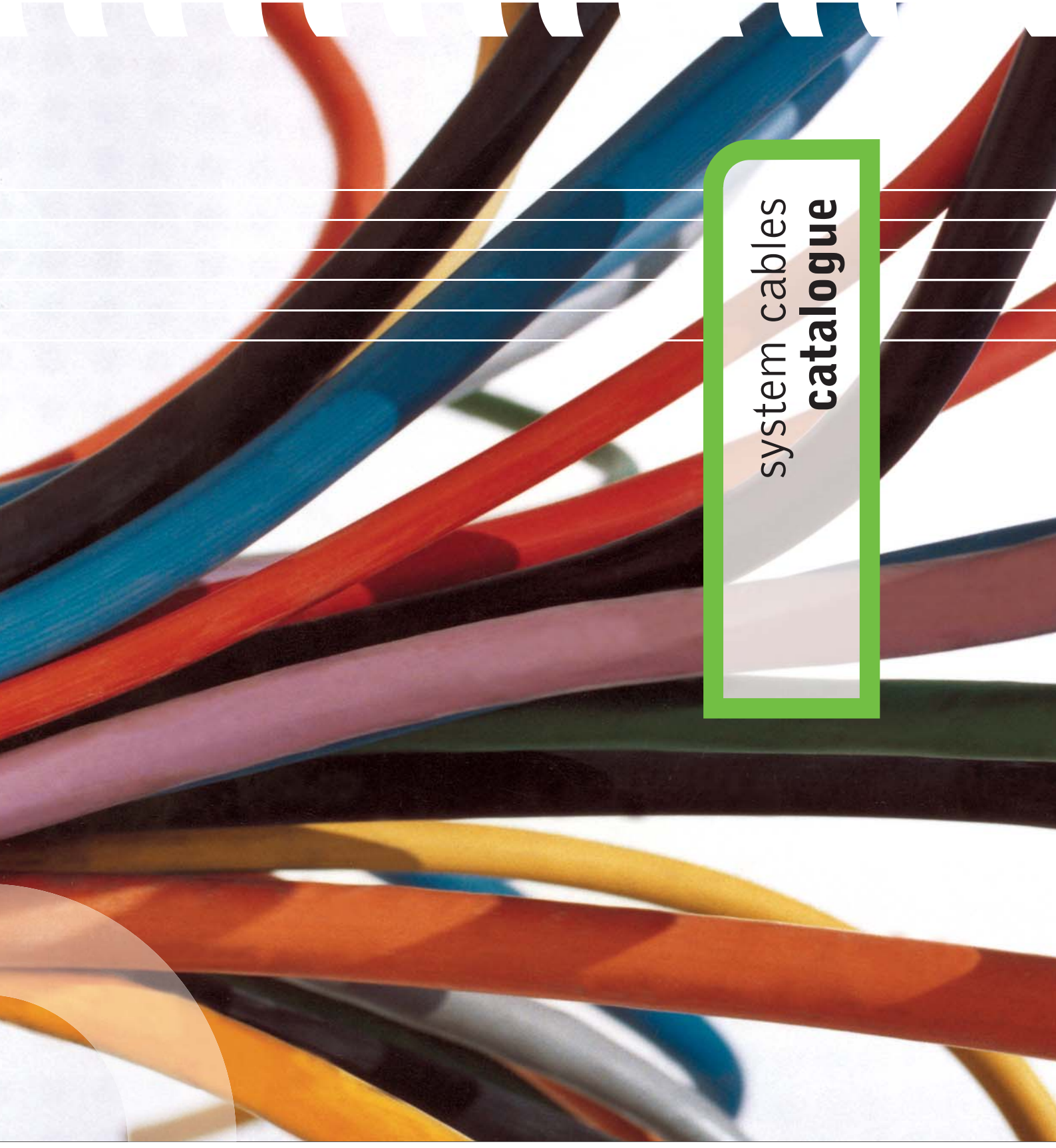
MESC
SPECIALIZED CABLES



system cables **catalogue**

MESC
SPECIALIZED CABLES

INTRODUCTION

MESC Specialized Cables is considered as a world-class and top-of-the-range manufacturer and leading supplier of specialized cables to EPC contractors for mega projects in the Middle East and North Africa.

