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HOW DO YOU CONNECT VOL. 4 LV CABLES

8 July 2013

Introduction

In the fourth part of the series "How do you connect" I would treat the topic of cables used in LV.
The purpose is not to enter on the sizing but to give an overview to the topic.

cable designation codes

Designation system with CEI 20-27

This designation system has as reference to CEI 20-27.
Conductor cross section, number of core and the presence of the protective conductor are placed at the end .

Examining a common cable the N07V-K 2,5.

Single core cable cross section 2,5mm^2

N Not suit tu IEC standard
07 Rated voltage U0/U 450/750V
V PVC compound
K Flexible conductor

From this example it will be much easier to understand the following table

These tables explain individual initials divided by category

Reference standards

H In conformity with armonized standard
A Suit tu IEC standard
N Not suit tu IEC standard

J In conformity with IEC publications

Rated voltage

03 U0/U = 300 V/300 V
05 U0/U = 300 V/500 V
07 U0/U = 450 V/750 V
1 U0/U = 0,6 kV/1 kV

Sheath isulating material

V PVC
V2 PVC compound at operating temperature of 90 °C
V3 PVC compound for low temperatures
V4 Cross linked PVC
V5 Fire resistant PVC
R Synthetic rubber ethylene - propylene and equivalent sinthetic elastomer
S Silicone rubber
G Ethylene - Vinylacetylene
G9 Special cross linked
M Mineral isulation
N Polycloroprene - neoprene
B ethylene - propylene rubber (EPR)
B3 Butyl rubber
E polyethylene
X Cross polyethylene

Metalling covering (when present)

A7 Aluminium screen
C Copper concentric conductor
C4 Copper braid screen collectively applied on de cores
C7 Copper tape hot wire or wire screen

Z2 Steel wire armouring
Z3 Flat steel wire armouring
Z4 Steel tape armouring
Z5 Steel wire braid

Sheath (When present)

V PVC
V2 PVC compound at operating temperature of 90 °C
V3 PVC compound for low temperatures
B ethylene - propylene rubber (EPR)
R Synthetic rubber ethylene - propylene and equivalent sinthetic elastomer
N Polycloroprene - neoprene
J Glass fibre
T Textile braid on the cores
T6 Textile braid on each cores

Special design (When present))

H Srippable flat cables
H2 Not strippable flat cables
H5 Cables with cordate visible cores
H6 Flat cable with 3 cores or more

Conductor

U Rigid bare conductor
R Sranded rigid conductor
K Flexible conductor for fixed installation
F Flexible conductor for a flexible cable

Conductor Cross section and protective core

Coductor cross section, number of the cores and the presence of the protective core is indicated:

Example 3G2,5 Three conductor cable, cross section 2,5 mm^2 with yellow-green core
Example 4x2,5 Four conductor cable, cross section 2,5 mm^2 without yellow-green core

Designation system with CEI-UNEL 35011

This designation system has as reference to CEI-UNEL 35011.

Conductor cross section, number of core and the presence of the protective conductor are placed at the end .

Examining a common cable FG7OR:
5G10 FG7OR 0,6/1 kV
5G10 Five conductor cable (cross section 10mmq,high module rubber (HEPR)
O Assembled cores in round cable
R PVC compound
0,6/1 kV Rated voltage 0,6/1 kV

These tables explain individual initials divided by category

Conductor

U	Solid conductor
R	Stranded rigid conductor
F	Stranded flexible conductor
FF	Stranded very flexible conductor
S	Sectoral conductor
T	telephone conductor

Isulation

R	PVC

R2 High quality PVC
R3 PVC compound at 105 °C
R7 PVC compound at 90 °C
G Cross linked elastomeric compound
G1 Synthetic rubber
G2 Butyl rubber
G4 Silicone rubber
G5 ethylene propylene rubber (EPR)
G7 High module ethylene propylene rubber (HEPR)
G9 Rubber with low emission of smoke, toxic gases and corrosive gases
G10 Rubber with low emission of smoke, toxic gases and corrosive gases
M Mineral isulation
E4 Cross linked polyethilene
L ethylene vinyl acetate (EVA)
K polychloroprene(PCP)

Cable shape

O Assembled cores in round cable
D Parallel cores in flat cable
W Parallel cores in flat cable with an intermediary furrow

Screen(When present)

H Metallized paper
H1 Copper tape, flat wire or wire screen
H2 Copper braid screen
C Concentric copper conductor
Q Copper sheath

Armour (when present)

A	PVC
F	Steel wire
N	Steel tape
Z	Steel flat wires
Q	Copper sheath

Sheath (when present)

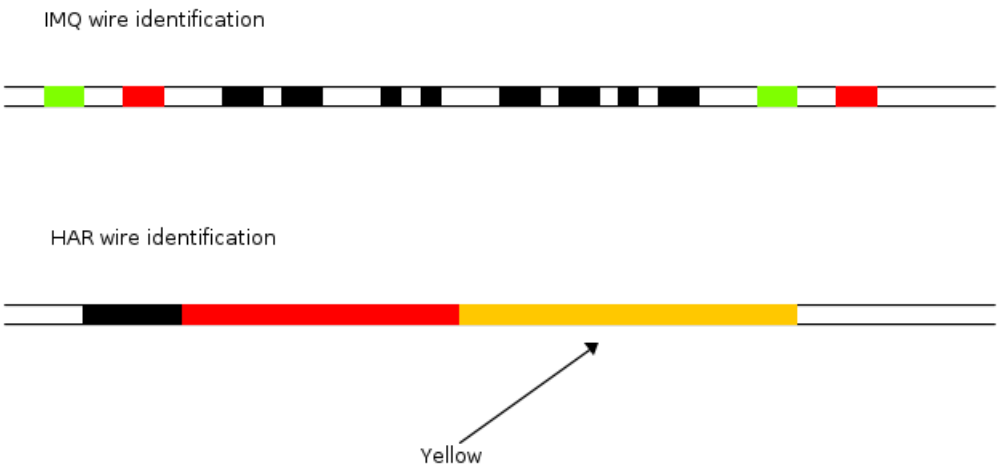
R	PVC
G	Cross linked elastomer
M1	Thermoplastic compound with low emission of smoke and toxic and corrosivegases
M2	Elastomeric compound with low emission of smoke and toxic and corrosivegases
E	polyethylene
E4	Cross linked polyethylene
K	Policloroprene (PCP)
T	Textile braid

Rated voltage

03	U0/U = 300 V/300 V
05	U0/U = 300 V/500 V
07	U0/U = 450 V/750 V
1	U0/U = 0,6 kV/1 kV

Mark of quality IMQ - HAR

the IMQ(IEMMEQU) or the mark HAR (harmonized type cables) can be printed on the sheath or on the insulation or on textile yarn.



Commercial cross sections of energy cables

The table is in mm^2

1,5	2,5	4	6
10	16	25	35
50	70	95	120
150	185	240	300
400	500	630	

Reference standards

Primary reference standards refer to the CEI CT 20 Technical Committee.

In this article were treated parts of CEI 20-27 and CEI-UNEL 35011

Estratto da "http://www.electroyou.it/mediawiki/index.php?title=UsersPages:Massimob:how-do-you-connect-vol-4-lv-cables"