Wires and Cables

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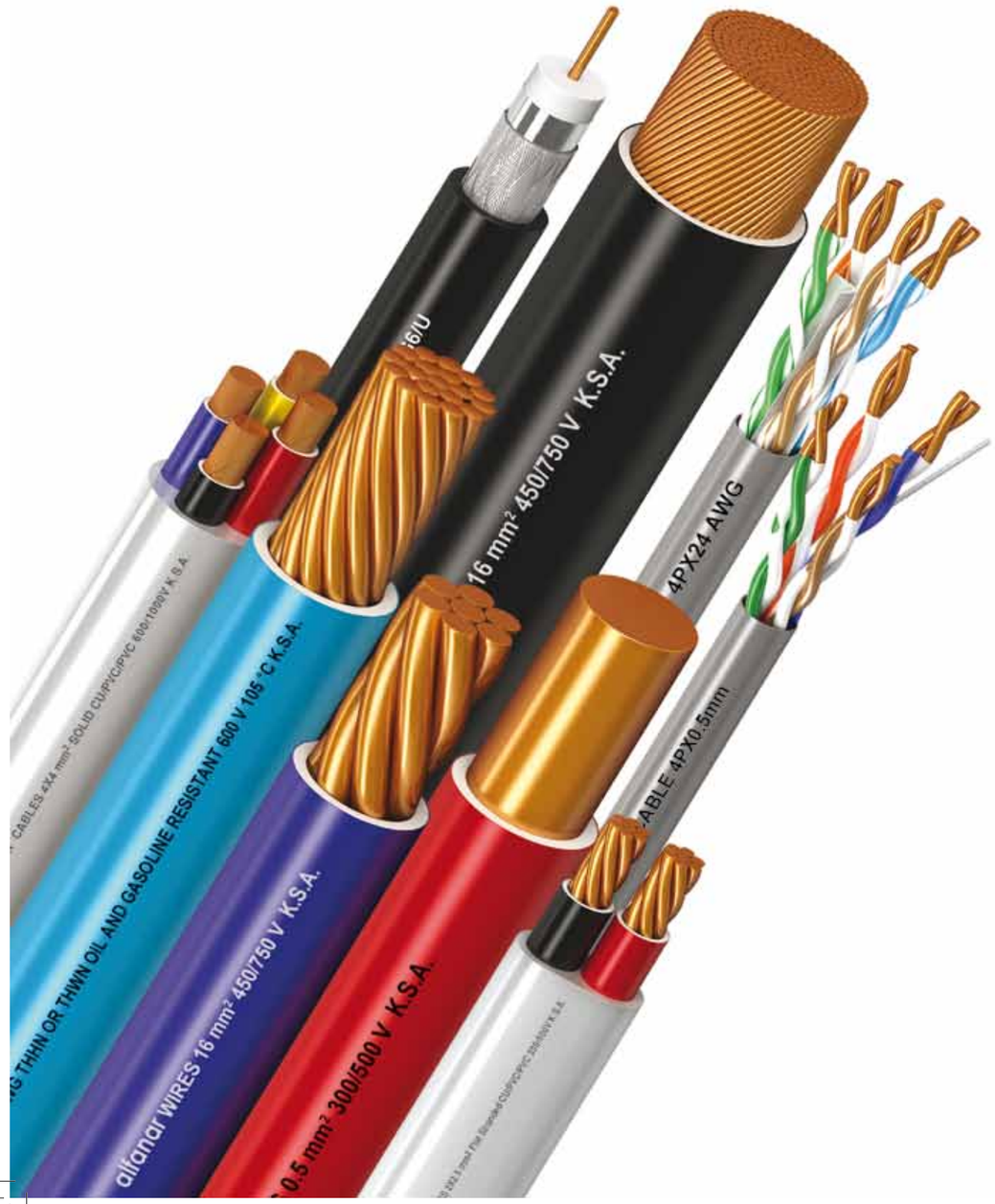
Index

Introduction

Wires and Cables



Introduction

alfanar is equipped with state-of-the-art manufacturing facilities such as latest machineries, instrumentation, quality control and testing laboratory, etc., for the production of cables, indoor wires, coaxial cables, telephone cables, LAN cables, and low-voltage power & control cables in accordance with IEC, BS and UL standards.

In order to make cables of the highest quality, we apply the most advance cable manufacturing technologies thanks to our collaboration with internationally renowned experts in the field of cable manufacturing.

In all our products, we use highest quality raw material, such as copper rods and PVC, supplied to us by some of the leading international manufacturers and distributors.

Backed by **alfanar electric**'s decades-long experience in the field of electrical systems, we can confidently assure our customers that we are able to supply to them a whole range of wires and cables.

At **alfanar**, we always aim at expanding our existing range of products in order to meet our customers› requirements.

With a highly-committed approach, **alfanar** always endeavors to fully satisfy its customers by providing them with high quality products, efficient delivery and prompt after-sales services.

Single Core Wires

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THHN/THWN BUILDING WIRES / UL American Wires 600 V
Plain Copper Conductor, Thermoplastic & Nylon Jacket CU/PVC/NYLON

Technical Specifications:

Applications
THHN/THWN building wires are used for general purpose applications such as for supplying power and lighting in residential and commercial buildings. They are installed in ducts, conduits and raceways in wet and dry locations.

These building wires are designed to suit 105 °C dry and 75 °C wet locations with rated voltage up to 600V. They are also used for Appliance Wire Material (AWM) at 105 °C in dry locations and Machine Tool Wire (MTW) at 90 °C dry and 60°C wet locations such as oil refineries, cement and chemical plants.

Standard
As per UL 83, UL 1581, UL 1063 & UL 62

Rated Voltage
Working Voltage up to 600 V

Conductor
Annealed solid or stranded copper wires

Insulation
Polyvinyl Chloride (PVC) Rated 105 ˚C

Jacket:
Nylon jacket is provided to protect PVC insulation against abrasions and scratches while pulling through conduits. It is also resistant to oil, gasoline and chemicals.

Packing
Available in standard length of 500, 300, 250 and 125 feet on coil
Other lengths available on request

Technical Data:

Conductor			Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Normal Jacket Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Nominal Cross Section		No. x Dia						
AWG	mm^2	No. x Dia	Ohms/km	mm	mm	mm	Kg/km	
14	2.08	1 x 1.63	8.45	0.38	0.10	2.7	24	C124AD10100NX[a]00UXX[b]
12	3.31	1 x 2.05	5.31	0.38	0.10	3.1	36	C125AD10100NX[a]00UXX[b]
10	5.26	1 x 2.59	3.343	0.51	0.10	3.9	58	C126AD10100NX[a]00UXX[b]
18*	0.82	19 x 0.235	21.9	0.38	0.10	2.16	11.5	C222AD10100NX[a]00UXX[b]
16*	1.31	19 x 0.296	13.7	0.38	0.10	2.5	17	C223AD10100NX[a]00UXX[b]
14	2.08	19 x 0.37	8.62	0.38	0.10	2.9	24	C224AD10100NX[a]00UXX[b]
12	3.31	19 x 0.47	5.43	0.38	0.10	3.4	37	C225AD10100NX[a]00UXX[b]
10	5.26	19 x 0.59	3.409	0.51	0.10	4.2	59	C226AD10100NX[a]00UXX[b]
8	8.37	19 x 0.75	2.144	0.76	0.13	5.5	97	C227AD10100NX[a]00UXX[b]
6	13.3	19 x 0.944	1.348	0.76	0.13	6.38	195	C228AD10100NX[a]00UXX[b]

Table 1

***Listed as TFFN**
Other sizes can be provided on specific request.
The above data is approximate and subject to normal manufacturing tolerance.

X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

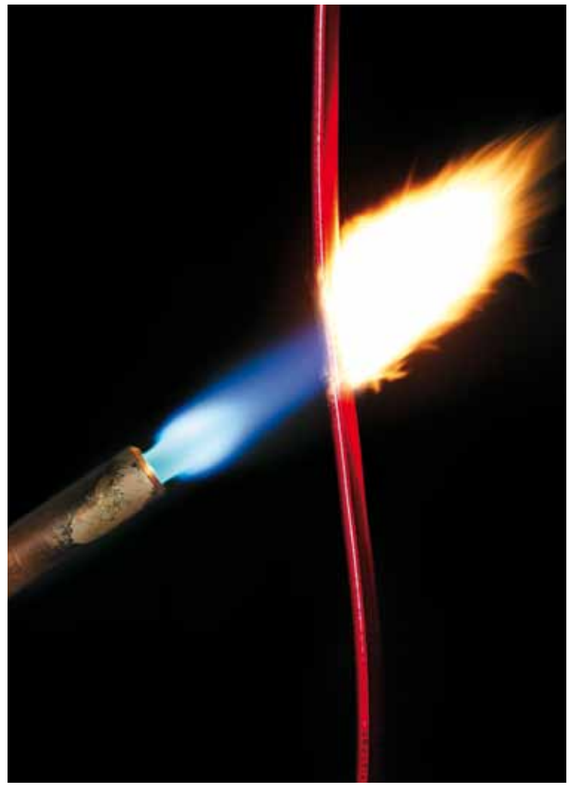
Definition:

THHN: Thermoplastic insulated, High Heat resistant, Nylon Jacketed cable, 105 °C dry locations
THWN: Thermoplastic insulated Heat and moisture resistant, Nylon jacketed cable, 75 °C Wet locations

Features:
- Wires are as per UL Standard, Type THHN/ THWN
- Meets UL 'VW-1' *Flame Test requirements
- Oil resistant and gasoline resistant
- Construction in smaller diameter to improve conduit-fill
- Can be used as:

THHN 105 °C dry locations, building wire
THWN 75 °C wet locations, building wire
MTW 90 °C dry and 60 °C wet locations, machine tool wire
AWM 105 °C dry locations, appliance wire material
TFFN 105 °C dry locations, flexible cord and fixture wire

Reference Standards:
- **UL 83** : Underwriters Laboratories Thermoplastic Insulated Wires and Cables
- **UL 1581**: Underwriters Laboratories Electrical Wires, Cables and Flexible Cords
- **UL 1063**: Underwriters Laboratories Thermoplastic Insulated Wires and Cables
- **UL 62** : Underwriters Laboratories Flexible Cord and Fixture Wire



(* VW-1: Vertical Single Wire Flame Test)

Marking:

Wires are marked as:
alfanar # AWG THHN OR THWN, OIL AND GASOLINE RESISTANT, 600 V 105 °C K.S.A.