Established in 1993 as a privately owned company, MESC Specialized Cables started rolling its machines in 1994 and selling in 1995. After consolidating its presence in KSA as the market leader, MESC Specialized Cables succeeded in penetrating other markets in GCC, Middle East, North Africa, Europe and USA.

MESC Specialized Cables plant consists of ultra modern facilities, high-tech machinery and a well-equipped laboratory, built for conducting various routine and type tests. It operates with a clearly defined and documented Quality System set in accordance with the guidelines of ISO9001:2000 and ISO14001:2004 for all its activities right from the selection of raw material suppliers, schedule planning, production, testing and to the delivery of cables, with a policy aiming for total customer satisfaction. MESC Specialized Cables products are manufactured to international standards, tested and certified by prestigious institutions such as: 3P (Denmark), BSI(UK), Cable Technology Laboratories Inc. (USA), CSA (Canada), IMQ (Italy), KEMA (Netherlands), Saudi Arabian Standards Organization (SASO), UL (USA),VDE (Germany), Warrington Fire Research (UK).

MESC Specialized Cables products are approved by all oil, gas and petrochemical companies in the GCC region, such as: Aramco, Sabic, STC, SEC (KSA), Kuwait Oil Co. (KOC), KNPC (Kuwait), Qatar Petroleum, MEW (Qatar), ADCO, GASCO, ADNOC (UAE). They are also approved by many major international EPC contractors such as: ABB, ABV Rock Group, Bechtel, Daelim Engineering Co., Doosan Heavy Industries, Fisia Italiamapianti, Fluor Daniel, HyundaiEngineering & Construction Co., JGC Corporation, NPCC, Siemens, Snamprogetti, Technip, Toyo Engineering Co.

This catalogue covers most of the productsÕ range with illustrative technical parameters of each cable. However, this range isnÕt restricted since MESC Specialized Cables true value is in the adaptation of the products according to the customersÕ needs and specifications.

CERTIFICATE

The TÜV CERT Certification Body for QM-Systems of RWTÜV Systems GmbH

hereby certifies in accordance with TÜV CERT procedure that

M E S C
SPECIALIZED CABLES
P.O. Box 585, Riyadh – 11383
Kingdom of Saudi Arabia

has established and applies a quality system for

Manufacture and sales of industrial, instrumentation, process control, data, system, coaxial, telephone, fire resistant and low voltage power & control cables

An audit was performed, Report No. **2.5-2775/2001**

Proof has been furnished that the requirements according to

ISO 9001 : 2000 / EN ISO 9001 : 2000

are fulfilled. The certificate is valid until **29 February 2008**

Certificate Registration No. **04100 19950457**

The company has been certified since **1995**

Deutscher Akkreditierungs Rat DAR TGA-ZM-30-96-00

Essen, 07.03.2005

RWTÜV

The TÜV CERT Certification Body for QM systems of RWTÜV Systems GmbH

10/014d neutral RWTÜV 2.00

INDEX

CO-AXIAL
MATV CABLES

CO-AXIAL CABLE 75 OHMS MESC 2005

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

RG-59/ U

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg.			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2833-01CRG 59U-U3BK6-00 1000 m in Drum 2833-01CRG 59U-U3BK8-00 Order No. 28001	10.4 34.1	CUWLD	20	1 X 0.81	147.2	FPE	3.71	100% AMT and 40% Al wire braid 55.8 Ω / Km	PVC BLACK	6.16	75	53.1	82	1 10 50 100 200 400 700 900 1000	2.0 3.3 5.9 8.2 11.5 16.1 21.3 24.3 25.9

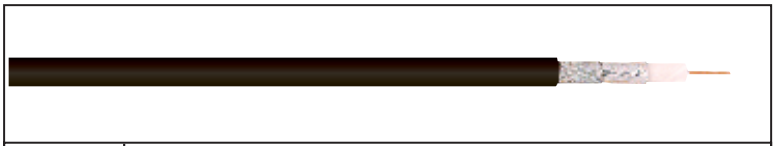
RG-6 / U

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2833-01CRG6/U-U3BK6-00 1000 m in Drum 2833-01CRG6/U-U3BK8-00 Order No. 28002	13.4 44.0	CUWLD	18	1 X 1.02	93.1	FPE	4.59	100% AMT and 40% Al wire braid 38.1 Ω / Km	PVC BLACK	7.0	75	53.1	82	1 10 50 100 200 400 700 900 1000	1.6 3.0 4.9 6.6 9.2 13.1 17.4 20.0 21.3

