

# AlarmTek<sup>TM</sup>

## FIRE ALARM CABLES

HIGH PERFORMANCE FLAME RETARDANT CABLE  
UL LISTED POWER-LIMITED FIRE-ALARM CIRCUIT CABLE (TYPE FPLR) RATED 105°C



**TEKAB** CO. LLC

# AlarmTek™

Cable that is intended for use in alarm & fire detection systems; it can be installed in vertical runs in a shaft, or for installations in which the cable penetrates more than one floor.

## PERFORMANCE


- Flame Retardant to UL1666 - Type VW-1
- Flame Propagation to BS EN / IEC 60332-1, IEC 60332-3
- UL 1424

## APPLICATIONS


- Alarm Systems & Fire Detection System
- Emergency Lighting
- Public Address Systems
- Education Centers
- Public Entertainment Centers
- Shopping Malls

## APPROVALS

## QUALITY ASSURANCE

CERTIFICATE OF COMPLIANCE	
<b>Certificate Number</b>	20150129-E362991
<b>Report Reference</b>	E362991-20150129
<b>Issue Date</b>	2015-JANUARY-29
<b>Issued to:</b>	TEKAB CO LTD INDUSTRIAL AREA 13 P O BOX 40474 SHARJAH UNITED ARAB EMIRATES
<b>This is to certify that representative samples of</b>	POWER-LIMITED FIRE ALARM CABLE Type FPLR
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
<b>Standard(s) for Safety:</b>	UL 1424, Cables for Power-Limited Fire-Alarm Circuits
<b>Additional Information:</b>	See the UL Online Certifications Directory at <a href="http://www.ul.com/database">www.ul.com/database</a> for additional information
Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.	
Look for the UL Certification Mark on the product.	
	
Bruce Mahrenholz, Assistant Chief Engineer, Global Inspection and Field Services UL LLC Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <a href="http://www.ul.com/contact">www.ul.com/contact</a> .	

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CERTIFICATE	
<b>ISO 9001:2015</b> <b>Quality Management System</b>	
<b>VISCOUNT QUALITY CERTIFICATIONS</b>	
<b>This is to certify that</b>	<b>TEKAB CO. LTD</b>
<b>Located at</b>	<b>4<sup>th</sup> Street, Shed 42, Industrial Area #13, Darari, P.O. Box 40474, Sharjah, United Arab Emirates</b>
has established and maintains a management system according to the requirements of ISO 9001:2015 standard for the following activities:	
<b>Manufacture of Data, Instrumentation, Fire Resistant, Indoor Telephone and Low Voltage Electrical Cables.</b>	
<b>Signed for the certification body</b>	
	General Manager
	
Certificate number: 21/E-QMS/015 Reference IAF EA / NACE code: 19 / 27.32 First Issued 26 May 2014 This Certificate is valid from <b>16 September 2021</b> until <b>14 September 2024</b>	
M-11, Dar AL Maha Building, near Abu Hall Road, Hor AL Anz, Dubai – United Arab Emirates TD8463/9/Aug2019	

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## **FIRE ALARM CABLE (SHIELDED) TYPE FPLR**