Single Core Solid Conductors
Plain Copper Conductor, PVC Insulation CU/PVC

300 / 500 V

Technical Specifications:

Applications
Used for indoor fixed installation in dry locations, distribution in conduits as well as in steel support brackets and equipment wiring.

Standard
As per BS 6004 & IEC 60227-3

Rated Voltage
Working voltage up to 300/500 V

Conductor
Annealed solid copper wire
Class 1 of BS EN 60228 & IEC 60228

Insulation
PVC insulation type TI1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)
Meet flame retardant part IEC 60332-1 and BSEN 60332-1

Packing
Available in standard length of 100 yards on coil
Other lengths available on request

Technical Data:

Conductor		Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Size	Cons.					
mm^2	No. x mm	Ohms/km	mm	mm	Kg/km	
0.5	1 x 0.80	36	0.6	2	8.47	C105PC101000X[a]000XX[b]
0.75	1 x 0.98	24.5	0.6	2.2	11.23	C106PC101000X[a]000XX[b]
1.0	1 x 1.13	18.1	0.6	2.3	13.9	C107PC101000X[a]000XX[b]

Table 2

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Single Core Solid Conductor
Plain Copper Conductor, PVC Insulation CU/PVC

450 / 750 V

Technical Specifications:

Applications
Used for indoor fixed installation in dry locations, distribution in conduits as well as in steel support brackets and equipment wiring.

Standard
As per BS 6004 & IEC 60227-3

Rated Voltage
Working voltage up to 450/750 V

Conductor
Annealed solid copper wire
Class 1 of BS EN 60228 & IEC 60228

Insulation
PVC insulation type TI1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yards on coil
Other lengths available on request

Technical Data:

Conductor		Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Size	Cons.					
mm^2	No. x mm	Ohms/km	mm	mm	Kg/km	
1.5	1 x 1.38	12.1	0.7	2.8	20.27	C108PB101000X[a]000XX[b]
2.5	1 x 1.78	7.41	0.8	3.4	32.4	C110PB101000X[a]000XX[b]
4	1 x 2.25	4.61	0.8	3.9	47.13	C112PB101000X[a]000XX[b]
6	1 x 2.76	3.08	0.8	4.4	67	C113PB101000X[a]000XX[b]
10	1 x 3.57	1.83	1.0	5.6	111.22	C114PB101000X[a]000XX[b]

Table 3

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Single Core Stranded Conductor
Plain Copper Conductor, PVC Insulation CU/PVC

450 / 750 V

Technical Specifications:

Applications
Used for indoor fixed installation in dry locations, distribution in conduits as well as in steel support brackets and equipment wiring.

Standard
As per BS 6004 & IEC 60227-3

Rated Voltage
Working voltage up to 450/750 V

Conductor
Annealed solid copper wire
Class 2 of BS EN 60228 & IEC 60228

Insulation
PVC insulation type TI1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 & 80 yards on coil
Other lengths available on request

Technical Data:

Conductor		Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Size	Cons.					
mm^2	No. x mm	Ohms/km	mm	mm	Kg/km	
1.5	7 x 0.52	12.1	0.7	3.0	21.22	C208PB101000X[a]000XX[b]
2.5	7 x 0.67	7.41	0.8	3.6	33.71	C210PB101000X[a]000XX[b]
4	7 x 0.85	4.61	0.8	4.2	49.92	C212PB101000X[a]000XX[b]
6	7 x 1.04	3.08	0.8	4.8	70.27	C213PB101000X[a]000XX[b]
10	7 x 1.34	1.83	1.0	6.0	116.63	C214PB101000X[a]000XX[b]
16	7 x 1.68	1.15	1.0	7.1	174.85	C215PB101000X[a]000XX[b]
25	7 x 2.14	0.727	1.2	8.9	271.93	C216PB101000X[a]000XX[b]
35	7 x 2.52	0.524	1.2	10.0	370.1	C217PB101000X[a]000XX[b]
50	19 x 1.78	0.387	1.4	11.8	505.7	C218PB101000X[a]000XX[b]
70	19 x 2.22	0.268	1.4	12.7	670	C319PB101000X[a]000XX[b]

Table 4

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Single Core Flexible Conductor
Plain Copper Conductor, PVC Insulation CU/PVC

450 / 750 V

Technical Specifications:

Applications
Used for indoor fixed installation in dry locations for lighting fittings inside electrical panels and connections for apparatuses, switch gears and control gears.

Standard
Wires are made as per BS 6004 & IEC 60227-3

Rated Voltage
Working voltage up to 450/750 V

Conductor
Annealed flexible copper Class 5 of BS EN 60228 & IEC 60228; copper fine wires bunched together to circular conductor

Insulation
PVC insulation type TI1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yards on coil
Other lengths available on request

Technical Data:

Conductor		Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Size	Cons.					
mm^2	No. x mm	Ohms/km	mm	mm	Kg/km	
1.5	30 x 0.25	13.3	0.7	3.0	21.6	C508PB101000X[a]000XX[b]
2.5	50 x 0.25	7.98	0.8	3.7	34.0	C510PB101000X[a]000XX[b]
4	56 x 0.30	4.95	0.8	4.2	49.92	C512PB101000X[a]000XX[b]
6	84 x 0.30	3.3	0.8	4.8	70.83	C513PB101000X[a]000XX[b]
10	80 x 0.40	1.91	1.0	6.2	117.86	C514PB101000X[a]000XX[b]
16	126 x 0.40	1.21	1.0	7.34	176.24	C515PB101000X[a]000XX[b]
25	196 x 0.40	0.780	1.2	9.1	272.8	C516PB101000X[a]000XX[b]
35	273 x 0.40	0.554	1.2	10.3	371.93	C517PB101000X[a]000XX[b]
50	399 x 0.40	0.386	1.4	12.31	533.29	C518PB101000X[a]000XX[b]
70	551 x 0.40	0.272	1.4	14	718.5	C519PB101000X[a]000XX[b]

Table 5

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Single Core Flexible Conductor
Tinned Copper Conductor, PVC Insulated

600 / 1000 V

Technical Specifications:

Applications
Used for indoor fixed installation in dry locations for lighting fittings inside electrical panels and connections for apparatuses, switch gears and control gears.

Standard
As per BS 6231

Rated Voltage
Working voltage up to 600/1000 V

Conductor
Annealed flexible tinned copper wires Class 5 of BS EN 60228
Tinned copper fine wires bunched together to circular conductor

Insulation
Type BK: Type TI1 temperature rating 70 °C as per BS 7655
Type CK: Type TI3 temperature rating 90 °C as per BS 7655
Type CK: PVC rated 105 °C available on request

Packing
Available in standard length of 100 yards on coil
Other lengths available on request

Technical Data:

Conductor		Maximum DC Conductor Resistance at 20o C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
Size	Cons.					
mm^2	No. x mm	Ohms/km	mm	mm	Kg/km	
0.5	16 x 0.2	40.1	0.8	2.6	11.5	T505AA101000X[a]00BXX[b]
0.75	24 x 0.2	26.7	0.8	2.8	14.6	T506AA101000X[a]00BXX[b]
1	32 x 0.2	20	0.8	2.92	17.6	T507AA101000X[a]00BXX[b]
1.5	30 x 0.25	13.7	0.8	3.2	22.9	T508AA101000X[a]00BXX[b]
2.5	50 x 0.25	8.21	0.8	3.7	33.6	T510AA101000X[a]00BXX[b]
4	56 x 0.30	5.09	0.8	4.2	49.5	T512AA101000X[a]00BXX[b]
6	84 x 0.30	3.39	0.8	4.8	69.8	T513AA101000X[a]00BXX[b]
10	80 x 0.40	1.95	1.0	6.2	117.1	T514AA101000X[a]00BXX[b]
16	126 x 0.40	1.24	1.0	7.34	175.3	T515AA101000X[a]00BXX[b]
25	196 x 0.40	0.795	1.2	9.1	270.3	T516AA101000X[a]00BXX[b]
35	273 x 0.40	0.565	1.2	10.3	365.3	T517AA101000X[a]00BXX[b]
50	399 x 0.40	0.393	1.4	12.31	530.7	T518AA101000X[a]00BXX[b]
70	551 x 0.40	0.277	1.4	14	716.2	T519AA101000X[a]00BXX[b]

Other sizes can be provided on specific request — Table 6
The above data is approximate and subject to normal manufacturing tolerance
X^a : Insulation color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Notes

Multi Core Cables

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Solid Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

300 / 500 V

Technical Specifications:

Applications
Used for transferring electrical signals among different control units and also used in alarm systems

Standard
As per BS 6004 & IEC 60227-4

Rated Voltage
Working voltage up to 300/500 V

Conductor
Annealed solid copper
As per BS EN 60228 & IEC 60228 Class 1

Insulation
PVC temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to get round cable