RG-11/ U

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2833-01CRG11U-U3BK6-00 1000 m in Drum 2833-01CRG11U-U3BK8-00 Order No. 28003	26.5 87.0	CUWLD	14	1 X 1.63	36.3	FPE	7.25	100% AMT and 40% Al wire braid 17.4 Ω / Km	PVC BLACK	10.3	75	53.1	82	1 10 50 100 200 400 700 900 1000	1.0 2.0 3.0 3.9 5.6 7.9 11.5 12.5 13.1

COAXIAL
CATV CABLES



CO-AXIAL CABLE 75 OHMS MESC 2005

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

RG-59/U

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20ûC ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 2133-01CRG59U-U3BK6-00	11	CUWLD	20	1 X 0.81	147.2	FPE	3.71	100% AMT and 67% Al wire braid 36.3 Ω / Km	PVC BLACK	6.16	75	53.1	82	1	2.0
														10	3.3
														50	5.9
														100	8.2
1000 m in Drum 2133-01CRG59U-U3BK8-00	36													200	11.5
														400	16.1
														700	21.3
														900	24.3
Order No. 21001														1000	25.9

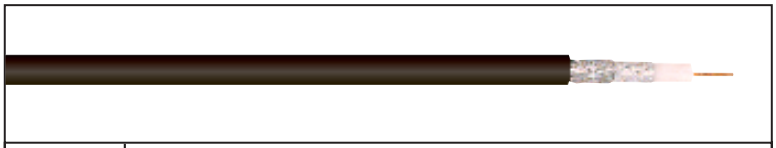
RG6/U

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 2133-01CRG 6/U-U3BK6-00	14	CUWLD	18	1 X 1.02	93.1	FPE	4.59	100% AMT and 61% Al wire braid 33.1 Ω / Km	PVC BLACK	7.0	75	53.1	82	1	1.6
														10	3.0
														50	4.9
														100	6.6
1000 m in Drum 2133-01CRG 6/U-U3BK8-00	46													200	9.2
														400	13.1
														700	17.4
														900	20.0
Order No. 21002														1000	21.3

RG11/U

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance ohm/Km	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 2133-01CRG 11U-U3BK6-00	27	CUWLD	14	1 X 1.63	36.3	FPE	7.25	100% AMT and 61% Al wire braid 23.4 Ω / Km	PVC BLACK	10.3	75	53.1	82	1	1.0
														10	2.0
														50	3.0
														100	3.9
1000 m in Drum 2133-01CRG 11U-U3BK8-00	65.6													200	5.6
														400	7.9
														700	11.5
														900	12.5
Order No. 21003														1000	13.1

COAXIAL
MIL SPEC CABLES TO MIL-C-17G



CO-AXIAL CABLE 50 OHMS MESC 2005

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

RG- 58 C/U, MIL-C-17G

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Mat's	Dia. mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 22C2-01CRG58U-U2BK6-00 1000 m in Drum 22C2-01CRG58U-U2BK8-00 Order No. 22001	11.9 39	TC	20	19 X 0.18	35.4	PE	2.95	TC braid 96% 13.4 Ω / Km	PVC BLACK	4.9	50	101.0	66	1 10 50 100 200 400 700 900 1000	1.4 4.6 10.8 16.1 23.9 37.7 55.8 65.6 70.5

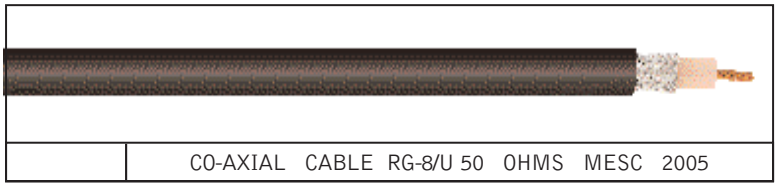
RG-213/U, MIL-C-17G 30V 60¼C

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20ûC ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Mat'l	Dia. mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2212-01CRG 213-U1BK6-00 1000 m in Drum 2212-01CRG 213-U1BK8-00 Order No. 22002	50.6 166	BC	13	7 X 0.76	5.6	PE	7.25	BC braid 96% 3.9 Ω / Km	PVC BLACK	10.3	50	101.1	66	1 10 50 100 200 400 700 900 1000	0.6 2.0 4.9 6.9 9.8 15.7 21.3 24.9 26.9