**300 VOLTS  
SOLID COPPER CONDUCTOR, PVC-105°C INSULATED, OVERALL SHIELDED,  
& PVC-105°C SHEATHED**

**Specifications: Generally to UL 1424, UL 1666**

### ***CONSTRUCTION***

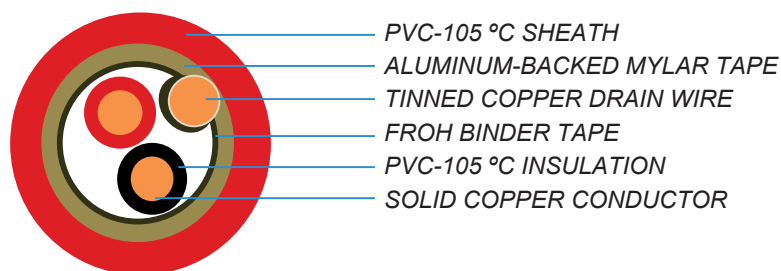
<b>Conductor</b>	Plain, Solid, Annealed Copper as per ASTM B 3 or Class 1 of BS EN 60228.
<b>Insulation</b>	Extruded Polyvinyl Chloride (PVC) rated 105°C
<b>Core Identification</b>	<b>Red &amp; Black</b>
<b>Cable Core Assembly</b>	The required number of cores are assembled together with non-hygroscopic fillers (only if required) and wrapped with a FROH Binder tape.
<b>Overall Screen &amp; Drain Wire</b>	Aluminum-backed Mylar tape (Al-Pet Foil) is applied over the assembly with 100% coverage and an overlap of 25% with metal side in contact with a tinned copper drain wire
<b>Outer Sheath</b>	Extruded Polyvinyl Chloride (PVC) rated 105°C in <b>Red</b> color or <b>White</b> as per required
<b>Printing (Example)</b>	when using mm <sup>2</sup> : POWER-LIMITED FIRE-ALARM CIRCUIT CABLE TYPE FPLR 2XSIZE in mm <sup>2</sup> (2C14) CU/PVC/PVC SHIELDED 105C UL LISTED E362991 TEKAB ALARMTEK MADE IN UAE  when using AWG: POWER-LIMITED FIRE-ALARM CIRCUIT CABLE TYPE FPLR 2XSIZE in AWG (EQV SIZE mm <sup>2</sup> ) CU/PVC/PVC SHIELDED 105C UL LISTED E362991 TEKAB ALARMTEK MADE IN UAE
<b>Temperature Range</b>	-20°C to +105°C (During Operation)
<b>Flame Retardant</b>	UL 1666
<b>Oxygen Index</b>	≥ 30% (ASTM D 2863)
<b>Minimum Bending Radius</b>	8 x Cable OD
<b>Tolerance on Cable Outer Diameter</b>	±1.5 mm
<b><i>ELECTRICAL PROPERTIES</i></b>	
<b>Maximum Conductor D.C. Resistance at 20°C (Ω/km). To be increased by 2 % for Multi Pair/Multicore</b>	36.0 (0.5 mm <sup>2</sup> ), 24.5 (0.75 mm <sup>2</sup> ), 18.1 (1.0 mm <sup>2</sup> ), 12.1 (1.5 mm <sup>2</sup> ), 7.41 (2.5 mm <sup>2</sup> )  36.4 (20 AWG), 21.4 (18 AWG), 13.5 (16 AWG), 8.45 (14 AWG), 5.31 (12 AWG) as per UL 1424
<b>Insulation Resistance (MΩ/km)</b>	≥ 10

<b>Mutual Capacitance – Between Conductors @ 1 kHz (nF/km)</b>	≤ 180 (0.5 mm <sup>2</sup> ), 180 (0.75 mm <sup>2</sup> ), 180 (1.0 mm <sup>2</sup> ), 180 (1.5 mm <sup>2</sup> ), 250 (2.5 mm <sup>2</sup> ) ≤ 180 (20 AWG), 180 (18 AWG), 180 (16 AWG), 250 (14 AWG), 250 (12 AWG)
<b>Capacitance between core &amp; screen @ 1 kHz (nF/km)</b>	≤ 280 (0.5 mm <sup>2</sup> ), 280 (0.75 mm <sup>2</sup> ), 280 (1.0 mm <sup>2</sup> ), 280 (1.5 mm <sup>2</sup> ), 320 (2.5 mm <sup>2</sup> ) ≤ 280 (20 AWG), 280 (18 AWG), 280 (16 AWG), 320 (14 AWG), 320 (12 AWG)
<b>Inductance to Resistance Ratio (L/R) (μH/Ω)</b>	≤ 25 (18 AWG) ≤ 40 (16 AWG) ≤ 60 (14 AWG) ≤ 90 (12 AWG)
<b>Voltage Rating</b>	300V

