80 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	10 x diameter
Min. bending radius without tensile load	5 x diameter
Maximum traction	90 N

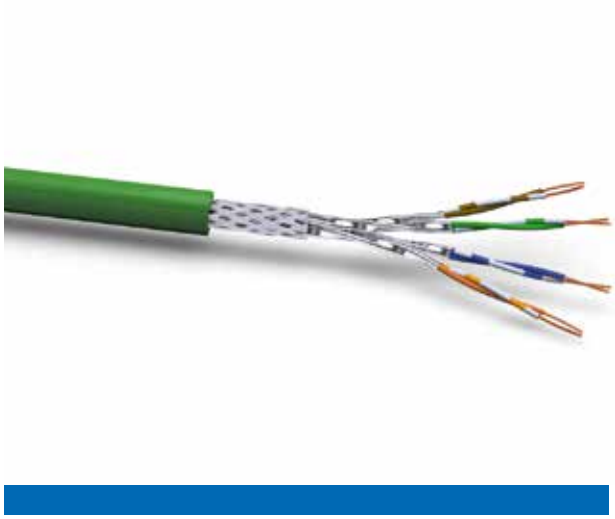


dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 26/7	0,60	6,4	41	22	350

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH 600 flex
S/FTP 4PR AWG 26/7 PUR

Category 7 • Class F • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/10 m) NOM	NEXT (dB) NOM	ACR (dB/10 m) NOM	EL-FEXT (dB/10 m) NOM	RL (dB) NOM
1	0,28	95	95	95	23
4	0,55	95	94	93	27
10	0,85	95	94	90	30
16	1,05	95	94	81	30
20	1,20	92	91	77	30
31,25	1,50	90	88	75	30
62,5	2,10	88	86	70	30
100	2,70	86	83	58	28
200	3,85	84	80	50	26
300	4,70	82	77	47	24
400	5,10	80	75	45	23
500	5,70	78	72	42	22
600	6,75	75	68	40	21

APPLICATION

Flexible data cable for analogue and digital signal transmission in the frequency range up to 600 MHz. It is designed for wiring as switchboard cable in industrial environments.
Use: IEEE 802.3: 10/100/1000/10GBase-T; IEEE 802.5: FDDI, ISDN, ATM

STANDARDS

EN 50288-4-2; EN 50173; ISO/IEC 11801 2nd edition
IEC 61156-6; EN 60332-1; IEC 60754-2; IEC 60811-2-1
RoHS 2002/95/EC

CONSTRUCTION

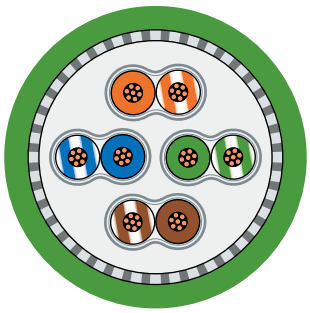
Conductor: copper strand, tinned, AWG 26/7
Core insulation: SFS-PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: pair screen (PIMF) (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (acc. to VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	2 GΩ x km
Characteristic impedance bei 100 MHz	100 ±5 Ω
Mutual capacitance nom.	45 nF/km
Transfer impedance bei 1 MHz	15 m Ω/m
Transfer impedance bei 10 MHz	10 m Ω/m
Transfer impedance bei 30 MHz	30 m Ω/m
Relative propagation velocity ca.	0,76 c
Screen attenuation ≤ 1000 MHz min.	80 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	10 x diameter
Min. bending radius without tensile load	5 x diameter
Maximum traction	90 N



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 26/7	0,60	6,4	40	24	340

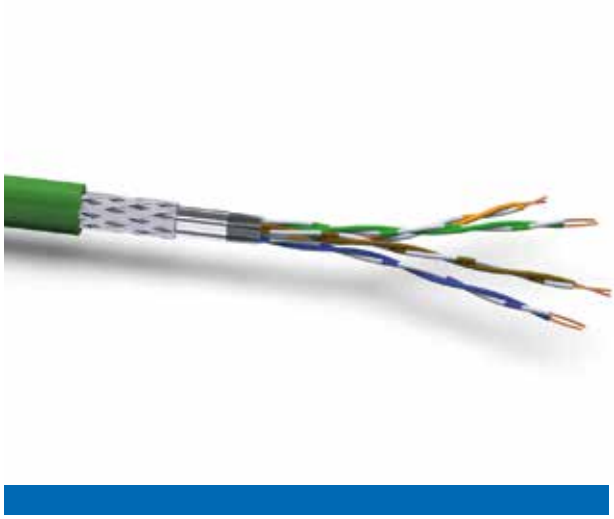
We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA
Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH 200