RG-216, MIL-C-17G 85¼C

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20ûC ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance ohm/Km	Mat's	Dia. mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2222-01CRG216-U1BK6-00 1000 m in Drum 2222-01CRG216-U1BK8-00 Order No. 22003	55.6 182.4	TC	18	7 X 0.4	20.0	PE	7.25	2 BC braids 95% 2.6 Ω / Km	PVC BLACK	10.80	75	67.3	66	1 10 50 100 200 400 700 900 1000	0.62 2.2 4.3 6.6 9.5 13.8 19.0 22.3 23.3

COAXIAL
COMMERCIAL 50 ohm TRANSMISSION AND COMPUTER CABLES



CO-AXIAL CABLE RG-8/U 50 OHMS MESC 2005

LEGEND:		
BC	ñ	Bare Copper
TC	ñ	Tinned Copper
CUWLD	ñ	Copper Covered Steel (copperweld)
PE	ñ	Solid Polyethylene
FPE	ñ	Cellular (Foam) Polyethylene
AL	ñ	Aluminum
AMT	ñ	Aluminum Mylar Tape
PVC	ñ	Polyvinyl Chloride

RG-58/U, NEC Type CL 2 30 V 80ûC

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 25C2-01CRG58U-U2BK6-00 1000 m in Drum 25C2-01CRG58U-U2BK8-00 Order No. 25001	11.9 39	TC	20	19 X 0.18	35.4	PE	2.95	TC braid 96% 13.4 Ω / Km	PVC BLACK	4.9	50	101.0	66	1 10 50 100 200 400 700 900 1000	1.4 4.6 10.8 16.1 23.9 37.7 55.8 65.6 70.5

RG-58/U, NEC TypeCL 2X-30V 80ûC

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 2562-01CRG 58U-U2BK6-00 1000 m in Drum 2562-01CRG 58U-U2BK8-00 Order No. 25002	11.8 38.7	BC	20	1 x 0.82	32.8	PE	2.95	TC braid 96% 13.4 Ω / Km	PVC BLACK	4.9	53	93	66	1 10 50 100 200 400 700 900 1000	1.1 3.9 10.2 14.8 22.3 32.8 45.9 52.5 55.8

RG-8/U, NEC Type CL 2 30 V 80ûC

Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
	Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance ohm/Km	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
1000 ft in reel 2863-01CRG 8/U-U2BK6-00 1000 m in Drum 2863-01CRG 8/U-U2BK8-00 Order No. 25003	49 160.7	BC	10	1 X 2.60	3.9	FPE	7.25	100% AMT and 95% TC braid 3.6 Ω / Km	PVC BLACK	10.3	50	85.3	78	1 10 50 100 200 400 700 900 1000 4000	0.3 1.6 3.6 5.2 7.9 11.5 16.4 18.7 19.7 42.6

COAXIAL
INDUSRIAL TWINAX CABLES 600V

TWINAX CABLE 600V MESC 2005

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

78 OHM DATA CABLE, UL-1277 Type TC 75ûC

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20ûC	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg.			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2322-02C18AWG-U2BL6-00 1000 m in Drum 2322-02C18AWG-U2BL8-00 Order No. 23001	27 88.6	TC	18	7 X 0.39	22.7	PE COLOR CODED BLUE & WHITE	4.90	100% AMT and 55% TC braid .102Ω / Km	PVC DARK BLUE	8.0	78	70.1	66	1 10 50 100 200 400	2.3 6.6 12.5 18.0 25.6 35.4

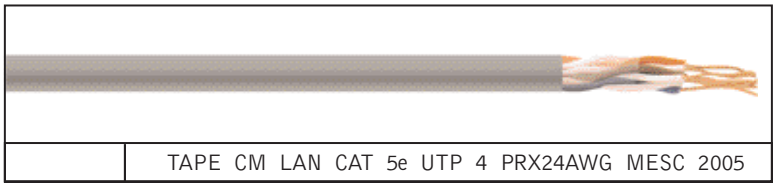
100 OHM DATA CABLE, UL-1277 Type TC 75û C