### **DIMENSION TABLE**

<b>Item No.</b>	<b>TEKAB I Internal Code</b>	<b>Core</b>	<b>Size (mm<sup>2</sup>/AWG)</b>	<b>No. of Strand</b>	<b>Nominal Insulation Thickness (mm)</b>	<b>Nominal Outer Sheath Thickness (mm)</b>	<b>Approx. Overall Diameter (mm)</b>	<b>Approx. Weight (kg/km)</b>
1	VUA7VU	2C	0.5 mm <sup>2</sup>	1	0.38	0.58	5.0	37
2	VUA7VU	2C	0.75 mm <sup>2</sup>	1	0.38	0.58	5.4	44
3	VUA7VU	2C	1.0 mm <sup>2</sup>	1	0.38	0.58	5.7	50
4	VUA7VU	2C	1.5 mm <sup>2</sup>	1	0.38	0.58	6.2	65
5	VUA7VU	2C	2.5 mm <sup>2</sup>	1	0.38	0.58	7.5	93
6	VUA7VU	2C	20 (AWG)	1	0.38	0.58	5.1	38
7	VUA7VU	2C	18 (AWG)	1	0.38	0.58	5.5	46
8	VUA7VU	2C	16 (AWG)	1	0.38	0.58	6.0	60
9	VUA7VU	2C	14 (AWG)	1	0.51	0.58	7.3	86
10	VUA7VU	2C	12 (AWG)	1	0.51	0.58	8.1	113

### **CROSS-SECTIONAL DRAWING**



# AlarmTek™

## PHYSICAL CHARACTERISTICS FOR SHIELDED CABLE

Number of Cores (nos.)	Cross - Sectional Area (mm <sup>2</sup> ) / AWG	Approximate Overall Diameter(mm)	Approximate Net weight (kg/km)
2	0.5mm <sup>2</sup>	5.0	37
	0.75mm <sup>2</sup>	5.4	44
	1.0mm <sup>2</sup>	5.7	50
	1.5mm <sup>2</sup>	6.2	65
	2.5mm <sup>2</sup>	7.5	93
	20 (AWG)	5.1	38
	18 (AWG)	5.5	46
	16 (AWG)	6.0	60
	14 (AWG)	7.3	86
	12 (AWG)	8.1	113

\*More number of core can be provided if required

## ELECTRICAL CHARACTERISTICS FOR SHIELDED CABLE

Voltage Rating	300V									
Continuous Operating Temperature	-20°C to 105°C									
Dielectric Test, Core /Core & Core/Screen	1500V <sub>AC</sub> for 2S or 2500V <sub>DC</sub> for 2S									
Cross-section, mm <sup>2</sup> /AWG	0.5mm <sup>2</sup>	0.75mm <sup>2</sup>	1.0mm <sup>2</sup>	1.5mm <sup>2</sup>	2.5mm <sup>2</sup>	20 (AWG)	18 (AWG)	16 (AWG)	14 (AWG)	12 (AWG)
Conductor resistance at 20°C (Ω/km)	36.0	24.5	18.1	12.1	7.41	36.4	21.4	13.5	8.45	5.31
Insulation Resistance at 20°C (MΩ/km) (min)	10	10	10	10	10	10	10	10	10	10
Capacitance (pf/m) Core/Core	180	180	180	180	250	180	180	180	250	250
Capacitance (pf/m) Core/Screen	280	280	280	280	320	280	280	280	320	320

