

SINGLE CORE WIRES

A

THHN/THWN BUILDING 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 lengths of 500, 300 and 250 feet on coil.

Other lengths available on request

Technical Data:

Conductor			Maximum DC Conductor Resistance at 20 °C	Nominal Insulation Thickness	Normal Jacket Thickness	Approx. Overall Diameter	Approx. Net Weight	AES Code
Nominal Cross Section	No. x Dia	No. x mm						
AWG	mm ²	No. x mm	ohms/km	mm	mm	mm	kg / km	-
14	2.08	1 x 1.63	8.45	0.38	0.10	2.7	24	C124AD10100NXX ^a 00UXX ^b
12	3.31	1 x 2.05	5.31	0.38	0.10	3.1	36	C125AD10100NXX ^a 00UXX ^b
10	5.26	1 x 2.59	3.343	0.51	0.10	3.9	58	C126AD10100NXX ^a 00UXX ^b
18*	0.82	19 x 0.235	21.9	0.38	0.10	2.16	11.5	C222AD10100NXX ^a 00UXX ^b
16*	1.31	19 x 0.296	13.7	0.38	0.10	2.5	17	C223AD10100NXX ^a 00UXX ^b
14	2.08	19 x 0.37	8.62	0.38	0.10	2.9	24	C224AD10100NXX ^a 00UXX ^b
12	3.31	19 x 0.47	5.43	0.38	0.10	3.4	37	C225AD10100NXX ^a 00UXX ^b
10	5.26	19 x 0.59	3.409	0.51	0.10	4.2	59	C226AD10100NXX ^a 00UXX ^b
8	8.37	19 x 0.75	2.144	0.76	0.13	5.5	97	C227AD10100NXX ^a 00UXX ^b
6	13.3	19 x 0.944	1.348	0.76	0.13	6.38	195	C228AD10100NXX ^a 00UXX ^b

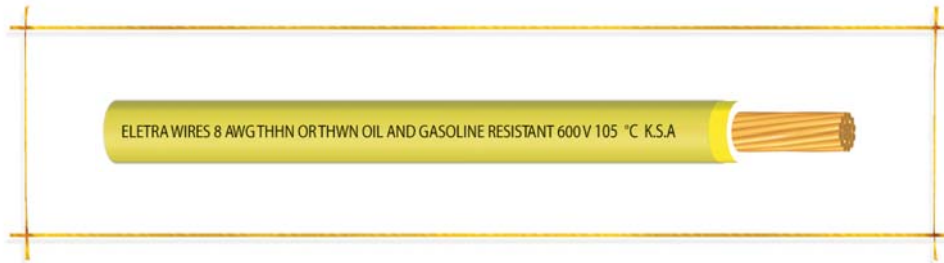
*Listed as TFFN

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES Code Key - page 42- 45)

XX^b : Packing type (see AES Code Key - page 42- 45)

Plain Copper Conductor, Thermoplastic Insulation & Nylon Jacket CU/PVC/NYLON**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

Marking:

Wires are marked as:

ELETRA WIRES, # AWG THHN OR THWN, OIL AND GASOLINE RESISTANT, 600 V 105 °C K.S.A.

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

Plain Copper Conductor, PVC Insulation CU/PVC



Technical Specifications:

▪ **Application**

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 6360 & IEC 60228

▪ **Insulation**

PVC insulation type T11 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 Conductor Resistance at 20 °C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	AES Code
Size	Cons.					
mm ²	No. x mm	ohms/km	mm	mm	kg / km	-
0.5	1 x 0.80	36.0	0.6	2.0	8.47	C105PC101000XX ^a 000XX ^b
0.75	1 x 0.98	24.5	0.6	2.2	11.23	C106PC101000XX ^a 000XX ^b
1.0	1 x 1.13	18.1	0.6	2.3	13.9	C107PC101000XX ^a 000XX ^b

Other sizes can be provided on specific request

The above data are approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES Code Key - page 42-45)

XX^b : Packing type (see AES Code Key - page 42-45)

Single Core Solid Conductor

450 / 750 V

Plain Copper Conductor, PVC Insulation CU/PVC



Technical Specifications:

Application

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
Class 1 of BS 6360 & IEC 60228

Insulation

PVC insulation type T11 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 Conductor Resistance at 20 °C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	AES 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	C108PB101000XX ^a 000XX ^b
2.5	1 x 1.78	7.41	0.8	3.4	32.4	C110PB101000XX ^a 000XX ^b
4	1 x 2.25	4.61	0.8	3.9	47.13	C112PB101000XX ^a 000XX ^b
6	1 x 2.76	3.08	0.8	4.4	67	C113PB101000XX ^a 000XX ^b
10	1 x 3.57	1.83	1.0	5.6	111.22	C114PB101000XX ^a 000XX ^b

Other sizes can be provided on specific request.