Sheath
PVC type TM1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Coils of 100 yards or 1000 meters on wooden drum
Other lengths are available upon request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Thickness of Inner Covering	Nominal sheath Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.						
No.	mm^2	No. x mm	mm	mm	mm	mm	Kg/km	
2	1	1 x 1.13	0.6	0.4	1.2	7.9	97	C107PC10200PX[a]01FXX[b]
3			0.6	0.4	1.2	8.3	114	C107PC10300PX[a]04FXX[b]
4			0.6	0.4	1.2	8.9	136	C107PC10400PX[a]08FXX[b]
2	1.5	1 x 1.38	0.7	0.4	1.2	8.89	125	C108PC10200PX[a]01FXX[b]
3			0.7	0.4	1.2	10	150	C108PC10300PX[a]04FXX[b]
4			0.7	0.4	1.2	10	180	C108PC10400PX[a]08FXX[b]
2	2.5	1 x 1.78	0.8	0.4	1.2	11	171	C110PC10200PX[a]01FXX[b]
3			0.8	0.4	1.2	11.4	210	C110PC10300PX[a]04FXX[b]
4			0.8	0.4	1.4	11.78	255	C110PC10400PX[a]08FXX[b]
2	4	1 x 2.25	0.8	0.4	1.2	11	201	C112PC10200PX[a]01FXX[b]
3			0.8	0.4	1.2	11.6	249	C112PC10300PX[a]04FXX[b]
4			0.8	0.4	1.4	13	320	C112PC10400PX[a]08FXX[b]
2	6	1 x 2.76	0.8	0.4	1.2	12	260	C113PC10200PX[a]01FXX[b]
3			0.8	0.4	1.4	13.7	338	C113PC10300PX[a]04FXX[b]
4			0.8	0.4	1.4	15	434	C113PC10400PX[a]08FXX[b]
2	10	1 x 3.57	1	0.6	1.4	15.2	423	C114PC10200PX[a]01FXX[b]
3			1	0.6	1.4	16.1	533	C114PC10300PX[a]04FXX[b]
4			1	0.6	1.4	17.6	668	C114PC10400PX[a]08FXX[b]

Table 7

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
For voltage 450/750 V, can be provided on specific request
X^a : Sheath color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Solid Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

600 / 1000 V

Technical Specifications:

Applications
Used for transferring electrical signals among different control units and also used in alarm systems

Standard
As per IEC 60502-1

Rated Voltage
Working voltage up to 600/1000 V

Conductor
Annealed solid copper
As per IEC 60228 Class 1

Insulation
PVC type PVC/A temperature rating 70 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to get round cable

Sheath
PVC type ST1 temperature rating 80 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yards or 1000 meters coiled on wooden drums
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Nominal sheath Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.					
No.	mm^2	No. x mm	mm	mm	mm	Kg/km	
2	1.5	1 x 1.38	0.8	1.8	10	150	C108PA10200CX[a]01IXX[b]
3			0.8	1.8	10.2	170	C108PA10300CX[a]04IXX[b]
4			0.8	1.8	10.80	204	C108PA10400CX[a]08IXX[b]
2	2.5	1 x 1.78	0.8	1.8	10.40	183	C108PA10200CX[a]01IXX[b]
3			0.8	1.8	11	221	C108PA10300CX[a]04IXX[b]
4			0.8	1.8	11.80	270	C108PA10400CX[a]08IXX[b]
2	4	1 x 2.25	1	1.8	12.10	260	C108PA10200CX[a]01IXX[b]
3			1	1.8	12.8	320	C108PA10300CX[a]04IXX[b]
4			1	1.8	13.90	390	C108PA10400CX[a]08IXX[b]
2	6	1 x 2.76	0.8	1.8	13.20	330	C108PA10200CX[a]01IXX[b]
3			0.8	1.8	14	415	C108PA10300CX[a]04IXX[b]
4			0.8	1.8	15.5	515	C108PA10400CX[a]08IXX[b]
2	10	1 x 3.57	1	1.8	14.80	460	C108PA10200CX[a]01IXX[b]
3			1	1.8	15.70	590	C108PA10300CX[a]04IXX[b]
4			1	1.8	18.20	725	C108PA10400CX[a]08IXX[b]

Table 8

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
For voltage 450/750 V, can be provided on specific request
X^a : Sheath color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Stranded Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

300 / 500 V

Technical Specifications:

Applications
Used for outdoor and indoor installations in damp and wet locations for supplying power to electrical units and equipment

Standard
As per BS 6004 & IEC 60227- 4

Rated Voltage
Working voltage up to 300/500 V

Conductor
Annealed stranded copper
As per BS EN 60228 & IEC 60228 Class 2

Insulation
PVC temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to get round cable

Sheath
PVC type TM1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yard coils
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Thickness of Inner Covering	Nominal sheath Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.						
No.	mm^2	No. x mm	mm	mm	mm	mm	Kg/km	
2	1.5	7 x 0.52	0.7	0.4	1.2	9.2	130	C208PC10200PX[a]01FXX[b]
3			0.7	0.4	1.2	9.7	151	C208PC10300PX[a]04FXX[b]
4			0.7	0.4	1.2	10.5	182	C208PC10400PX[a]08FXX[b]
2	2.5	7 x 0.67	0.8	0.4	1.2	10.4	174	C210PC10200PX[a]01FXX[b]
3			0.8	0.4	1.2	11	208	C210PC10300PX[a]04FXX[b]
4			0.8	0.4	1.2	12.0	252	C210PC10400PX[a]08FXX[b]
2	4	7 x 0.85	0.8	0.4	1.2	11.5	213	C212PC10200PX[a]01FXX[b]
3			0.8	0.4	1.2	12.2	278	C212PC10300PX[a]04FXX[b]
4			0.8	0.4	1.4	13.7	355	C212PC10400PX[a]08FXX[b]
2	6	7 x 1.04	0.8	0.4	1.2	12	298	C213PC10200PX[a]01FXX[b]
3			0.8	0.4	1.2	13.90	384	C213PC10300PX[a]04FXX[b]
4			0.8	0.4	1.2	15.5	489	C213PC10400PX[a]08FXX[b]
2	10	7 x 1.34	1	0.6	1.4	14.30	351	C214PC10200PX[a]01FXX[b]
3			1	0.6	1.4	15.20	430	C214PC10300PX[a]04FXX[b]
4			1	0.6	1.4	18.60	741	C214PC10400PX[a]08FXX[b]
2	16	7 x 1.68	1	0.6	1.4	18.20	667	C215PC10200PX[a]01FXX[b]
3			1	0.6	1.4	19.80	870	C215PC10300PX[a]04FXX[b]
4			1	0.6	1.4	21.60	1086	C215PC10400PX[a]08FXX[b]

Table 9

Other sizes can be provided on specific request
The above data is approximate and subject to normal manufacturing tolerance
X^a : Sheath color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Stranded Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

600 / 1000 V

Technical Specifications:

Applications
Used for transferring electrical signals between control units and also used in alarm systems

Standard
As per IEC 60502- 1

Rated Voltage
Working voltage up to 600/1000 V

Conductor
Annealed stranded copper
As per BS EN 60228 & IEC 60228 Class 2

Insulation
PVC type PVC/A temperature rating 70 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to get round cable

Sheath
PVC type ST1 temperature rating 80 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yard coils
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Nominal sheath Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.					
No.	mm^2	No. x mm	mm	mm	mm	Kg/km	
2	1.5	7 x 0.52	0.8	1.8	9.9	150	C208PA10200CX[a]01IXX[b]
3			0.8	1.8	10.6	174	C208PA10300CX[a]04IXX[b]
4			0.8	1.8	11.3	206	C208PA10400CX[a]08IXX[b]
2	2.5	7 x 0.67	0.8	1.8	10.9	185	C210PA10200CX[a]01IXX[b]
3			0.8	1.8	11.6	220	C210PA10300CX[a]04IXX[b]
4			0.8	1.8	12.30	265	C210PA10400CX[a]08IXX[b]
2	4	7 x 0.85	1	1.8	12.8	265	C212PA10200CX[a]01IXX[b]
3			1	1.8	13.6	320	C212PA10300CX[a]04IXX[b]
4			1	1.8	14.8	390	C212PA10400CX[a]08IXX[b]
2	6	7 x 1.04	1	1.8	14.0	337	C213PA10200CX[a]01IXX[b]
3			1	1.8	14.90	415	C213PA10300CX[a]04IXX[b]
4			1	1.8	16.2	510	C213PA10400CX[a]08IXX[b]
2	10	7 x 1.34	1	1.8	15.70	462	C214PA10200CX[a]01IXX[b]
3			1	1.8	16.70	580	C214PA10300CX[a]04IXX[b]
4			1	1.8	18.20	722	C214PA10400CX[a]08IXX[b]
2	16	7 x 1.68	1	1.8	17.80	650	C215PA10200CX[a]01IXX[b]
3			1	1.8	19.0	830	C215PA10300CX[a]04IXX[b]
4			1	1.8	21.80	1043	C215PA10400CX[a]08IXX[b]

Table 10

Other sizes can be provided on specific request
Inner covering is optional
The above data is approximate and subject to normal manufacturing tolerance
X^a : Sheath color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Flexible Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

300 / 500 V

Technical Specifications:

Applications
Used for mobile electrical equipment and units, supply pumps and motors, etc., in which cables with high flexibility are required. These cables are also used in household appliances such as, washing machines, refrigerators, kitchen equipment, and in offices and prefabricated houses

Standard
As per BS 6500 & IEC 60227-7

Rated Voltage
Working voltage up to 300/500 V

Conductor
Annealed flexible copper as per BS EN 60228 & IEC 60228 Class 5

Insulation
PVC temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to form round cable