\*Detailed Technical Data Sheet attached for shielded cable

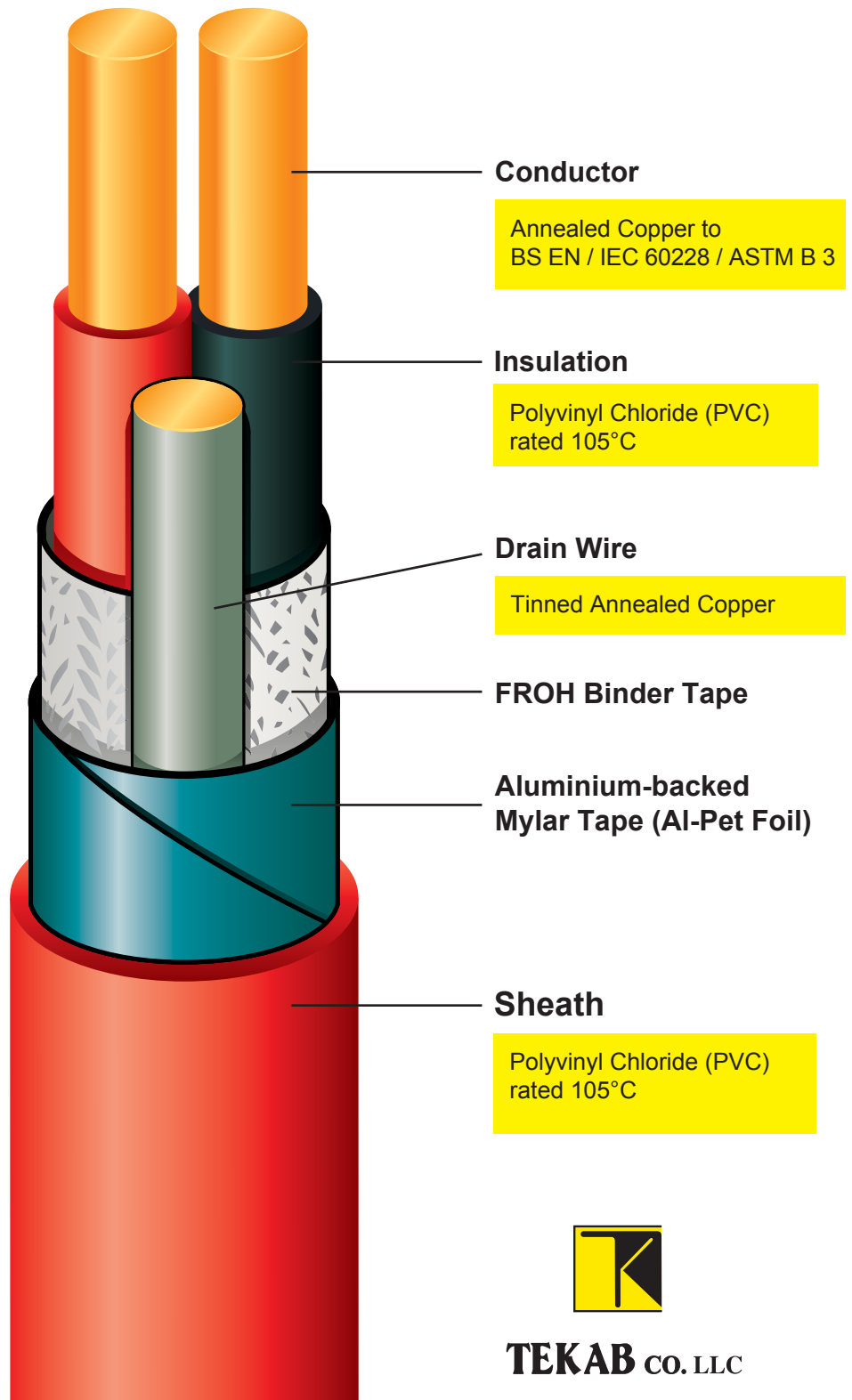


# AlarmTek™

**AlarmTek™** UL Listed Cables for emergency lighting and fire alarm systems

## Meet specifications

- BS EN / IEC 60332-1
- IEC 60332-3
- UL 1666
- VW-1
- UL-1424



## Core Identification

**2 core:** Red, Black

**3 core:** Red, Yellow, Blue

**Sheath:** Red or White (as required)

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**TEKAB** CO. LLC

## **FIRE ALARM CABLE (UNSHIELDED) TYPE FPLR**

**300 VOLTS  
SOLID COPPER CONDUCTOR, PVC-105°C INSULATED, & PVC-105°C SHEATHED**

**Specifications: Generally to UL 1424, UL 1666**

### ***CONSTRUCTION***

<b>Conductor</b>	Plain, Solid, Annealed Copper as per ASTM B 3 or Class 1 of BS EN 60228.
<b>Insulation</b>	Extruded Polyvinyl Chloride (PVC) rated 105°C
<b>Core Identification</b>	<b>Red &amp; Black</b>
<b>Cable Core Assembly</b>	The required number of cores are assembled together & wrapped together with FROH Binder tape.
<b>Outer Sheath</b>	Extruded Polyvinyl Chloride (PVC) rated 105°C in <b>Red</b> color or <b>White</b> as per requirement