SF/UTP 4PR AWG 24/1 PUR

Category 5e • Class D
Permanent Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	1,9	80	78	68	24
4	3,7	75	71	56	27
10	5,6	70	64	46	30
16	7,2	68	61	43	30
20	8,1	65	57	41	30
31,25	10,3	60	50	39	30
62,5	14,4	56	42	35	30
100	18,2	50	32	26	28
155	19,9	45	25	24	25
200	24,2	42	18	22	23

APPLICATION

Data cable for analogue and digital signal transmission in the frequency range up to 200 MHz. It is designed for primary (campus), secondary (riser) and tertiary (horizontal) wiring in industrial environments.
Use: IEEE 802.3: 10/100/1000Base-T; FDDI; ISDN; ATM.

STANDARDS

ISO/IEC 11801 2nd edition; EN 50173-1; EN 50288-2-1; IEC 61156-5
EC 60754-2; EN 60332-1; IEC 60811-2-1; RoHS 2002/95/EC

CONSTRUCTION

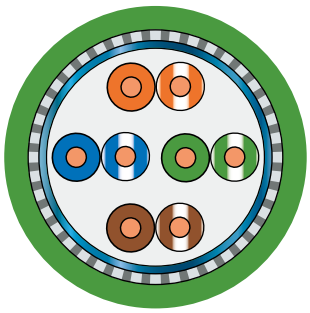
Conductor: copper, solid, bare, AWG 24/1
Core insulation: SFS-PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twinned to pairs, pairs layed up to cable core
Screen: screening foil, plastic-laminated aluminium foil; tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

(Conductor) loop resistance max.	19 Ω/100 m
Insulation resistance min.	5 GΩ x km
Char. impedance 1 – 100 MHz	100 ±15 Ω
Mutual capacitance nom.	50 nF/km
Transfer impedance bei 1 MHz	30 mΩ/m
Transfer impedance bei 10 MHz	10 mΩ/m
Transfer impedance bei 30 MHz	10 mΩ/m
Relative propagation velocity ca.	0,74 c
Screen attenuation ≤ 1000 MHz min.	65 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	8 x diameter
Min. bending radius without tensile load	4 x diameter
Maximum traction	120 N



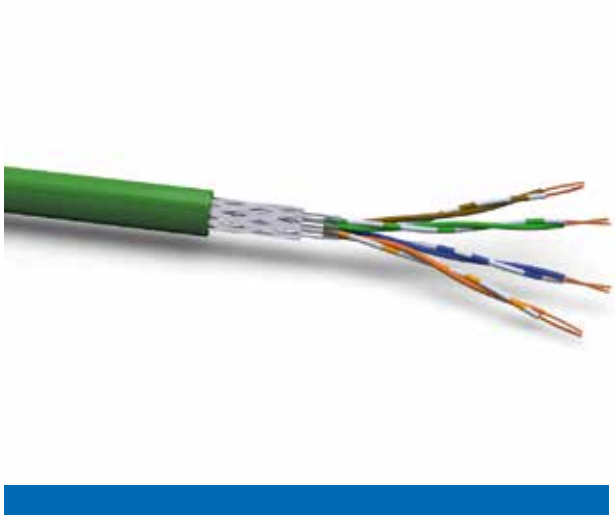
dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 24/1	0,60	6,5	52	28	435

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA
Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH 200 flex
SF/UTP 4PR AWG 24/7 PUR

Category 5e • Class D • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/100 m) NOM	NEXT (dB) NOM	ACR (dB/100 m) NOM	EL-FEXT (dB/100 m) NOM	RL (dB) NOM
1	2,0	80	78	68	24
4	3,9	75	71	56	27
10	6,1	70	64	46	30
16	7,6	68	60	43	30
20	8,5	65	56	41	30
31,25	10,8	60	49	39	30
62,5	15,8	56	40	35	30
100	20,4	50	29	26	28
155	22,9	45	22	24	25
200	27,0	42	15	22	23

APPLICATION

Flexible data cable for analogue and digital signal transmission in the frequency range up to 200 MHz. Robust construction due to use of stranded wires for link lengths up to 100 m.
Use: IEEE 802.3: 10/100/1000/10GBase-T; IEEE 802.5: FDDI, ISDN, ATM

STANDARDS

EN 50288-2-1; EN 50288-2-2; EN 50173 ; ISO/IEC 11801 2nd edition
IEC 61156-5; IEC 60811-2-1; EN 60332-1; IEC 60754-2
RoHS 2002/95/EC