Sheath
PVC type TM2 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100, 80 and 50 yard coils
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Nominal sheath Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.					
No.	mm^2	No. x mm	mm	mm	mm	Kg/km	
2	0.5	16 x 0.2	0.6	1.8	6	48	C505PC10200FX[a]03BXX[b]
3			0.6	1.8	6.2	57	C505PC10300FX[a]06BXX[b]
4			0.6	1.8	6.8	69	C505PC10400FX[a]10BXX[b]
2	0.75	24 x 0.2	0.6	1.8	6.30	58	C506PC10200FX[a]03BXX[b]
3			0.6	1.8	6.70	70	C506PC10300FX[a]06BXX[b]
4			0.6	1.8	7.25	83	C506PC10400FX[a]10BXX[b]
2	1	32 x 0.2	0.6	1.8	6.7	66	C507PC10200FX[a]03BXX[b]
3			0.6	1.8	7.1	80	C507PC10300FX[a]06BXX[b]
4			0.6	1.8	8	104	C507PC10400FX[a]10BXX[b]
2	1.5	30 x 0.25	0.7	1.8	8.8	90	C508PC10200FX[a]03BXX[b]
3			0.7	1.8	9.0	113	C508PC10300FX[a]06BXX[b]
4			0.7	1.8	9.8	144	C508PC10400FX[a]10BXX[b]
2	2.5	50 x 0.25	0.8	1.8	9.7	138	C510PC10200FX[a]03BXX[b]
3			0.8	1.8	10.8	174	C510PC10300FX[a]06BXX[b]
4			0.8	1.8	12.2	215	C510PC10400FX[a]10BXX[b]
2	4*	56 x 0.3	0.8	1.8	10.8	190	C512PB10200FX[a]03BXX[b]
3			0.8	1.8	12.8	242	C512PB10300FX[a]06BXX[b]
4			0.8	1.8	13.6	301	C512PB10400FX[a]10BXX[b]
2	6*	84 x 0.3	0.8	1.8	12.0	255	C513PB10200FX[a]03BXX[b]
3			0.8	1.8	13.0	320	C513PB10300FX[a]06BXX[b]
4			0.8	1.8	14.1	401	C513PB10400FX[a]10BXX[b]
2	10*	80 x 0.4	1	1.8	15.2	412	C514PB10200FX[a]03BXX[b]
3			1	1.8	16.1	521	C514PB10300FX[a]06BXX[b]
4			1	1.8	17.7	657	C514PB10400FX[a]10BXX[b]
2	16*	126 x 0.4	1	1.8	17.5	575	C515PB10200FX[a]03BXX[b]
3			1	1.8	18.5	736	C515PB10300FX[a]06BXX[b]
4			1	1.8	20.5	935	C515PB10400FX[a]10BXX[b]

The above data is approximate and subject to normal manufacturing tolerance — Table 11
* For sizes 4mm2 and above, available on request with rated voltage 450/750V as above table
X^a : Sheath color (see Coding Key on page 57)
XX^b : Packing type (see Coding Key on page 57)

Flexible Cables
PVC Insulated and PVC Sheathed, CU/PVC/PVC

600 / 1000 V

Technical Specifications:

Applications
Used for mobile electrical equipment and units, supply pumps and motors, etc., in which cables with high flexibility are required. These cables are also used in household appliances such as, washing machines, refrigerators, kitchen equipment, and in offices and prefabricated houses

Standard
As per IEC 60502-1

Rated Voltage
Working voltage up to 600/1000 V

Conductor
Annealed flexible copper as per IEC 60228 Class 5

Insulation
PVC type PVC/A temperature rating 70 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Assembly
Laying up of insulated cores together to form round cable

Sheath
PVC type ST1 temperature rating 80 °C as per IEC 60502-1
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard lengths of 1000 meter on wooden drum
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Nominal sheath Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.					
No.	mm^2	No. x mm	mm	mm	mm	Kg/km	
2	1.5	30 x 0.25	0.8	1.8	10	137	C508PA10200CX[a]01IMR
3			0.8	1.8	10.5	160	C508PA10300CX[a]04IMR
4			0.8	1.8	11.4	193	C508PA10400CX[a]08IMR
2	2.5	50 x 0.25	0.8	1.8	10.9	173	C510PA10200CX[a]01IMR
3			0.8	1.8	11.5	206	C510PA10300CX[a]04IMR
4			0.8	1.8	12.5	250	C510PA10400CX[a]08IMR
2	4	56 x 0.3	1	1.8	12.9	248	C512PA10200CX[a]01IMR
3			1	1.8	13.6	300	C512PA10300CX[a]04IMR
4			1	1.8	14.8	369	C512PA10400CX[a]08IMR
2	6	84 x 0.3	1	1.8	14.0	312	C513PA10200CX[a]01IMR
3			1	1.8	14.8	384	C513PA10300CX[a]04IMR
4			1	1.8	16.2	476	C513PA10400CX[a]08IMR
2	10	80 x 0.4	1	1.8	16.0	443	C514PA10200CX[a]01IMR
3			1	1.8	16.9	548	C514PA10300CX[a]04IMR
4			1	1.8	18.5	687	C514PA10400CX[a]08IMR
2	16	126 x 0.4	1	1.8	18.1	602	C515PA10200CX[a]01IMR
3			1	1.8	19.2	767	C515PA10300CX[a]04IMR
4			1	1.8	21.1	970	C515PA10400CX[a]08IMR

Other sizes can be provided on specific request — Table 12
The above data is approximate and subject to normal manufacturing tolerance
X^a : Sheath color (see Coding Key on page 57)
IMR : See Coding Key on page 57

Flat Cables
Flat Twin Cables PVC Insulated and PVC Sheathed Cable CU/PVC/PVC

300 / 500 V

Technical Specifications:

Applications
Used for supplying power to fixed electrical equipment and appliances in various types of buildings. Due to its flat shape it occupies lesser space when fixed on external or internal walls of buildings and in outdoor electronic signboards

Standard
As per BS 6004

Rated Voltage
Working voltage up to 300/500 V

Conductor
Annealed stranded copper as per BS EN 60228 Class 2

Insulation
PVC type TI1 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Sheath
PVC temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard lengths of 100, 80, 50 and 40 yards coils
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Nominal sheath Thick-ness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.					
No.	mm^2	No. x mm	mm	mm	mm	Kg/km	
2	1.5	7 x 0.52	0.7	0.9	4.8 x 7.8	75	C208PCF0200PX^{a}01BXX^{b}
3			0.7	0.9	4.8 x10.8	105	C208PCF0300PX^{a}04BXX^{b}
2	2.5	7 x 0.67	0.8	1.0	5.7 x 9.3	107	C210PCF0200PX^{a}01BXX^{b}
3			0.8	1.0	5.7 x 12.9	154	C210PCF0300PX^{a}04BXX^{b}
2	4	7 x 0.85	0.8	1.0	6.2 x 10.3	145	C212PCF0200PX^{a}01BXX^{b}
3			0.8	1.0	6.2 x 14.7	209	C212PCF0300PX^{a}04BXX^{b}
2	6	7 x 1.04	0.8	1.1	7.1 x 11.8	202	C213PCF0200PX^{a}01BXX^{b}
3			0.8	1.1	7.1 x 16.5	293	C213PCF0300PX^{a}04BXX^{b}
2	10	7 x 1.34	1	1.2	8.5 x 14.6	315	C214PCF0200PX^{a}01BXX^{b}
3			1	1.2	8.5 x 21.0	430	C214PCF0300PX^{a}04BXX^{b}

Other sizes can be provided on specific request
Flat cables are available with solid conductors on request
The above data is approximate and subject to normal manufacturing tolerance
X^{a} : Sheath color (see Coding Key on page 57)
XX^{b} : Packing type (see Coding Key on page 57)

Table 13

Parallel Twin
PVC Insulated, Non-Sheathed Cable, 300/300 V

300 / 300 V

Technical Specifications:

Applications
Used for internal wiring inside electrical equipment and appliances. Its main feature is its flat shape

Standard
As per BS 6500

Conductor
Annealed flexible copper as per BS EN 60228 Class 5

Insulation
PVC type TI2 temperature rating 70 °C as per BS 7655
(PVC rated 85 °C or 105 °C available on request)

Packing
Available in standard length of 100 yard coils
Other lengths available on request

Technical Data:

Number of cores	Conductor		Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	Item Code
	Size	Cons.				
No.	mm^2	No. x mm	mm	mm	Kg/km	
2	0.5	16 x 0.20	0.8	2.5 x 5.0	23	C505FEB02000X^{a}03BXX^{b}
2	0.75	24 x 0.20	0.8	2.8 x 5.5	29	C506FEB02000X^{a}03BXX^{b}
2	1.0	32 x 0.20	0.8	2.9 x 5.8	35	C507FEB02000X^{a}03BXX^{b}

The above data is approximate and subject to normal manufacturing tolerance
X_{a} : Sheath color (see Coding Key on page 57)
XX_{b} : Packing type (see Coding Key on page 57)

Table 14

SIGNAL, COMMUNICATION & DATA CABLES

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Telephone cables
Solid Copper Conductor, PVC Insulated and PVC Sheathed

Technical Specifications:

Applications
Used for indoor installation and interconnection of transmission, telephone, telegraph and electronic equipment

Standard
IEC 189 Part 2

Conductor
Annealed solid plain copper as per IEC 60228 Class 1

Insulation
PVC temperature rating 70 °C as per IEC 189-2

Assembly
Insulated cores are twisted into pairs and pairs are twisted together to form the final assembly

Jacket
PVC temperature rating 90 °C as per IEC 189-2,
rip cord is provided under final jacket for easy stripping

Packing
Available in standard length of 100, 90, 80 yard and 500 feet.
Other lengths available on request

Technical Data:

Number of Pairs	Conductor construction		Max DC conductor resistance at 20 C	Minimum insulation thickness	Minimum sheath thickness	Approx. overall diameter	Approx. net weight	Item Code
No.	No.	mm	Ohm/km	mm	mm	mm	Kg/km	
1	1	0.5	97.8	0.15	0.6	3	12	TEL01P50UEXX[a]
2	1	0.5	97.8	0.15	0.6	4.3	21	TEL02P50UEXX[a]
3	1	0.5	97.8	0.15	0.6	4.5	26	TEL03P50UEXX[a]
4	1	0.5	97.8	0.15	0.6	4.9	32	TEL04P50UEXX[a]
5	1	0.5	97.8	0.15	0.6	5.4	39	TEL05P50UEXX[a]
6	1	0.5	97.8	0.15	0.7	6	48	TEL06P50UEXX[a]
8	1	0.5	97.8	0.15	0.7	6.4	59	TEL08P50UEXX[a]
10	1	0.5	97.8	0.15	0.7	7.2	72	TEL10P50UEXX[a]
12	1	0.5	97.8	0.15	0.7	7.7	86	TEL12P50UEXX[a]

The above data is approximate and subject to normal manufacturing tolerance. Table 15
XX[a] : Packing type (see Coding Key on page 58)

Coaxial cables (RG6 / U)
Solid Copper Clad Steel Conductor, Foam Polyethylene Insulated, Braid Shielded and PVC Jacketed

Technical Specifications:

Applications
Used in all areas of the high frequency transmission technology (for TV aerials, satellite receivers, etc.)