<b>Printing (Example)</b>	when using mm <sup>2</sup> : POWER-LIMITED FIRE-ALARM CIRCUIT CABLE TYPE FPLR 2XSIZE in mm <sup>2</sup> (2C14) CU/PVC/PVC UNSHIELDED 105C UL LISTED E362991 TEKAB ALARMTEK MADE IN UAE  when using AWG: POWER-LIMITED FIRE-ALARM CIRCUIT CABLE TYPE FPLR 2XSIZE in AWG (EQV SIZE mm <sup>2</sup> ) CU/PVC/PVC UNSHIELDED 105C UL LISTED E362991 TEKAB ALARMTEK MADE IN UAE
<b>Temperature Range</b>	-20°C to +105°C (During Operation)
<b>Flame Retardant</b>	UL 1666
<b>Oxygen Index</b>	≥ 30% (ASTM D 2863)
<b>Minimum Bending Radius</b>	8 x Cable OD
<b>Tolerance on Cable Outer Diameter</b>	±1.5 mm

### ***ELECTRICAL PROPERTIES***

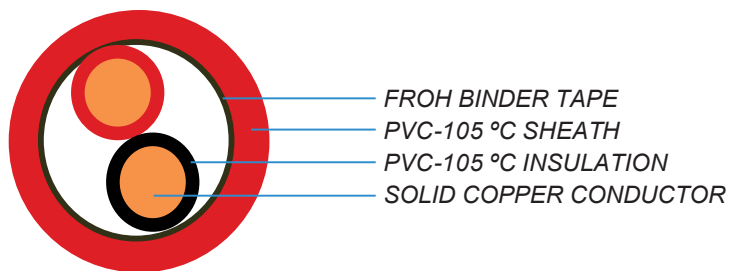
<b>Maximum Conductor D.C. Resistance at 20°C (Ω/km). To be increased by 2 % for Multi Pair/Multicore</b>	36.0 (0.5 mm <sup>2</sup> ), 24.5 (0.75 mm <sup>2</sup> ), 18.1 (1.0 mm <sup>2</sup> ), 12.1 (1.5 mm <sup>2</sup> ), 7.41 (2.5 mm <sup>2</sup> )  36.4 (20 AWG), 21.4 (18 AWG), 13.5 (16 AWG), 8.45 (14 AWG), 5.31 (12 AWG) as per UL 1424
<b>Insulation Resistance (MΩ/km)</b>	≥ 10
<b>Mutual Capacitance – Between Conductors @ 1 kHz (nF/km)</b>	≤ 120 (0.5 mm <sup>2</sup> ), 120 (0.75 mm <sup>2</sup> ), 120 (1.0 mm <sup>2</sup> ), 130 (1.5 mm <sup>2</sup> ), 250 (2.5 mm <sup>2</sup> )  ≤ 120 (20 AWG), 120 (18 AWG), 130 (16 AWG), 250 (14 AWG), 250 (12 AWG)