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20ûC	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg.			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2422-02C18AWG-U2BL6-00 1000 m in Drum 2422-02C18AWG-U2BL8-00 Order No. 24001	32 105	TC	18	7 X 0.39	22.7	PE COLOR CODED BLUE & WHITE	6.26	100% AMT and 55% TC braid 9.1Ω / Km	PVC DARK BLUE	9.4	100	55.3	66	1 10 50 100 200 400	1.8 5.2 9.8 14.2 20.1 24.4

124 OHM DATA CABLE, UL-1277 Type TC 75ûC

Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Material	AWG	Strands X diameter	Nom. D.C. Res. at 20ûC	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
	Kg.			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
1000 ft in reel 2622-02C18AWG-U2BL6-00 1000 m in Drum 2622-02C18AWG-U2BL8-00 Order No. 26001	41 134.5	TC	18	7 X 0.39	22.7	PE COLOR CODED BLUE & WHITE	8.34	100% AMT and 55% TC braid 8.2 Ω / Km	PVC DARK BLUE	10.5	124	44.5	66	1 10 50 100 200 400	1.5 3.9 7.9 11.4 16.2 22.4

LOCAL AREA NETWORK CABLE - LAN
EIA / TIA 568-A & UL-444



TAPE CM LAN CAT 5e UTP 4 PRX24AWG MESC 2005

MESCODATA LAN Cables are available in category 3, category 4 and category 5e performance defined as per EIA / TIA 568-A. Category 3 cables are used for data transmission rate of 16MB/S, category 4 cables upto 20 MB/S and category 5e cables upto 150 MB/S.

Construction

24 AWG solid bare copper conductor insulated with solid polyethylene. Colour coded cores twisted into pairs and cabled together. Gray outer jacket of PVC as per UL-444. UL LISTED TYPE CM.

Packing: Available in 1000 Ft. (305 Mt.) length on reels.

COLOUR CODE

Pairs	A	B
1	White/Blue Stripe	Blue
2	White/Orange Stripe	Orange
3	White/Green Stripe	Green
4	White/Brown Stripe	Brown

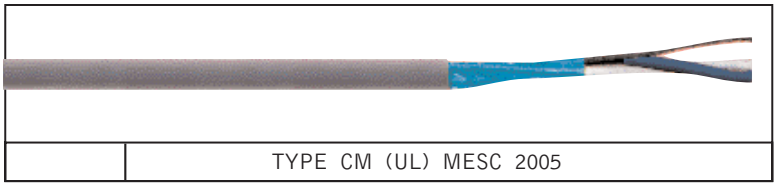
SIZE : 4 PAIR 24 AWG

Order No.	Category & MESC Code	Conductor Dia. mm	Insulation Thickness mm	Jacket Thickness mm	Nominal O.D. mm	Standard Length mm	Approx. Weight Kg
M1003	Category - 5e M662-04P24AWG-U0GYM-00	0.51	0.17	0.6	5.3	305	9.8

PERFORMANCE SPECIFICATION AS PER EIA/TIA 568-A

		Category - 5e
D.C. Resistance at 20ûC (½ /Km)		93.8
Impedance (½)		100 ± 15 (1 - 16 MHz)
Nominal Capacitance (pF/m)		46
Max. Attenuation (dB/100Mtr)	1 MHz	2.1
	4 MHz	4.3
	10 MHz	6.6
	16 MHz	8.2
	20 MHz	9.2
	31.5 MHz	11.8
	100 MHz	22.0
Min. Crosstalk (dB/100Mtr) N.E.X.T.	1 MHz	65.3
	4 MHz	56.3
	10 MHz	50.3
	16 MHz	47.3
	20 MHz	45.8
	31.5 MHz	42.9
	100 MHz	35.3

COMPUTER CABLES
EIA RS-232 APPLICATIONS
(UL 2464)



TYPE CM (UL) MESC 2005

Application : These cables are used for computer inter-connections, EIA RS-232 and CAD/CAM systems.