CONSTRUCTION

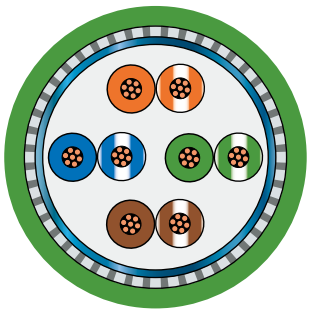
Conductor: copper strand, bare, AWG 24/7
Core insulation: PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: insulating foil (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (acc. to VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	2 GΩ x km
Char. impedance at 100 MHz	100 ±15 Ω
Mutual capacitance nom.	50 nF/km
Transfer impedance bei 1 MHz	30 mΩ/m
Transfer impedance bei 10 MHz	10 mΩ/m
Transfer impedance bei 30 MHz	10 mΩ/m
Relative propagation velocity ca.	0,67 c
Screen attenuation min. bis 100 MHz	60 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	10 x diameter
Min. bending radius without tensile load	5 x diameter
Maximum traction	120 N



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 24/7	0,60	7,1	54	30	450

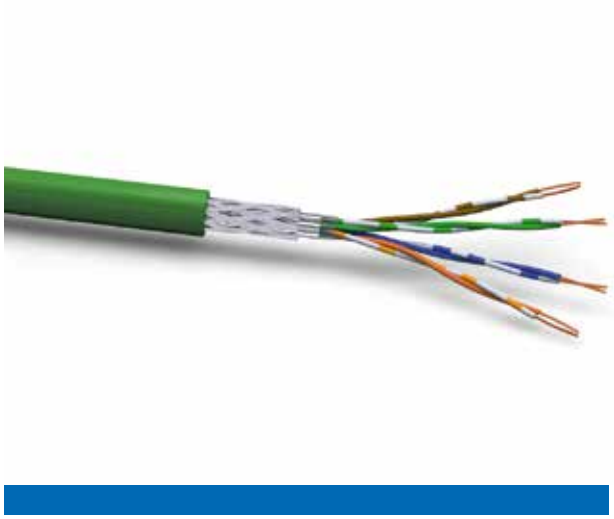
We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA
Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA-ETH 200 flex

SF/UTP 4PR AWG 26/7 PUR

Category 5e • Class D • Flexible cables
Flexible Installation / Indoor



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/10 m) NOM	NEXT (dB) NOM	ACR (dB/10 m) NOM	EL-FEXT (dB/10 m) NOM	RL (dB) NOM
1	0,30	73	73	68	23
4	0,58	65	64	58	26
10	0,93	62	61	51	30
16	1,19	60	59	45	30
20	1,32	58	57	42	30
31,25	1,68	55	53	38	30
62,5	2,43	50	48	34	30
100	3,12	48	45	30	28
155	3,52	46	42	27	26
200	3,90	45	41	23	24

APPLICATION

Flexible data cable for analogue and digital signal transmission in the frequency range up to 200 MHz. It is designed for wiring as switchboard cable in industrial environments.
Use: IEEE 802.3: 10/100/1000/10GBase-T; IEEE 802.5: FDDI, ISDN, ATM

STANDARDS

EN 50288-2-2; EN 50173; ISO/IEC 11801 2nd edition; IEC 61156-6 IEC 60811-2-1; EN 60332-1; IEC 60754-2; RoHS 2002/95/EC

CONSTRUCTION

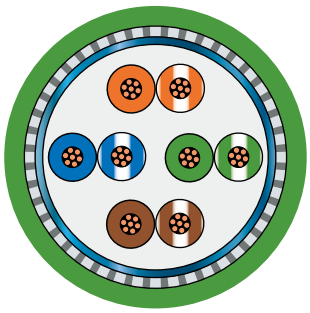
Conductor: copper strand, bare, AWG 26/7
Core insulation: PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: insulating foil (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (n. VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	2 GΩ x km
Char. impedance bei 100 MHz	100 Ω ±15 Ω
Mutual capacitance nom.	50 nF/km
Transfer impedance bei 1 MHz	50 mΩ/m
Transfer impedance bei 10 MHz	50 mΩ/m
Transfer impedance bei 30 MHz	80 mΩ/m
Relative propagation velocity ca.	0,67 c
Screen attenuation min. bis 100 MHz	60 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	10 x diameter
Min. bending radius without tensile load	5 x diameter
Maximum traction	90 N

