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Spec No. SPV-02-1537

Date.: Mar. 19th, 2019

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SPECIFICATION

FOR

LEAD FREE MULTI CORE CABLE

[P/N: UL2464 (SPV1537) nx17AWG(50/0.18TA) LF]

(n ~ number core)

Prepared	Checked	Approved
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19-3-2019	2 0 · 3· 2019	25-3-2019
HCV/DE	HCV/AM	HCV/GM

Revision record

No.	Date	Rev.	Contents	Prepared by	Reviewed by	Approved by
1	Mar. 19 th , 2019	Initial Issue	Initial Issue	Ha Thi De	Mummy N.M.Cilong	M. Syrgo M. SUZUKI
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1. Scope

This specification covers UL recognized multi core cable.

USE: Internal wiring or external interconnection of electronic equipment.

Rating temperature: 80°C Rating voltage: 300V

2. Applicable standard

UL 758 [Latest version] UL AWM Style 2464

3. Construction and Material

Description			Specification		
	Description	2x17AWG	3x17AWG		
Material		-	Tinned annealed copper wire (TA) strand		
Conductor	Size	AWG	17		
Conductor	Stranding	No./mm	50/0.18		
	Diameter (Nom.)	mm	1.4	47	
	Material	-	Semi-rigid, Lead free PVC		
Insulation	Thickness (Nom.)	mm	0.41		
msulation	Diameter (Nom.)	mm	2.29		
	Color & Identification	-	1. Black; 2. Brown; 3. Red		
Cabling	Binder tape	-	Paper	tape	
Diameter (Nom.)		mm	4.70	5.05	
	Material	-	Heat resistance, Lead free PVC		
T14	Thickness (Nom.)	mm	0.81		
Jacket	Diameter	mm	6.3 ± 0.5	6.7 ± 0.5	
	Color (color code)	-	Black	(BK)	

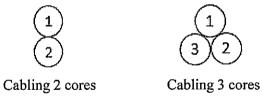
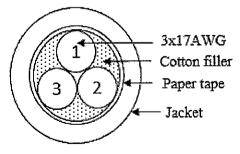


Fig. 1 Lay out of cabling

Example: item 3x17AWG



(*) Suitable fillers may be applied to make a circular cross section.

Fig. 2 Cross-section of cable

4. Marking

The completed cable shall be printed following marking format on the surface throughout entire length by regular interval.

Example:

AWM E41447-HCV STYLE 2464 80C VW-1 HITACHI LF

Note: Making format subject to change without notice according with safety revision

5. Properties

No.	Test Item		Test Detail	Stordend	Test		
	103		Test Detail	Standard	Routine	Туре	Approval
1	Dielectric stren	gth	A.C.2000V/1min; No breakdown	Specification	Yes	X	Yes
2	Jacket tensile st	trength (unaged)	Min 10.3 MPa	UL	X	Yes	Yes
3	Jacket tensile st	trength (aged)(*)	Min 70% (aged at 113±2°C, 168 hours)	UL	X	Yes	Yes
4	Jacket elongation	on (unaged)	Min 100 %	UL	X	Yes	Yes
5	5 Jacket elongation (aged) ^(*)		Min 45% (aged at 113±2°C, 168 hours)	UL	X	Yes	Yes
6	Heat shock		No crack (at 121±1°C, 1 hour)	UL	X	Yes	Yes
7	7 Cold bend		No crack (at -10±2°C, 4 hours)	UL	Х	Yes	Yes
8	B Deformation		Max. 50% (**) (3.93N at 121±1°C)	UL	X	Yes	Yes
9	9 Insulation resistance		Min. 10 MΩ-km (20°C)	Specification	X	Yes	Yes
10	0 Conductor resistance		Max. 15.0 Ω/km (20°C)	Specification	X	Yes	Yes
11	Current	2x17AWG	Max. 17.4A	Specification	-	-	
11	ampacity(***)	3x17AWG	Max. 14.7A				
12	12 Flame test		VW-1	UL	X	Yes	Yes

^{(*)%} of the unaged specimen

6. Packing

6.1 Packing

Each product shall be packed in coil for transportation, and unit length: 100m

6.2 Marking on the Package

Each package shall be tagged to show the following information

- (1) UL Style No.
- (2) Conductor size
- (3) No of conductor
- (4) Color
- (5) Lot No.
- (6) Length
- (7) Use

- (8) File No.
- (9) Rating temperature
- (10) Rating voltage
- (11) Date of manufacturing
- (12) Insulation thickness and material
- (13) Jacket thickness and material
- (14) Name of manufacturer

^{(**) %} of decrease in thickness

^(***) Current ampacity at ambient temp.40°C, max. conductor temp.80°C, in case of single cable in air

7. Order form

Example for 3x17AWG:

UL2464	(SPV1537)	<u>3</u>	x	17AWG(50/0.18TA)	$\underline{\mathbf{LF}}$	\mathbf{BK}	<u>C100</u>
1	2	3		4	5	6	7

1	UL2464	Description (UL Style No.)
2	SPV1537	Specification No. SPV-02-1537
3	3	No. of core
4	17AWG(50/0.18TA)	Conductor size & stranding
5	LF	Lead Free
6	ВК	Jacket Color (Black)
7	C100	Packing style and unit length, "C" for coil in m

8. Control of Chemical Substances

Control of Chemical Substances in this product shall be controlled as below.

10 substances of RoHS Directive

- (1) Applicable standard and statute
 - (a) Directive 2011/65/EU of the European Parliament and of the Council on the Restriction of the use of certain Hazardous Substances in electrical and electronic equipment)
 - (b) 2005/618/EC COMMISSION DECISION of 18 August 2005 (amending Directive 2011/65/EU of the European Parliament and of the Council for the purpose of establishing the maximum concentration values for certain hazardous substances in electrical and electronic equipment)
 - (c) JIS C 0950:2008(The marking for presence of the specific chemical substances for electrical and electronic equipment)
- (2) The maximum concentration values for certain hazardous substances.

	Chemical Substances	Concentration value			
	Chemical Substances	Resin, a paint, and ink	Others		
1	Cadmium and Cadmium Compounds	Less than 5ppm	Less than 75ppm		
2	Hexavalent Chromium Compounds	Less than 1000ppm			
3	Lead and Lead Compounds	Less than 100ppm	Less than 1000ppm		
4	Mercury and Mercury Compounds	Less than 1000ppm			
5	Polybrominated Biphenyls(PBBs)	Less than 1000ppm			
6	Polybrominated Diphenyl ethers(PBDEs)	Less than 1000ppm			
7	Bis (2-ethylhexyl) phthalate (DEHP)*1 (CAS No.117-81-7)	Less than 1000ppm			
8	Benzyl butyl phthalate (BBP)*1 (CAS No. 85-68-7)	Less than 1000ppm			
9	Dibutyl phthalate (DBP)(CAS No. 84-74-2)*1	Less than 1000ppm			
10	Diisobutyl phthalate (DIBP) *1 (CAS No. 84-69-5)	Less than 1000ppm			

^{*1 :} COMMISSION DELEGATED DIRECTIVE (EU) 2015/863