Standard
MIL-C-17

Conductor
Annealed solid copper clad steel (CCS) with high conductivity

Insulation
Cellular physical foam polyethylene

Shield
Aluminum polyester tape with aluminium wire braids

Sheath
PVC, flame retardant, temperature rating 85 °C and sunlight resistant

Packing
Available in standard length of 1000 and 300 feet coils
Other lengths available on request

Technical Data:

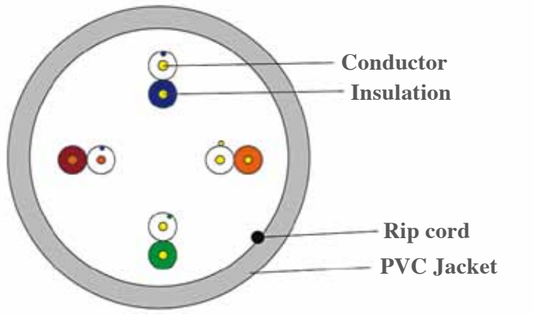
Conductor diameter	Insulation diameter	Shielding	Outer diameter	Nominal impedance	Nominal capacitance	Nominal attenuation at 20 C		Item Code
mm	mm	%	mm	Ω	Pf/M	MHz	dB/100M	
1.02	4.8	100% AL/PET 75% AL braid	7	75 +- 3	53	100	6.3	RG06ZFBXX[a]
						200	8.65	
						400	12.23	
						700	16.56	
						900	18.99	
						1000	20.04	

XX[a] : Packing type (see Coding Key on page 59) Table 16

CAT 5e UTP – 4Px 24 AWG CABLE SPECIFICATIONS
Solid Copper Conductor, Polyethylene Insulated and PVC Jacketed

Cable Specifications:

Cross Section



Packing
305 m/1000ft per pull box / spool box

Standard
TIA/EIA 568-B.2 & ISO/IEC 11801, UL444

Construction	
Conductor	Solid bare copper
AWG	24
Conductor Dia. Nom (±0.005)	0.505
Insulation	HDPE
Average Thickness (± 0.03mm)	0.20
Min. Point Thickness (mm)	0.17
Insulating Diameter (mm)	0.905
Twisting Pair Dia. (± 0.01mm)	1.81
Jacket	PVC
Average Thickness (± 0.03mm)	0.50
Min. Point Thickness (mm)	0.47
Outer Dia. (±0.30 mm)	4.72
Rip Cord	YES

Color:
Insulation colors
blue,white/blue
orange,white/orange
green,white/green
brown,white/brown

Jacket colors:
As per customers request

Item Code: CAT5e 4UEXX[a]
XX[a] : Packing type (See Coding Key on page 60)

Marking :
alfanar LAN Cables CAT 5e UT P4P x 24 AWG 75 °C Verified To TIA / EIA 568-B.2 & ISO/IEC 11801

Performance:

Electrical Characteristics			
Frequency (MHZ)	ATT (max) (dB/100m)	NEXT (min) (dB/100m)	EL FEXT (min) (dB/100m)
1	2.2	60.0	58.6
4	3.9	54.8	46.6
8	5.5	50.0	40.6
10	6.2	48.5	38.6
16	7.9	45.2	34.5
20	8.9	43.7	32.6
25	10.0	42.1	30.7
31.25	11.2	40.5	28.7
62.5	16.2	35.7	22.7
100	21.0	32.3	18.6

Frequency (MHZ)	Min. RL (dB/100m)	Min. PS NEXT (dB/100m)	Min. PS ELFEXT (dB)	Min PS ACR (dB)
1	19.0	57.0	55.6	54.0
4	19.0	51.8	43.6	47.9
8	19.0	47.0	37.5	41.5
10	19.0	45.5	35.6	39.3
16	19.0	42.2	31.5	34.3
20	19.0	40.7	29.6	31.8
25	18.0	39.1	27.7	29.1
31.25	17.1	37.5	25.7	26.3
62.5	14.1	32.7	19.7	16.4
100	12.0	29.3	15.6	8.3

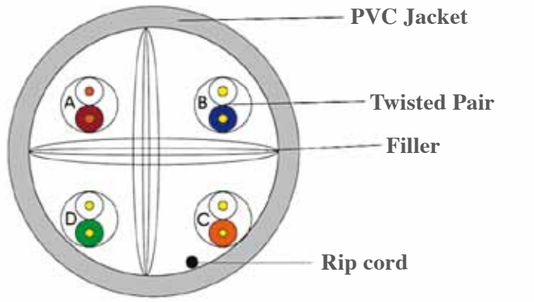
NVP@100 MHz:68%	
Impedance	100+-15 Ohm
Max. Conductor DC Resistance 20 C (ohm/km)	<=95
Resistance Unbalance (%)	<=5
Dielectric Strength	Dc. 1.5 kV, 1 min

Mechanical Characteristics	
Test object	Jacket
Test material	PVC
Before	Tensile strength (mpa) >=13.8
Aging	Elongation (%) >=100
Aging condition	(Cxhrs) 100 × 240
After	Tensile strength (mpa) >=85% of unaged
Aging	Elongation (%) >=85% of unaged
Cold bend (-20±2 c× 4 hrs)	No crack

CAT 6 UTP – 4Px 23 AWG CABLE SPECIFICATIONS
Solid Copper Conductor, Polyethylene Insulated and PVC Jacketed

Cable Specifications:

Cross Section



Packing
305 m/1000ft per pull box / spool box

Standard
TIA/EIA 568-B.2 & ISO/IEC 11801, UL444

Construction	
Conductor	Solid bare copper
AWG	23
Conductor Dia. Nom (±0.005)	0.570
Insulation	HDPE
Average Thickness (± 0.03mm)	0.222
Min. Point Thickness (mm)	0.198
Insulating Diameter (mm)	1.02
Twisting Pair Dia. (± 0.01mm)	2.04
Filler	Polyster
Jacket	PVC
Average Thickness (± 0.03mm)	0.60
Min. Point Thickness (mm)	0.55
Outer Dia. (±0.30 mm)	6.20
Rip Cord	YES

Color:
Insulation colors
Blue, white/blue
Orange, white/orange
Green, white/green
Brown, white/brown

Jacket colors:
As per customers request

Item Code: CAT6 4UEXX[a]
XX[a] : Packing type (See Coding Key on page 60)

Marking:
alfanar LAN Cables CAT 6 UTP 4P x 23 AWG 75 °C Verified To TIA/ EIA 568-B.2 & ISO/IEC 11801

Performance:

Electrical Characteristics			
Frequency (MHZ)	Return loss (Min dB)	Attenuation Max (dB/100m)	NEXT (Min dB)
1	19.1	1.90	65.0
4	21.0	3.5	64.1
8	21.0	5.0	59.4
10	21.0	5.5	57.8
16	20.0	7.0	54.6
20	19.5	7.9	53.1
25	19.0	8.9	51.5
31.25	18.5	10.0	50.0
62.5	16.0	14.4	45.1
100	14.0	18.6	41.8
200	11.0	27.4	36.9
250	10.0	31.1	35.3

Frequency (MHZ)	PSNEXT Min(dB)	ELFEXT Min(dB/100m)	Delay Max(ns/100m)
1	62.0	64.2	570.0
4	61.8	52.1	552.0
8	57.0	46.1	546.0
10	55.5	44.2	545.0
16	52.2	40.1	543.0
20	50.7	38.2	542.0
25	49.1	36.2	541.0
31.25	47.5	34.3	540.0
62.5	42.7	28.3	538.0
100	39.3	24.2	537.0
200	34.3	18.2	536.0
250	32.7	16.2	536.0

NVP@100 MHz:68%

Mechanical Characteristics	
Test object	Jacket
Test material	PVC
Before	Tensile strength (mpa) >=13.8
Aging	Elongation (%) >=100
Aging condition	(Cxhrs) 100 × 240
After	Tensile strength (mpa) >=85% of unaged
Aging	Elongation (%) >=85% of unaged
Cold bend (-20±2 c× 4 hrs)	No crack

TECHNICAL INFORMATION

www.alfanar.com

Current Rating (Ampacity) For UL THHN/THWN Wires

In accordance with NEC for copper conductor at 30 °C ambient temperature

Size	No. of Strands	THHN 105 ºC Dry		THWN 75 ºC Wet	
		In Free Air	In Conduit (Pipes)	In Free Air	In Conduit (Pipes)
AWG	No	Ampere	Ampere	Ampere	Ampere
14*	1	35	25	30	20
12*	1	40	30	35	25
10*	1	50	40	45	35
18**	19	16	12	12	8
16**	19	20	15	15	10
14**	19	35	25	30	20
12**	19	40	30	35	25
10**	19	55	40	50	35
8**	19	80	55	70	50
6**	19	105	75	95	65