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES Code Key - page 42- 45)

XX^b : Packing type (see AES Code Key - page 42- 45)

Single Core Stranded Conductor

450 / 750 V

Plain Copper Conductor, PVC Insulation CU/PVC



Technical Specifications:

Application

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 stranded copper Class 2 of BS 6360 & IEC 60228

Insulation

PVC insulation type T11 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 Conductor Resistance at 20 °C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	AES 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	C208PB101000XX ^a 000XX ^b
2.5	7 x 0.67	7.41	0.8	3.6	33.71	C210PB101000XX ^a 000XX ^b
4	7 x 0.85	4.61	0.8	4.2	49.92	C212PB101000XX ^a 000XX ^b
6	7 x 1.04	3.08	0.8	4.8	70.27	C213PB101000XX ^a 000XX ^b
10	7 x 1.34	1.83	1.0	6.0	116.63	C214PB101000XX ^a 000XX ^b
16	7 x 1.68	1.15	1.0	7.1	174.85	C215PB101000XX ^a 000XX ^b
25	7 x 2.14	0.727	1.2	8.9	271.93	C216PB101000XX ^a 000XX ^b
35	7 x 2.52	0.524	1.2	10.0	370.1	C217PB101000XX ^a 000XX ^b
50	19 x 1.78	0.387	1.4	11.8	505.7	C218PB101000XX ^a 000XX ^b

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES Code Key - page 42-45)

XX^b : Packing type (see AES Code Key - page 42-45)

Single Core Flexible Conductor

450 / 750 V

Plain Copper Conductor, PVC Insulation CU/PVC



Technical Specifications:

- Application**
 Used for indoor fixed installation in dry locations for lighting fittings inside electrical panel, connections for apparatus, switch gears and control gears
- Insulation**
 PVC insulation type T11 temperature rating 70 °C as per BS 7655 (PVC rated 85 °C or 105 °C available on request)
- Standard**
 Wires are made as per BS 6004 & IEC 60227-3
- Packing**
 Available in standard length of 100 yards on coil. Other lengths available on request
- Rated Voltage**
 Working voltage up to 450/750 V
- Conductor**
 Annealed flexible copper Class 5 of BS 6360 & IEC 60228. Copper fine wires bunched together to get circular conductor

Technical Data:

Conductor		Maximum Conductor Resistance at 20 °C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	AES - 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	C508PB101000XX ^a 000XX ^b
2.5	50 x 0.25	7.98	0.8	3.7	34.0	C510PB101000XX ^a 000XX ^b
4	56 x 0.30	4.95	0.8	4.2	49.92	C512PB101000XX ^a 000XX ^b
6	84 x 0.30	3.3	0.8	4.8	70.83	C513PB101000XX ^a 000XX ^b
10	80 x 0.40	1.91	1.0	6.2	117.86	C514PB101000XX ^a 000XX ^b
16	126 x 0.40	1.21	1.0	7.34	176.24	C515PB101000XX ^a 000XX ^b
25	196 x 0.40	0.780	1.2	9.1	272.8	C516PB101000XX ^a 000XX ^b
35	273 x 0.40	0.554	1.2	10.3	371.93	C517PB101000XX ^a 000XX ^b
50	399 x 0.40	0.386	1.4	12.31	533.29	C518PB101000XX ^a 000XX ^b
70	551 x 0.40	0.272	1.4	14	718.5	C519PB101000XX ^a 000XX ^b

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES-Code Key - page 42- 45)

XX : Packing type (see AES Code Key - page 42- 45)

Plain Copper Conductor, PVC Insulated



Technical Specifications:

▪ Applications

Used for indoor fixed installation in dry locations for lighting fittings, inside electrical panel, connections for apparatus, switch gear and control gears

▪ Standard

As per BS 6231

▪ Rated Voltage

Working voltage up to 600/1000 V

▪ Conductor

Annealed flexible copper wires Class 5 of BS 6360
Copper fine wires bunched together to circular conductor

▪ Insulation

Type BK: Type T11 temperature rating 70 °C as per BS 7655

Type CK: Type T13 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

Plain Copper Conductor, PVC Insulated

Technical Data

Conductor		Max. DC Conductor Resistance at 20 °C	Nominal Insulation Thickness	Approx. Overall Diameter	Approx. Net Weight	AES Code
Size	Cons.					
mm ²	No. x mm	ohms/km	mm	mm	kg / km	-
0.5	16 x 0.2	39	0.8	2.6	11.5	C505AA101000XX ^a 00BXX ^b
0.75	24 x 0.2	26	0.8	2.8	14.6	C506AA101000XX ^a 00BXX ^b
1	32 x 0.2	19.5	0.8	2.92	17.6	C507AA101000XX ^a 00BXX ^b
1.5	30X0.25	13.3	0.8	3.2	22.9	C508AA101000XX ^a 00BXX ^b
2.5	50X0.25	7.98	0.8	3.7	33.6	C510AA101000XX ^a 00BXX ^b
4	56X0.3	4.95	0.8	4.2	49.5	C512AA101000XX ^a 00BXX ^b
6	84X0.3	3.3	0.8	4.8	69.8	C513AA101000XX ^a 00BXX ^b
10	80X0.4	1.91	1	6.2	117.1	C514AA101000XX ^a 00BXX ^b
16	126X0.4	1.21	1	7.34	175.3	C515AA101000XX ^a 00BXX ^b
25	196X0.4	0.78	1.2	9.1	270.3	C516AA101000XX ^a 00BXX ^b
35	273X0.4	0.554	1.2	10.3	365.3	C517AA101000XX ^a 00BXX ^b
50	399X0.4	0.386	1.4	12.31	530.7	C518AA101000XX ^a 00BXX ^b
70	551X0.4	0.272	1.4	14	716.2	C519AA101000XX ^a 00BXX ^b