Construction

- **Conductor** : Stranded Tinned Copper .
- **Insulation** : Semi- rigid PVC.
- **Assembly** : Colour coded cores are twisted into pairs with staggered lay technique and cabled together. The colour code is as per Table 1. The assembly is covered with a non-hygroscopic tape.
- **Screen** : An Aluminium Polyester tape is applied with a stranded tinned copper drain wire (24 AWG) either longitudinally or helically with a suitable overlap for 100% shield coverage.
- **Jacket** : Grey coloured PVC.

Technical Data

Specification	UL 2464
Temperature Range	- 20ûC to + 80ûC
Operating Voltage	300 V
Max. Cond. Resistance at 20ûC (½/Km)	90.9
Nom. Mutual Capacitance (pF/m)	98
Nom. Cond. / Shield Capacitance (pF/m)	164
Nom. Indepedance (½)	75

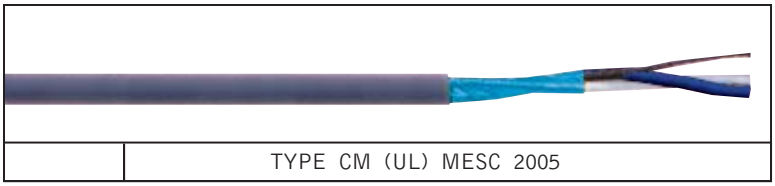
COMPUTER CABLES
EIA RS-232 APPLICATIONS
UL 2464

Size AWG	Order No.	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Insulation Thickness mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
	12024	1221-01P24AWG-U0GY 8-00	1	7 x 0.2	0.25	0.81	4.4	25
	12025	1221-02P24AWG-U0GY 8-00	2	7 x 0.2	0.25	0.81	5.7	39
	12026	1221-03P24AWG-U0GY 8-00	3	7 x 0.2	0.25	0.81	5.9	46
	12027	1221-04P24AWG-U0GY 8-00	4	7 x 0.2	0.25	0.81	6.5	55
	12028	1221-05P24AWG-U0GY 8-00	5	7 x 0.2	0.25	0.89	7.2	67
	12029	1221-06P24AWG-U0GY 8-00	6	7 x 0.2	0.25	0.89	7.7	76
24	12030	1221-07P24AWG-U0GY 8-00	7	7 x 0.2	0.25	0.89	8.1	85
	12031	1221-08P24AWG-U0GY 8-00	8	7 x 0.2	0.25	0.89	8.5	93
	12032	1221-09P24AWG-U0GY 8-00	9	7 x 0.2	0.25	0.94	9.0	104
	12033	1221-10P24AWG-U0GY 8-00	10	7 x 0.2	0.25	1.02	9.6	116
	12034	1221-15P24AWG-U0GY 8-00	15	7 x 0.2	0.25	1.02	11.2	157
	12035	1221-19P24AWG-U0GY 8-00	19	7 x 0.2	0.25	1.02	12.2	189
	12036	1221-25P24AWG-U0GY 8-00	25	7 x 0.2	0.25	1.14	13.9	243

COLOUR CODE TABLE 1

No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire
1	White	Blue	11	Black	Blue	21	Purple	Blue
2	White	Orange	12	Black	Orange	22	Purple	Orange
3	White	Green	13	Black	Green	23	Purple	Green
4	White	Brown	14	Black	Brown	24	Purple	Brown
5	White	Grey	15	Black	Grey	25	Purple	Grey
6	Red	Blue	16	Yellow	Blue			
7	Red	Orange	17	Yellow	Orange			
8	Red	Green	18	Yellow	Green			
9	Red	Brown	19	Yellow	Brown			
10	Red	Grey	20	Yellow	Grey			

COMPUTER CABLES
LOW CAPACITANCE, FOR EIA RS-232 APPLICATIONS (UL 2919)



TYPE CM (UL) MESC 2005

Application : External Inter-connection of computer and electronic equipment where high levels of noise interference is anticipated. Also used for precision audio,pulse or R.F. signal transmission where low distortion and high speed datarates are required.

Construction

- **Conductor** : Stranded Tinned Copper.
- **Insulation** : Colour Coded Polyethylene.
- **Assembly** : Pairs twisted with staggered lay scheme are cabled and covered with a non-hygroscopic tape. The colour code is as per table 1.
- **Screen** : An Aluminium Polyester tape with a stranded tinned copper drain wire (24 AWG) is applied either longitudinally or helically with a suitable overlap for 100% shield coverage.
- **Jacket** : Grey Coloured PVC.