* Solid Conductors ** Stranded Conductors

For ambient temperature other than 30 °C, multiply the ampacities shown in above table by the appropriate following correction factors:

Ambient Temp. ºC		THHN 105 ºC Dry	THWN 75 ºC Wet
From	To	Correction Factors	
21	25	1.04	1.05
26	30	1.00	1.00
31	35	0.96	0.94
36	40	0.91	0.88
41	45	0.87	0.82
46	50	0.82	0.75
51	55	0.76	0.67
56	60	0.71	0.58
61	70	0.58	0.33

Current Rating (Ampacity) For Single Core British Standard

At 30 °C Ambient temperature

Size	In Free Air	In Conduit (Pipes)
mm²	Ampere	Ampere
0.5	3	3
0.75	6	6
1.0	10	10
1.5	16.6	13.8
2.5	23	18
4.0	30	23
6.0	39	30
10.0	56	42
16.0	74	54
25	101	80
35	125	100
50	151	121
70	192	154

For ambient temperature other than 30 °C, multiply the ampacities shown in above table by the appropriate following correction factors:

For ambient temperature other than 30 °C, multiply the ampacities shown in above table by the appropriate following correction factors:

Ambient Temperature ºC		
From	To	Correction Factors
21	25	1.02
26	30	1.00
31	35	0.97
36	40	0.94
41	45	0.91
46	50	0.88
51	55	0.77
56	60	0.63

Conductor Construction As Per IEC 60228 / BS EN 60228

Class 1

Solid Plain Copper Conductors for Single Core & Multi Core Cables

Nominal Cross- section Area	No. of Strands	Nominal Wire Diameter	Maximum D.C. Resistance At 20 °C
mm²	-	mm	Ω/km
0.5	1	0.80	36
0.75	1	0.98	24.5
1	1	1.13	18.1
1.5	1	1.38	12.1
2.5	1	1.78	7.41
4	1	2.25	4.61
6	1	2.76	3.08
10	1	3.57	1.83

Class 2

Stranded Plain Copper Conductors for Single Core & Multi Core Cables

Nominal Cross- section Area	No. of Strands	Nominal Wire Diameter	Maximum D.C. Resistance At 20 °C
mm²	-	mm	Ω/km
0.5	7	0.30	36
0.75	7	0.37	24.5
1	7	0.43	18.1
1.5	7	0.52	12.1
2.5	7	0.67	7.41
4	7	0.85	4.61
6	7	1.04	3.08
10	7	1.34	1.83
16	7	1.68	1.15

Conductor Construction As Per IEC 60228 / BS EN 60228

Class 5

Flexible Plain Copper Conductors for Single Core & Multi Core Cables

Nominal Cross- section Area	Maximum diameter of wires in conductor	Maximum D.C. Resistance At 20 °C
mm²	-	Ω/km
0.5	0.21	39
0.75	0.21	26
1	0.21	19.5
1.5	0.26	13.3
2.5	0.26	7.98
4	0.31	4.95
6	0.31	3.3
10	0.41	1.91
16	0.41	1.21

Class 6

Extra Flexible Plain Copper Conductors for Single Core & Multi Core Cables

Nominal Cross- section Area	Maximum diameter of wires in conductor	Maximum D.C. Resistance At 20 °C
mm²	mm	Ω/km
0.5	0.16	39
0.75	0.16	26
1	0.16	19.5
1.5	0.16	13.3
2.5	0.16	7.98
4	0.16	4.95
6	0.21	3.3
10	0.21	1.91
16	0.21	1.21

Area (mm^2)= $\pi/4\ N*d2w$	where dw: Wire Diameter	N=number of wires in cross section

Note: To calculate number of wires (N) in cross-section area in above tables, Use the above formula.

Conversion Table

AWG	Diameter	Cross Section
No.	mm	mm²
0	8.25	53.4
1	7.35	42.4
2	6.54	33.6
3	5.83	26.7
4	5.19	21.2
5	4.62	16.8
6	4.11	13.3
7	3.67	10.6
8	3.26	8.35
9	2.91	6.64
10	2.59	5.27
11	2.3	4.15
12	2.05	3.31
13	1.83	2.63
14	1.63	2.08
15	1.45	1.65
16	1.29	1.31
17	1.15	1.04
18	1.024	0.823
19	0.912	0.653

Conversion Table

Multiply	By	To Obtain
Length- Imperial		
Miles	0.0254	mm
Inches	2.54	cm
Feet	30.48	cm
Yards	0.9144	meters
Miles	1.6093	Kilometers
Length -Metric		
Millimeters	39.37	
Centimeters	0.3937	
Meters	1.0936	
Kilometers	0.62137	
Area- Imperial		
Square mils	0.000507	Square mm
Circular mils	0.7854	Square mils
Square Inches	6.4516	Square cm
Square feet	0.0929	Square meters
Square yards	0.8361	Square meters
Area-Metric		
Square millimeter	0.00155	Square inches
Square centimeters	0.155	Square inches
Square meters	1.19599	Square yards
Volume- Imperial		
Cubic inches	16.38716	Cubic cm
Cubic feet	0.028317	Cubic meters
Volume-US		
Quarts (liquid)	0.9463	liters
Gallons	3.7854	liters
Volume -Metric		
Cubic cm	0.06102	Cubic inches
Cubic meters	35.3145	Cubic feet
Liters	1.05668	Quarts (liquid US)

Multiply	By	To Obtain
Weight-Imperial		
Ounces	28.3495	grams
Pounds (Av)	453.59	grams
Pounds (Av)	0.45335	kg
Tons (short)	907.19	kg
Tons (long)	1016.05	kg
Weight-Metric		
Grams	0.03527	Ounces
Grams	0.002205	Pounds (Av)
Kilograms	35.274	Ounces
Kilograms	2.2046	Pounds (Av)
Miscellaneous-Imperial		
Pounds per 100 feet	1.48816	kg/km
Pounds per sq. inch	0.07031	kg per sq. cm
Ohms per 1000 feet	3.28083	Ohms per kilometer
Decibels	0.1153	nepers
Decibels per mile	0.62137	Descibles per km
Miscellaneous-Metric		
Kg/Km	0.67197	Pounds per 100 feet
Kg per sq. cm	14.2234	Pounds per sq. inch
Ohms per kilometer	0.3048	Ohms per 1000 feet
Ohms per kilometer	1.6093	Ohms per mile
Descibles per km	1.6093	Decibels per mile
Temperature		
Cesius	9/5 (C) +32	Fahrenheit
Fahrenheit	5/9 (F) -32	Cesius

Metal Data

Metal	Density Kg/m³	Specific Heat J/Kg °C	Latent Heat or Fusion J/Kg	Melting Point °C
Aluminium	2,700	964	446,000	660
Brass	8,100	-	-	896
Bronze	8,800	-	-	871
Copper	8,890	428	168,000	1,083
Iron	7,100	535	95,400	1,527
Lead	11,340	-	24,600	327
Mamaganese	7,800	-	-	1,260
Mercurcy	13,600	138.3	-	-
Monel Metal	8,800	-	19,300	1,455
Nickel	8,900	-	19,300	1,455
Silver	10,500	235	92,000	-
Steel	7,800	-	-	1,499
Tin	7,400	230	55,800	232
Zinc	7,000	-	11,800	376

Voltage Drop

The tabulated voltage drop values are based on a load power factor of 85% lagging and given for a current of one meter run. For any given cable length, the values should be multiplied by the length (in meters) and by the current (in amperes) that the cables are to carry.

EXAMPLE:
150 meters of three core cable
PVC insulated (rated 85 ˚C)
PVC sheathed
installed in air
to carry 64 amperes load
supply voltage 380 volt
three phase system 60Hz

The formula applicable is the following:

$$Vap = \frac{Vp \times 1000}{I \times L}$$

Where

I = Current in amperes
L = Route length in meters
Vap = Approximate voltage drop/ampere/meter
Vp = Maximum permissible voltage drop (say 2.5% of 380 volts)

By Substituting current, route length and maximum permissible voltage drop.

$$Vap = \frac{9.5 \times 1000}{64 \times 150} = 0.99 \text{ mV}$$

To determine the suitable size of a conductor, select a cable from the tables on the next page such that the voltage drop value from this column is less than the calculated value of 0.99 mV.

Voltage Drop

The Voltage drop equations are as follow:

A - Single Phase circuit $Vd = 2 \angle (R \cos Ø + X \sin Ø) V$

B - Three Phase circuit $Vd = Sqrt (3) \angle (R \cos Ø + X \sin Ø) V$

WHERE

Vd : Voltage Drop (V)
I : Load Current (A)
l : Route length
R : AC resistance (Ω/km)
X : Reactance (Ω/km)
COSØ : Power factor for load√

WHERE

X $= \omega L 10^{-3}$

WHERE

ω $= 2 \pi f$
f = operating frequency Hz
L = inductance (m H/Km)
L = route length (Km)

RELATION BETWEEN COS Ø & SIN Ø AS FOLLOWS:

COSØ	1	0.9	0.8	0.71	0.6
SIN Ø	0	0.44	0.6	0.71	0.8

Voltage Drop for Stranded Single core

C.S.A MM2	VOLTAGE DROP PVC 70 °C mV/Amp/Meter	VOLTAGE DROP PVC 85 °C mV/Amp/Meter
1.5	20.25	21.24
2.5	12.46	13.06
4	7.8	8.17
6	5.25	5.5
10	3.17	3.32
16	2.04	2.13
25	1.33	1.39
35	0.99	1.04
50	0.75	0.79t

The above data is based on:
Power factor: 0.8
Rated frequency: 60 Hz
Three phase.