<b>Inductance to Resistance Ratio (L/R) (<math>\mu\text{H}/\Omega</math>)</b>	$\leq 25$ (Up to 1.0 mm <sup>2</sup> / 18 AWG) $\leq 40$ (1.5 mm <sup>2</sup> / 16 AWG) $\leq 60$ (2.5 mm <sup>2</sup> / 14 AWG)
<b>Voltage Rating</b>	300V

### **DIMENSION TABLE**

<b>Item No.</b>	<b>TEKAB Internal Code</b>	<b>Core</b>	<b>Size (mm<sup>2</sup>/AWG)</b>	<b>No. of Strand</b>	<b>Nominal Insulation Thickness (mm)</b>	<b>Nominal Outer Sheath Thickness (mm)</b>	<b>Approx. Overall Diameter (mm)</b>	<b>Approx. Weight (kg/km)</b>
1	VUVU	2C	0.5 mm <sup>2</sup>	1	0.38	0.58	4.8	31
2	VUVU	2C	0.75 mm <sup>2</sup>	1	0.38	0.58	5.3	38
3	VUVU	2C	1.0 mm <sup>2</sup>	1	0.38	0.58	5.6	45
4	VUVU	2C	1.5 mm <sup>2</sup>	1	0.38	0.58	6.1	57
5	VUVU	2C	2.5 mm <sup>2</sup>	1	0.38	0.58	7.4	85
1	VUVU	2C	20 (AWG)	1	0.38	0.58	4.9	32
1	VUVU	2C	18 (AWG)	1	0.38	0.58	5.2	41
2	VUVU	2C	16 (AWG)	1	0.38	0.58	5.8	53
3	VUVU	2C	14 (AWG)	1	0.51	0.58	7.1	77
4	VUVU	2C	12 (AWG)	1	0.51	0.58	7.9	105

### **CROSS-SECTIONAL DRAWING**





# AlarmTek™

## PHYSICAL CHARACTERISTICS FOR UNSHIELDED CABLES

Number of Cores (nos.)	Cross - Sectional Area (mm <sup>2</sup> ) / AWG	Approximate Overall Diameter(mm)	Approximate Net weight (kg/km)
2	0.5 mm <sup>2</sup>	4.8	31
	0.75 mm <sup>2</sup>	5.3	38
	1.0 mm <sup>2</sup>	5.6	45
	1.5 mm <sup>2</sup>	6.1	57
	2.5 mm <sup>2</sup>	7.4	85
	20 (AWG)	4.9	32
	18 (AWG)	5.2	41
	16 (AWG)	5.8	53
	14 (AWG)	7.1	77
	12 (AWG)	7.9	105

\*More number of core can be provided if required

## ELECTRICAL CHARACTERISTICS FOR UNSHIELDED CABLE

Voltage Rating	300V									
Continuous Operating Temperature	-20°C to 105°C									
Dielectric Test, Core/Core	1500V <sub>AC</sub> for 2S or 2500V <sub>DC</sub> for 2S									
Cross-section, mm <sup>2</sup> /AWG	0.5 mm <sup>2</sup>	0.75 mm <sup>2</sup>	1.0 mm <sup>2</sup>	1.5 mm <sup>2</sup>	2.5 mm <sup>2</sup>	20 (AWG)	18 (AWG)	16 (AWG)	14 (AWG)	12 (AWG)
Conductor resistance at 20°C (Ω/km)	36.0	24.5	18.1	12.1	7.41	36.4	21.4	13.5	8.45	5.31
Insulation Resistance at 20°C (MΩ/km) (min)	10	10	10	10	10	10	10	10	10	10
Capacitance (pf/m) Core/Core	120	120	120	130	250	120	120	130	250	250