Technical Data

Specification	UL 2919
Operating Temperature	- 20ûC to + 80ûC
Operating Voltage	30 V (UL)
Max. Cond. Resistance at 20ûC (½/Km)	90.9
Nom.Mutual Capacitance (pF/m)	50.8
Nom. Cond./ Shield Capacitance (pFm)	90.2
Nom. Impedance (½)	100
Nom. Velocity of Propagation (%)	66

NOTE : These cables comply with the requirements of Cat-3

COMPUTER CABLES
LOW CAPACITANCE, FOR EIA RS-232 APPLICATIONS (UL 2919)

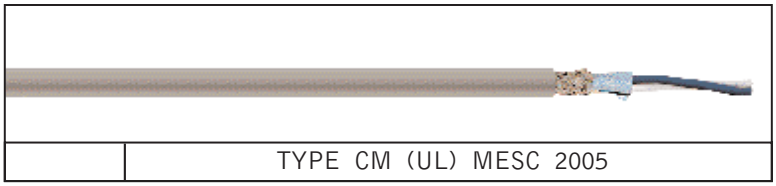
Size AWG	Order No.	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Insulation Thickness mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	12037	1222-03P24AWG-U0GY8-00	3	7 x 0.2	0.25	0.89	6.4	49
	12038	1222-04P24AWG-U0GY8-00	4	7 x 0.2	0.25	0.89	7.1	58
	12039	1222-06P24AWG-U0GY8-00	6	7 x 0.2	0.25	0.89	8.2	75
	12040	1222-07P24AWG-U0GY8-00	7	7 x 0.2	0.25	0.89	8.7	84
	12041	1222-09P24AWG-U0GY8-00	9	7 x 0.2	0.25	0.89	9.5	100
	12042	1222-12P24AWG-U0GY8-00	12	7 x 0.2	0.25	0.89	10.6	124
	12043	1222-18P24AWG-U0GY8-00	18	7 x 0.2	0.25	0.89	12.5	168
	12044	1222-25P24AWG-U0GY8-00	25	7 x 0.2	0.25	1.14	14.9	237

COLOUR CODE

TABLE 1

No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire
1	White	Blue	11	Black	Blue	21	Purple	Blue
2	White	Orange	12	Black	Orange	22	Purple	Orange
3	White	Green	13	Black	Green	23	Purple	Green
4	White	Brown	14	Black	Brown	24	Purple	Brown
5	White	Grey	15	Black	Grey	25	Purple	Grey
6	Red	Blue	16	Yellow	Blue			
7	Red	Orange	17	Yellow	Orange			
8	Red	Green	18	Yellow	Green			
9	Red	Brown	19	Yellow	Brown			
10	Red	Grey	20	Yellow	Grey			

COMPUTER CABLES
LOW CAPACITANCE, FOR EIA RS-422 APPLICATIONS (UL 2919)



TYPE CM (UL) MESC 2005

Application : External Inter-connection of computer and electronic equipment where high levels of noise interference is anticipated. Also used for precision audio,pulse or R.F. signal transmission where low distortion and high speed data rates are required.

Construction

- **Conductor** : Stranded Tinned Copper.
- **Insulation** : Colour Coded Polyethylene.
- **Assembly** : Pairs twisted with staggered lay scheme are cabled and covered with a non-hygroscopic tape. The colour code as per Table 1.
- **Screen** : An Aluminium Mylar tape is applied with a stranded tinned copper drain wire in continuous contact with aluminium part. Over the aluminium tape shield an overall braid with tinned copper wires is applied with 65% coverage.
- **Jacket** : Grey Coloured PVC.