Glossary

A

AWG
Abbreviation for American Wire Guage. A standard used in the determination of the physical size of a conductor determined by its circular mil area.

Ampacity
The maximum current an insulated wire or cable can safely carry without exceeding limitations of insulation material.

AWM
Designation for Appliance Wiring Material.

ASTM
Abbreviation for American Society for Testing and Materials.

Ambient Temperature
The normal temperature within a given area.

B

Building Wire
Insulated wires used in building for lighting and power, 600 volts or less, usually not exposed to outdoor environment.

Bare Conductor
A conductor with no coating or cladding on the copper.

Bedding
A layer of material applied to a cable immediately below the armouring.

Buried Cable
A cable installed directly in the ground without use of underground conduit. Also called «direct burial cable».

C

Cable
Multicore stranded insulated wires under protective sheath to conduct electrical energy.

Conductor
A material capable of easily transferring electrical charge.

Current Rating
The maximum continuous electrical flow of current

D

D.C.
Abbreviation for direct current

Decibel (dB)
A unit to express differences of power level, power gain in amplifiers or power loss in passive circuits or cables.

Dielectric Constant (K)
The ratio of the capacitance of a capacitor (or consoles) with dielectric between the electrodes to the capacitance when air is between the electrode.

Dielectric Strength
The voltage which as insulation can withstand before breakdown occurs. Usually expressed as a voltage gradient.

Duct
An underground or overhead tube or conduit for carrying electrical cables.

E

Eccentricity
A measure of the center of a conductor›s location with respect to the circular cross-section of the insulation expressed as a percentage of center displacement of one circle with the other.

Elongation
The fractional increase in length of a material stressed in tension.

Embossing
A means of identification or lettering using heat and pressure to leave raised lettering on the sheath material of the cable.

EMF
Abbreviation for Electro Motive Force-force determinating flow of electricity(Voltage)

Glossary

F

Farad
A measuring unit of electrical capacity.

Film
A thin plastic sheet.

Flame Resistance
Ability of the material to extinguish flame once the source of heat removed.

Flat Cable
A cable with two essentially flat surfaces.

Foils
A thin supporting film of continuous sheet such as plastic foil, metal foil, laminated foil etc. for static shielding, contracts and other electrical application.

G

Gauge
A term used to denote physical size of a wire

Ground Conductor
An electrical conductor for the connection to the earth. Making a complete electrical circuit.

H

Heat Resistance
Ability of a substance to maintain physical,chemical and electrical integrity under specified temperature conditions.

Henry
A measuring unit of inductance such that the induced voltage in numerically equal to the rate of change of current in amperes per second.

Hertz (Hz)
A measuring unit of the frequency equal to one cycle per second.

I

ICEA
Abbreviation for Insulated Cable Engineers Association

IEC
Abbreviation for International Electrotechnical Commission.

IEEE
Abbreviation for Institute of Electrical and Electronics Engineers.

Impedance
Resistance to flow of an alternating current at particular frequency, It is a combination of resistance and reactance x, measured in ohms.

Insulation
A non conducting substance, named as dielectric, surrounding the conductor.

J

Jacket
An overall covering of a cable, called also sheath which protects against the environment.

Jumper
A short length of conductor used to make a temporary connection between terminals, around break in a circuit, or around an instrument.

K

KV
Abbreviation for kilovolt= 1000 volts.

KW
Abbreviation for kilowatt=1000 watts

L

Laser
Light Amplification by Stimulated Emission of radiation. An electro-optic device that produces coherent light with a narrow range of wavelengths, typically centered 780 mm, 1310 mm, or 1550 mm.

LAN
Local Area Network- A network located in a localised area e.g. in an office, building, complex building whose communication technology provides a high-bandwidth, low-cost medium to which many nodes can be connected.

LED
Light Emitting Diode

Leakage Current
The undesirable flow of current through or over the surface of an insulation.

Loop Resistance
The total resistance of two conductors measured round trip from one end.

Glossary

M

MCM
Cross-section of greater AWG-sizes.
(1 MCM=1000 circular mils=0.5067 mm2

Megaohm
One million ohms.

Mho
The unit of conductivity. The reciprocal of an ohm

MHz
Megahertz (one million cycles per second).

Micro phonics
Noise in a system caused by mechanical vibration of component within the system.

Mylar
Dupont trademark for polyethylene terephalate (polyster) film used in the front of a tape.

N

National Electric Code (NEC)
A set of regulation governing construction and installation of electrical wiring and apparatus.

NEMA
National Electrical Manufacturers Association.

Nylon
A group of polyamide polymers, used for wire and cable jacketing with good chemical and abrasion resistance.

O

Ohm
Unit of resistance such that a constant current of one ampere produces a force of one volt.

Overlap
A certain portion of a foil or band which laps over the leading edge of a helica or longitudinally wrapping tape.

Over Current
The current which causes and excessive temperature rise in a conductor.

Overload Capacity
The maximum level of current, voltage, or power which a device can withstand before it is damaged.

Oxygen Index
Percentage of Oxygen necessary to support combustion of specified material.

P

Pair
Two insulated wires of a single circuit laying up together

Polyester
Polyethylene terephthalate which is used extensively in the production of a high strength moisture resistant film used as a cable core wrapping material .

Polyvinylchloride (PVC)
A thermoplastic material composed of polymers of vinylchloride which may be rigid or elastomeric depending on specific formulation.

Propagation
Delay time required for an electrical wave to travel between two points on a transmission line.

Q

Quad
A four-wire unit of insulated conductors.

R

Rated Temperature
The maximum temperature at which an electric component can operate for extended period without loss of its operating properties.

Rated Voltage
The maximum voltage at which an electric component can operate for extended periods without degradation of performance or safety hazard.

Reactance
The opposition offered to the flow of alternating current by the inductance or capacitance of the component or circuit.

Resistance
In D.C. circuits, the opposition material offers to current, measured in ohms. In A.C. circuits, resistance is the real component of impedance, and may be higher than the value measured at D.C

Glossary

S

Sheath
The material, usually an extruded plastic or elastomer, applied outermost to a wire or cable, very often referred to as jacket.

Solid Conductor
A conductor consisting of a single wire.

Stranded Conductor
A conductor composed of individual groups of wires twisted together to form an entire unit.

T

Tensile Strength
A term denoting the greatest longitudinal tensile stress a substance can bear without mechanical failure.

Tinned Copper
Tin coating over copper to aid in soldering and inhibit corrosion

Twin Cable
A cable composed of two separate insulated stranded conductor laid parallel under a common covering.

THHN
Thermoplastic insulated , High heat resistant 90˚C dry locations, Nylon jacketed cable.

THWN
Thermoplastic insulated, Heat and moisture resistant 75˚C Wet locations, Nylon jacketed cable.

U

UL
Abbreviation for Underwriters Laboratories, Inc.

V

VDE
West germany approval agency.

Volt
A unit of electromotive force.

Voltage Drop
The amount of voltage loss from original input to point of electrical device.

VW-1
A flammability rating established by Underwriters laboratories for wires and cables that pass a specially designed vertical flame test.

W

Wall Thickness
The thickness of the applied insulation or jacket.

Wire Gauge
A system of numerical designation of wire of wire sizes

X

XLPE
Cross-linked polyethylene.

Wires & Cables Code Key

1	2	3&4	5	6	7	8&9	10	11	12	13	14&15	16	17	18
0	0	00	0	0	0	00	0	0	0	0	00	0	0	0
C	2	08	H	B	1	01	0	0	0	B	00	0	S	1

EXAMPLE C208HB101000B000S1
DESCRIPTION 1.5MM2 Stranded CU/PVC 85 C BLACK SPOOL 100 YARD

1	C	Copper
	A	Aluminium
	S	Steel
2	1	Solid
	2	Stranded
	5	Extra Flexible
	6	Flexible
3&4	05	0.5mm2
	06	0.75mm2
	07	1mm2
	08	1.5mm2
	09	2mm2
	10	2.5mm2
	11	3mm2
	12	4mm2
	13	6mm2
	14	10mm2
	15	16mm2
	16	25mm2
	17	35mm2
	18	50mm2
	19	70mm2
	20	20AWG
	21	19AWG
	22	18AWG
	23	16AWG
	24	14AWG
	25	12AWG
	26	10AWG
	27	8 AWG
	28	6 AWG
	29	4 AWG
	30	12AWG
5	A	PVC105C Ins.
	P	PVC70C Ins.
	H	PVC85C Ins.
	F	PVC70C Flexible Ins.
	U	PVC120C Ins.
	M	PVC90C Ins.
6	A	600/1000V
	B	450/750V
	C	300/500V
	D	600 V
	E	300/300V
	N	NONE

7	1	Cores
	2	Pairs
	3	Triples
	4	Quads
	FB	Flat
	15	Bell Wire
8&9	01	Single unit
	02	Two unit
	03	Three unit
	04	Four unit
	so on	so onT
10	0	Without Shield
	O	Overall Shield PET/ AL/PET
	I	Individual Shield PET/ AL/PET
	T	Individual & Overall Shield PET/AL/PET
	B	Overall Shield Braid
	R	Individual & Overall Shield Braid
	N	Copper Tape
	C	Copper Wire
11	W	Glavanized Steel Wire Armoured
	G	Glavanized Steel Tape Armoured
	O	Without Armoured
12	N	Nylon Sheath
	A	PVC 105C Sheath
	P	PVC 70C Sheath
	H	PVC 85C Sheath
	F	PVC 70C Flexible Sheath
	M	PVC 90C Sheath
	C	PVC 80C Sheath
	O	Without Sheath
13	B	Black
	L	Blue
	Y	Yellow
	R	Red
	W	White
	E	Gray
	G	Green
	O	Orange
	M	G/Y(Y/G)
	N	Brown
	T	Natural
	0	Without Color