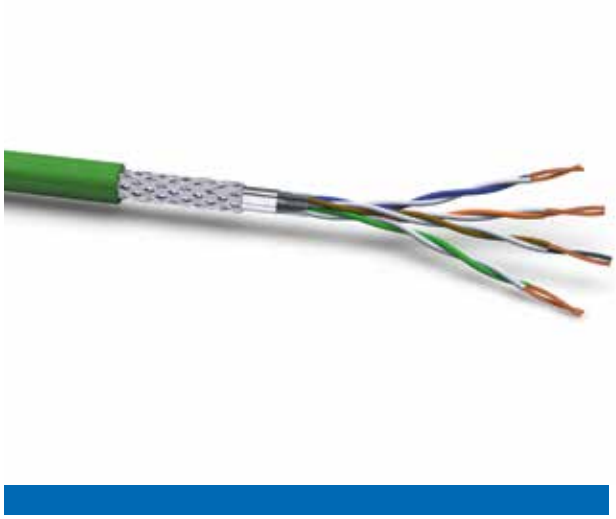


dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 26/7	0,60	6,0	39	22	370

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA-ETH 200 Highflex
SF/UTP 4PR AWG 26/19 PUR

Category 5e • Class D • Ultraflexible cables
Ultraflexible Installation / drag chain



Transmission characteristics

The stated performance data are characteristic measurements.

f (MHz)	Attenuation (dB/10 m) NOM	NEXT (dB) NOM	ACR (dB/10 m) NOM	EL-FEXT (dB/10 m) NOM	RL (dB) NOM
1	0,31	73	73	68	23
4	0,59	65	64	58	26
10	0,93	62	61	51	28
16	1,19	60	59	45	28
20	1,33	58	57	42	28
31,25	1,68	55	53	38	28
62,5	2,44	50	48	34	27
100	3,15	48	45	30	26
155	3,57	46	42	27	25
200	4,12	45	41	23	24

APPLICATION

Data cable for analogue and digital signal transmission for ultraflexible wiring in industrial environments. Specially optimised for high mechanical loads as well as for use in drag chains.
Use: IEEE 802.3: 10/100/1000Base-T; IEEE 802.5: FDDI, ISDN, ATM

STANDARDS

EN 50288-2-2 ; EN 50173 ; ISO/IEC 11801 2nd edition; IEC 61156-5
EN 60332-1; IEC 60754-2; RoHS 2002/95/EC; IEC 60811-2-1

CONSTRUCTION

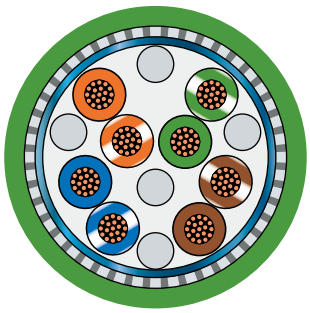
Conductor: copper strand, bare, fine-wired, AWG 26/19
Core insulation: PE
Core identification: whbu-bu, whor-or, whgn-gn, whbn-bn
Core stranding: cores twisted to layers
Screen: screening foil (plastic-laminated aluminium foil); tinned copper wire braid
Sheath: PUR FHF; colour: green RAL 6018

ELECTRICAL CHARACTERISTICS

Loop resistance max. (acc. to VDE 0812)	29 Ω/100 m
Insulation resistance min. (20°C)	5 GΩ x km
Char. impedance bei 100 MHz	100 ±5 Ω
Mutual capacitance nom.	50 nF/km
Transfer impedance max. bei 1 MHz	50 mΩ/m
Transfer impedance max. bei 10 MHz	100 mΩ/m
Transfer impedance max. bei 30 MHz	200 mΩ/m
Relative propagation velocity ca.	0,67 c
Screen attenuation min. bis 100 MHz	40 dB
Test voltage	700 V-AC

THERMAL & MECHANICAL PROPERTIES

Temperature range during installation	-10°C to +50°C
Temperature range stationary	-30°C to +80°C
Min. bending radius under tensile load	10 x diameter
Min. bending radius without tensile load	4 x diameter
Maximum traction	100 N



dimension	sheath thickness appr. mm	diameter appr. mm	cable weight ca. kg/km	copper index kg/km	calorific potential MJ/km
4 x 2 x AWG 26/19	0,9	7,3			

We reserve changes which serve technical progress • Copper base 150,00 € / 100,00 kg
Price upon quantity-specific request

VOKA
Vogtländisches Kabelwerk GmbH • Breitscheidstr. 122 • 08525 Plauen • Germany
Phone: +49 3741 590-0 • Fax: +49 3741 590-270 • E-mail: voka@voka.de • Internet: www.voka.de

VOKA

VOGTLÄNDISCHES
KABELWERK GMBH

CABLES MADE IN GERMANY