

THW-90 +PLUS AWG 450/750 V; Grounding conductor

THW-90 +PLUS 450/750 V 12 AWG, C400

Contact
Local Sales
ventas.peru@nexans.com

Nexans Ref.: P00036023-0

Application generally in fixed installation, wet and heat resistant.

DESCRIPTION

Application:

Special application in those poorly ventilated residential environments in which a fire increases the possibility of survival of possible victims by having a good visibility for rescue and escape from the place due to: low emission of dense smoke, low emission of toxic gases and does not spread the fire. They are generally installed in pipes for fixed installations, in buildings, inside places with dry or humid environment and in general in all installations that require higher current capacity than the TW-80 +PLUS cable. Not recommended for outdoor installations.

Construction:

1. Conductor: Soft copper, class B.
2. Insulation: Compound polyvinyl chloride PVC Low Smoke.

Main characteristics:

Good dielectric strength, resistance to moisture, grease and heat up to serving temperature. The insulation has the following characteristics when the cable is exposed to fire:

Low dense emission smoke: Delayed dense smoke emission and thus improved vision capability up to 3 times compared to standard THW-90 cable.

Low halogen. 28% less halogen gas generation than standard THW-90 cable.

Fire retardant according IEC 60332-3-25 CAT. D.

Gauge:

From 14 AWG up to 10 AWG.

Marking:

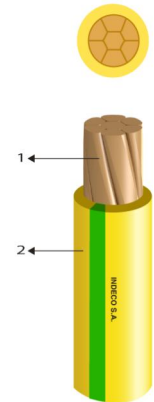
INDECO S.A. THW-90 +PLUS - Gauge - 450/750 V - LOW SMOKE - DOES NOT PROPAGATE THE FIRE CAT. D - MADE IN PERU.

Packing:

In 100-meter standard coils or non returnable wooden reels.

Colour:

Yellow/green.



STANDARDS

International

IEC 60332-3-25 Cat.D;
IEC 60754-1; IEC 61034-2

National NTP 370.250;

NTP 370.252; UL 2556; UL 83



Rated Voltage Uo/U
(Um)
450 / 750 V



Cable flexibility
Class B



Slightly halogenous
IEC 60754-1



Smoke density
Low IEC 61034-2



Flame retardant
UL VW1



Oil resistance
Oil resistance II



Fire retardant
IEC 60332-3-25
Cat. D



Maximum operating
temperature
90 °C

All drawings, designs, specifications, plans and particulars of weights, size and dimensions contained in the technical or commercial documentation of Nexans is indicative only and shall not be binding on Nexans or be treated as constituting a representation on the part of Nexans.

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National standards

NTP 370.250: Conductors of insulated cables.

NTP 370.252: Thermoplastic and thermoset insulated cables of rated voltages up to and including 450/750 V.

International standards

UL 83: Thermoplastic-Insulated Wires and Cables

IEC 61034-2: Measurement of smoke density of cables burning under defined conditions.

UL 2556: Wire and Cable Test Methods. **Section 9.3:** FT1 (Vertical-Specimen) Flame Test.

UL 2556: Wire and Cable Test Methods. **Section 9.4:** VW1 (Vertical-Specimen) Flame Test.

IEC 60332-3-25: Test for vertical flame spread of vertically-mounted bunched wires or cables - Category D.

IEC 60754-1: Test on gases evolved during combustion of materials from cables - Part 1: Determination of the halogen acid gas content.

CHARACTERISTICS

Construction characteristics

Conductor material	Soft copper
Insulating material	PVC Low Smoke
Colour	Yellow / green

Dimensional characteristics

Conductor cross-section (AWG/KCMIL)	12
Total number of wires	7
Conductor diameter	2.2 mm
Minimum insulation thickness	0.76 mm
Nominal outer diameter	3.79 mm
Approximate weight	38.4 kg/km

Electrical characteristics

Rated Voltage U _o /U (Um)	450 / 750 V
Dielectric strength	2.0 kV
Time of application Dielectric strength core to screen AC	1 min.



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Electrical characteristics

Max. DC resistance of the conductor at 20°C	5.65 Ohm/km
Nominal capacitance	813.0 pF/m
Perm current rating in air 30°C	40 A
Perm current rating in duct 30°C	30 A

Mechanical characteristics

Cable flexibility	Class B
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Usage characteristics

Slightly halogenous	IEC 60754-1
Smoke density	Low IEC 61034-2
Flame retardant	UL VW1
Oil resistance	Oil resistance II
Fire retardant	IEC 60332-3-25 Cat. D
Maximum operating temperature	90 °C
Overload maximum core temperature	130 °C
Short-circuit max. conductor temperature	250 °C
Midspan	No
Reference	02

PRODUCTS IN STOCK

EF	Cód. SAP	Description	Packing
P00036009	10050361	CB/THW-90 +PLUS 450/750V 14 AWG	Roll 100 mts
P00036014	10050366	CB/THW-90 +PLUS 450/750V 12 AWG	Roll 100 mts
P00036019	10050371	CB/THW-90 +PLUS 450/750V 10 AWG	Roll 100 mts
P00036022	10050373	CB/THW-90 +PLUS 450/750V 14 AWG	Drum 600 mts
P00036023	10050374	CB/THW-90 +PLUS 450/750V 12 AWG	Drum 400 mts
P00036024	10050375	CB/THW-90 +PLUS 450/750V 10 AWG	Drum 100 mts

BENDING RADIUS WHEN INSTALLED IN L.V.

$$R=Dxf$$

R: Bending radius when installed (mm)

D: Diameter over sheath or over insulation (when it has not sheath) (mm)

f: Multiplicative factor; given the following table:



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BENDING RADIUS FACTOR LV

Without Armor	Thickness of Conductor Insulation (mm)	Overall Diameter of Cable		
		< 25.4 mm	25.4 mm ≤ D ≤ 50.8 mm	> 50.8 mm
	De 0 a 4.31	4	5	6
	Greater or equal 4.32	5	6	7
Cables with Tape Flat Armor or Wire Sheathed Armor				12



CALCULATION OF CURRENT CONDITION L.V.; 90°C

CALCULATION OF CURRENT CONDITION

Maximum conductor temperature : 90°C.

Ambient air temperature : 30°C.



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