14&15	00	Bare Coper&Single Wire
	01	2C-RED-BLACK
	02	2C-BLUE-BLACK
	03	2C-BLUE-BROWN
	04	3C-RED-YELLOW-BLUE
	05	3C-BLUE-BROWN-BLACK
	06	3C-G/Y-BLUE-BROWN
	07	3C-BLUE-BLACK-RED
	08	4C-RED-YELLOW-BLUE-BLACK
	09	4C-BLUE-BROWN-BLACK-BLACK
	10	4C-G/Y-BLACK-BLUE-BROWN
	11	4C-BLUE-BROWN-BLACK-GRAY
	12	5C-RED-YELLOW-BLUE-BLACK-G/Y
	13	5C-G/Y-BLACK-BLUE-BROWN-BLACK
	14	5C-G/Y-BLACK-BLUE-BROWN-GRAY
	15	5C-RED-YELLOW-BLUE-BLACK-GREEN
	16	6C-RED-YELLOW-BLUE-BLACK-BROWN-G/Y
	17	6C-RED-YELLOW-BLUE-BLACK-WHITE-BROWN-G/Y
	18	7C-RED-YELLOW-BLUE-BLACK-GREEN-BROWN-WHITE
	19	7C-RED-YELLOW-BLUE-BLACK-WHTE-BROWN-G/Y
	20	7C-G/Y-BLACK-BLUE-BROWN-BLACK-GRAY-WHITE
	21	Cores-Black No
	22	Cores-White No
	23	Cores-Black No+GY
	24	Cores-White No+GY
	25	1P-BLACK/WHITE
	26	1P-BLACK/BLUE
	27	PAIRS-(BLACK/WHITE)+NO
	28	PAIRS-(BLACK-BLUE)+NO
	29	1T-BLACK/WHITE/RED
	30	1T-BLACK/BLUE/BROWN
	31	TRIPLES-(BLACK/WHITE-RED)+NO
	32	TRIPLES-(BLACK/BROWN/BLUE)+NO
	33	1Q-BLACK/WHITE/RED/BLUE
	34	1Q-BLACK/BLUE/BROWN/GREEN
	35	QUADS-(BLACK/WHITE/RED/BLUE)+NO
	36	QUADS-(BLACK/BLUE/BROWN/GREEN)+NO
	37	10C-RED-YELLOW-BLUE-BLACK-GREEN-BROWN-WHITE-GRAY-ORANGE-Y/G
	50	1C-NATURAL
	51	1C-RED
	52	1C-BLUE

16	0	All Standard
	c	Customer Request
	I	IEC
	B	BS
	U	UL
	F	Filling
	E	Earth Conductor
17	00	Spool without carton
	01	Carton with Spool
	02	Non Spool-Non Carton
	03	Wooden Drum
	04	Carton without Spool
18	1	100 Yard
	8	80 Yard
	9	90 Yard
	4	40 Yard
	6	50 Yard
	2	250 FEET
	3	300 FEET
	5	500 FEET
	7	1000 FEET
	E	50 Meter
	I	150 Meter
	J	200 Meter
	H	100 Meter
	F	500 Meter
	T	300 Meter
	R	Meter
	P	125 FEET

Telephone Cables Code Key

1&2&3	4&5	6	7&8	9	10	11	12	13
000	00	0	00	0	0	0	0	0
TEL	04	P	50	P	U	E	N	1

EXAMPLE TEL04P50PUEN1
DESCRIPTION TELEPHONE 4PX0.5MM COPPER UNSHIELDED GRAY-AIR COIL 100 YARD

1&2&3	TEL	Telephone
4&5	01	One
	02	Two
	03	Three
	so on	so on
6	P	Pair
	Q	Quad
7&8	40	0.4mm
	50	0.5mm
	60	0.6mm
	80	0.8mm
9	P	Copper
	T	Tinned Copper
10	U	Without Shield
	O	Overall Shield PET/AL/PET
	B	Overall Shield Braid

11	B	Black
	L	Blue
	Y	Yellow
	R	Red
	W	White
	E	Gray
	G	Green
	O	Orange
	M	G/Y(Y/G)
	N	Brown
	T	Natural
	0	Without Color
12	S	Spool without carton
	C	Carton with Spool
	N	Non Spool-Non Carton
	M	Wooden Drum
	R	Carton without Spool
13	1	100 Yard
	8	80 Yard

9	90 Yard
4	40 Yard
6	50 Yard
2	250 Feet
3	300 Feet
5	500 Feet
7	1000 Feet
H	100 Meter
F	500 Meter
T	300 Meter
R	Meter

Coaxial Cables Code Key

1&2	3&4	5	6	7	8	9
00	00	0	0	0	0	0
RG	06	Z	F	B	S	7

EXAMPLE RG06ZFBS7
DESCRIPTION RG6 COAXIAL CABLE - BLACK 1000 FEET ON SPOOL

1&2	RG	COAXIAL-MIL17
		COAXIAL-IEC96
3&4	06	TYPE06
	11	TYPE11
	59	TYPE59
	58	TYPE58
	07	TYPE07-IEC
5	C	Copper
	B	Tinned Copper
	Z	Copper Clad steel
	M	Copper Clad Aluminium
6	F	Foam Polyethylene
	S	Solid Polyethylene
	T	Teflon

7	B	Black
	L	Blue
	Y	Yellow
	R	Red
	W	White
	E	Gray
	G	Green
	O	Orange
	M	G/Y(Y/G)
	N	Brown
	T	Natural
	0	Without Color
8	S	Spool without carton
	C	Carton with Spool
	N	Non Spool-Non Carton
	M	Wooden Drum
	R	Carton without Spool

9	1	100 Yard
	8	80 Yard
	9	90 Yard
	4	40 Yard
	6	50 Yard
	2	250 Feet
	3	300 Feet
	5	500 Feet
	7	1000 Feet
	H	100 Meter
	F	500 Meter
	T	300 Meter
	R	Meter

LAN Cables Code Key

1&2&3	4	5	6	7	8	9	10
000	0	0	0	0	0	0	0
CAT	5	E	4	U	E	C	7

EXAMPLE CAT5e4UEC7
DESCRIPTION LAN CABLE CAT5e- 4P UNSHIELDED GRAY-CARTON WITH SPOOL 1000 FEET

1&2&3	TEL	CATEGORY
4	5	Type5
	6	Type6
	7	Type7
	so on	so on
5	e	enhancement
	+	Plus
	-	Blank
6	4	4PAIR
	2	2PAIR
	8	8PAIR
7	U	Without Shield
	F	Overall Shield PET/AL/PET
	S	Overall Shield Braid

8	B	Black
	L	Blue
	Y	Yellow
	R	Red
	W	White
	E	Gray
	G	Green
	O	Orange
	M	G/Y(Y/G)
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Product Certifications by National and International Standards Organizations

Product Range

alfanar manufactures a wide range of low, medium and high voltage electrical products under 50 categories.
Listed below is **alfanars**'s comprehensive product classification:

POWER & CONTROL

Low Voltage Products
- Load Center
- Circuit Breaker Enclosures
- Busbar Chamber
- Breakers

Low Voltage Systems
- Switch Boards – MF Type
- Distribution Boards – MB Type
- Motor Control Centres
- Capacitor Banks – Power Factor Correction Panels
- Automatic Transfer Switch (ATS Panels)
- Distribution Boards for Substations
- Synchronizing Panels
- Control & Automation Panels

Package & Unit Substations
- Indoor Package Substation
- Outdoor Package Substation
- Indoor Unit Substation
- Outdoor Unit Substation

Medium Voltage Systems
- Switchgear (Metal clad, Metal enclosed)
- Control gear
- Ring Main Unit (RMU)
- Retrofit solution

METAL ENCLOSURES

- **Metal Enclosures IP65**
- **Modular Enclosures**
- **Extendable Cubicles**
- **Telephone Box**

METAL ACCESSORIES

- **Switch Boxes**
- **Junction Boxes**

CABLES & WIRES

Building Wires
- American Standards (UL) Wires
- British Standards (BS) Wires
- International Electro-technical Commission Standards (IEC) Wires
- Low Smoke, Halogen Free Wires

Signal, Communication & Data Cables
- Telephone Cables
- Coaxial Cables (RG٦ / U)
- Local Area Network Cables (LAN)

Power Cables
- Low Voltage Power & Control Cables
- Medium Voltage Power Cables
- High Voltage Power Cables
- Fire Survival Cables
- Cables for Special Applications

Overhead Conductors
- Bare Stranded Soft Drawn Copper Conductors (SDC)
- Bare Stranded Hard Drawn Copper Conductors (HDC)
- All Aluminum Conductors (AAC)
- All Aluminum Alloy Conductors (AAAC)
- Aluminum Conductors, Steel Reinforced (ACSR)
- Aluminum Conductors, Aluminum-Clad Steel Reinforced (ACSR / AW)
- Aluminum Conductors, Aluminum-Alloy Reinforced (ACAR)
- Weather Resistant XLPE Insulated Service Drop Cables

LIGHTING

- **Halogen**
- **Fluorescent**
- **Energy Saving**

WIRING ACCESSORIES (SWITCH & SOCKET)

- **Farah**
- **Omnia**
- **alf**
- **Mira**
- **Sidra**

COMMUNICATION SYSTEMS

- **Audio Intercom**

Notes

Notes

Contact Us

alfanar Cables is the marketing arm of **alfanar electric**. It markets and sells **alfanar Cables and Wires**. The products of alfanar have established their name in the market as the ones with a difference.

Coming in a wide range, suiting a customer's preference, the products are simply the best in the market with distinct features like quality, safety and durability.

The products have deeply penetrated in to almost all the regional markets with the support of our widespread distribution network.

alfanar Cables
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