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Insulation color (see AES - code Key - page 42-45)

XX^b : Packing type (see AES - code Key - page 42-45)

Single Core Solid/Stranded Conductor

300 / 500 V

Plain Copper Conductor, PVC Insulated and PVC Sheathed CU/PVC/PVC



Technical Specifications:

Application

Used for indoor and outdoor fixed installations in damp and wet locations to distribute power in urban networks and industrial plants

Standard

As per BS 6004 & IEC 60227-4

Rated Voltage

Working voltage up to 300/500 V

Conductor

Annealed copper
Solid Class 1 of BS 6360
Stranded Class 2 of BS 6360

Insulation

PVC insulation type T11 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 length of 100 yards on coil.
Other lengths available on request

Technical Data

Conductor		Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Net Weight	AES - Code
Size	Cons.					
mm ²	No. x mm	mm	mm	mm	kg / km	-
1.5	1 x 1.38	0.7	0.8	4.4	36	C108PC10100PXX ^a 500XX ^b
2.5	1 x 1.78	0.8	0.8	5.0	51	C110PC10100PXX ^a 500XX ^b
4	1 x 2.25	0.8	0.9	5.7	75	C112PC10100PXX ^a 500XX ^b
6	1 x 2.76	0.8	0.9	6.2	98	C113PC10100PXX ^a 500XX ^b
10	1 x 3.57	1	0.9	7.4	150	C114PC10100PXX ^a 500XX ^b
1.5	7 x 0.52	0.7	0.8	4.6	35	C208PC10100PXX ^a 500XX ^b
2.5	7 x 0.67	0.8	0.8	5.2	50	C210PC10100PXX ^a 500XX ^b
4	7 x 0.85	0.8	0.9	6.0	74	C212PC10100PXX ^a 500XX ^b
6	7 x 1.04	0.8	0.9	6.6	97	C213PC10100PXX ^a 500XX ^b
10	7 x 1.34	1	0.9	7.8	149	C214PC10100PXX ^a 500XX ^b
16	7 x 1.68	1	1.0	9.1	220	C215PC10100PXX ^a 500XX ^b

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Is sheath color (see AES Code Key - page 42- 45)

XX : Packing type (see AES Code Key - page 42- 45)

Plain Copper Conductor, PVC Insulated and PVC Sheathed CU/PVC/PVC



Technical Specifications:

▪ **Application**

Used for outdoor and indoor fixed installation in damp and wet locations to distribute power in urban networks and industrial plants

▪ **Standard**

As per IEC 60502 -1

▪ **Rated Voltage**

Working voltage up to 600/1000 V

▪ **Conductor**

Annealed copper
 Solid Class 1 of IEC 60228
 Stranded Class 2 of IEC 60228

▪ **Insulation**

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

▪ **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 on coil.
 Other lengths available on request

Technical Data:

Conductor		Nominal Insulation Thickness	Nominal Sheath Thickness	Approx. Overall Diameter	Approx. Net Weight	AES Code
Size	Cons.					
mm ²	No. x mm	mm	mm	mm	kg / km	-
1.5	1 x 1.38	0.8	1.4	5.8	51	C108PA10100CXX ^a 50IXX ^b
2.5	1 x 1.78	0.8	1.4	6.2	65	C110PA10100CXX ^a 50IXX ^b
4	1 x 2.25	1	1.4	7.1	90	C112PA10100CXX ^a 50IXX ^b
6	1 x 2.76	1	1.4	7.6	114	C113PA10100CXX ^a 50IXX ^b
10	1 x 3.57	1	1.4	8.4	160	C114PA10100CXX ^a 50IXX ^b
1.5	7 x 0.52	0.8	1.4	6.1	54	C208PA10100CXX ^a 50IXX ^b
2.5	7 x 0.67	0.8	1.4	6.5	68	C210PA10100CXX ^a 50IXX ^b
4	7 x 0.85	1	1.4	6.7	94	C212PA10100CXX ^a 50IXX ^b
6	7 x 1.04	1	1.4	8.1	120	C213PA10100CXX ^a 50IXX ^b
10	7 x 1.34	1	1.4	9.0	165	C214PA10100CXX ^a 50IXX ^b
16	7 x 1.68	1	1.4	10.0	232	C215PA10100CXX ^a 50IXX ^b

Other sizes can be provided on specific request

The above data is approximate and subject to normal manufacturing tolerance

XX^a : Is sheath color (see AES Code Key - page 42- 45)

XX^b : Packing type (see AES Code Key - page 42- 45)