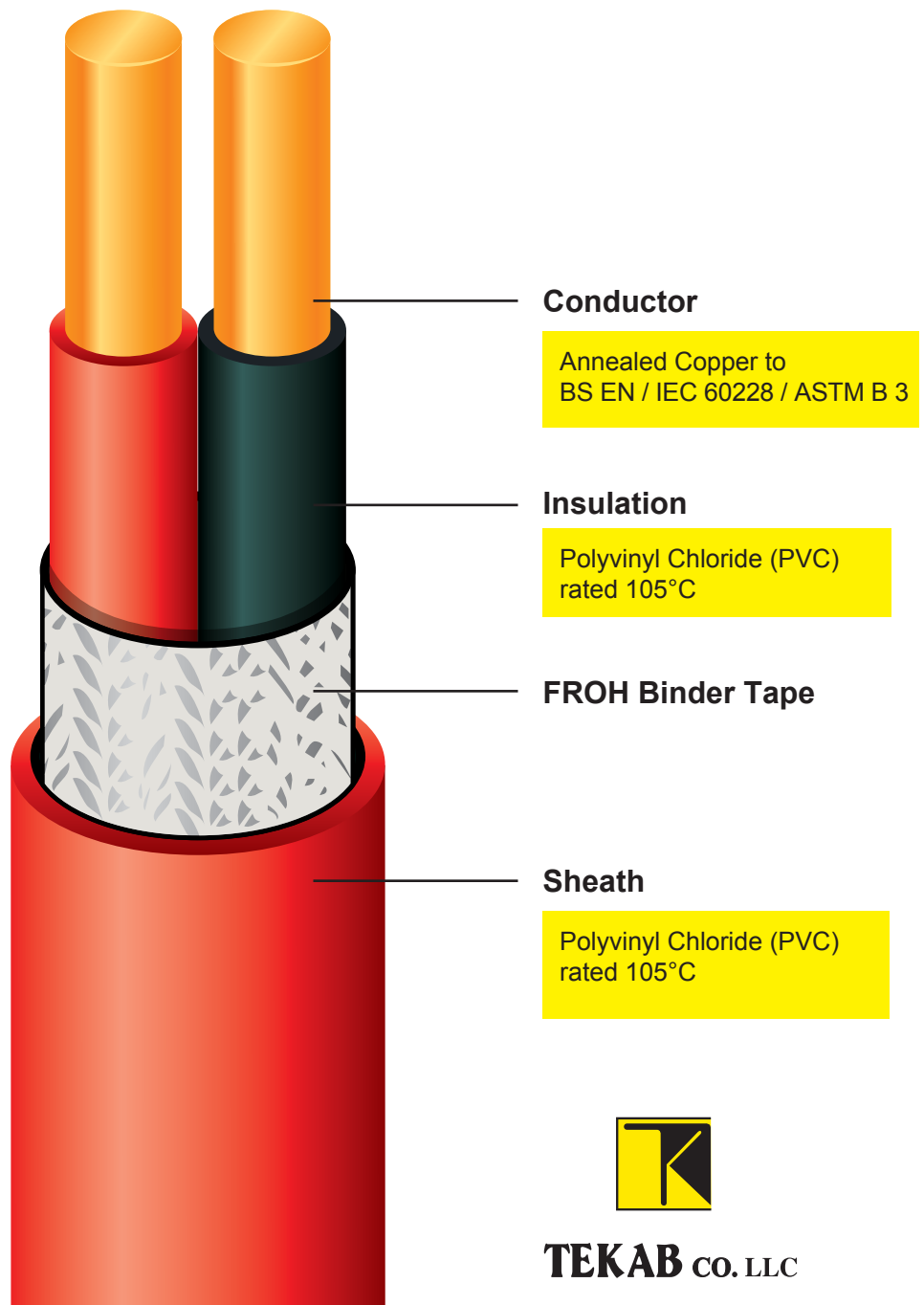
\*Detailed Technical Data Sheet attached for unshielded cable

# AlarmTek™

**AlarmTek™** UL Listed Cables for emergency lighting and fire alarm systems

## Meet specifications

- BS EN / IEC 60332-1
- IEC 60332-3
- UL 1666
- VW-1
- UL-1424



## Core Identification

**2 core:** Red, Black

**3 core:** Red, Yellow, Blue

**Sheath:** Red or White (as required)







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