Technical Data

Specification	UL 2919
Operating Temperature	- 20ûC to + 80ûC
Operating Voltage	30 V (UL)
Max. Cond. Resistance at 20ûC (W/Km)	90.9
Nom. Mutual Capacitance (pF/m)	50.8
Nom.Cond./Shield Capacitance (pF/m)	90.2
Nom. Impedance (½)	100
Nom. Velocity of Propagation (%)	66

COMPUTER CABLES
LOW CAPACITANCE, FOR EIA RS-422 APPLICATIONS (UL 2919)

Size AWG	Order No.	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	15097	1522-02P24AWG-U2GY8-00	2	7 x 0.2	0.89	7.4	61
	15098	1522-03P24AWG-U2GY8-00	3	7 x 0.2	0.89	7.7	69
	15099	1522-04P24AWG-U2GY8-00	4	7 x 0.2	0.89	7.9	77
	15100	1522-05P24AWG-U2GY8-00	5	7 x 0.2	0.89	8.5	88
	15101	1522-06P24AWG-U2GY8-00	6	7 x 0.2	0.89	9.5	102
	15102	1522-07P24AWG-U2GY8-00	7	7 x 0.2	0.89	9.5	108
	15103	1522-09P24AWG-U2GY8-00	9	7 x 0.2	0.89	10.4	127
	15104	1522-10P24AWG-U2GY8-00	10	7 x 0.2	0.89	10.8	136
	15105	1522-12P24AWG-U2GY8-00	12	7 x 0.2	0.89	11.6	154
	15106	1522-18P24AWG-U2GY8-00	18	7 x 0.2	0.89	13.5	205
	15107	1522-25P24AWG-U2GY8-00	25	7 x 0.2	1.14	15.9	280

COLOUR CODE

TABLE 1

No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire
1	White	Blue	11	Black	Blue	21	Purple	Blue
2	White	Orange	12	Black	Orange	22	Purple	Orange
3	White	Green	13	Black	Green	23	Purple	Green
4	White	Brown	14	Black	Brown	24	Purple	Brown
5	White	Grey	15	Black	Grey	25	Purple	Grey
6	Red	Blue	16	Yellow	Blue			
7	Red	Orange	17	Yellow	Orange			
8	Red	Green	18	Yellow	Green			
9	Red	Brown	19	Yellow	Brown			
10	Red	Grey	20	Yellow	Grey			

INDOOR TELEPHONE CABLES UNSHIELDED CATEGORY-3

Application : Used for voice, data and local area network application up to 16 MHz.

Sepecifation : UL-444, EIA/TIA 568 B

Construction :

- Conductor : Soild Annealed Bare Copper Conductor.
- Insulation : Extruded Soild polyethlene.
- Assembly : Pairs twisted with staggered lay technique. Color coding is according to ANSI/ICEA S-80-576. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder.
- Screen :
- Jacket : Grey Coloured flame retardant PVC.
- Printing legend : TYPE CM CAT3 UTP xx PR xx AWG MESC YEAR

Sl No.	Technical Parameter			Unit	Requirement	
1	Conductor Resistance			Ohm/100m at 20ûC	93.8(24AWG) 57.1(22AWG)	(Max) (Max)
2	Resistance unbalance			%	5	(Max)
3	Mutual Capacitance(@1kHz)			pF/m	66.0	(Max)
4	Characteristic Impedance(Up to MHz)			Ohm	100+/-15	(Nom)
5	Attenuation			dB/100m		
a)	At frequency of	1	MHz		2.6	(Max)
b)	At frequency of	4	MHz		5.6	(Max)
c)	At frequency of	8	MHz		8.5	(Max)
d)	At frequency of	10	MHz		9.7	(Max)
e)	At frequency of	16	MHz		13.1	(Max)
6	Near end Cross Talk			dB/305m		
a)	At frequency of	1	MHz		41	(Min)
b)	At frequency of	4	MHz		32	(Min)
c)	At frequency of	8	MHz		27	(Min)
d)	At frequency of	10	MHz		26	(Min)
e)	At frequency of	16	MHz		23	(Min)

INDOOR TELEPHONE CABLE UNSHIELDED CATEGORY-3

Size AWG	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	M762-02P24AWG-U0GY8-00	2	1X0.5	0.33	4.3	20
24	M762-03P24AWG-U0GY8-00	3	1X0.5	0.58	4.9	30
24	M762-06P24AWG-U0GY8-00	6	1X0.5	0.58	6.2	50
24	M762-12P24AWG-U0GY8-00	12	1X0.5	0.58	8.1	90
24	M762-18P24AWG-U0GY8-00	18	1X0.5	0.58	9.5	125
24	M762-25P24AWG-U0GY8-00	25	1X0.5	0.69	11.0	165
24	M762-50P24AWG-U0GY8-00	50	1X0.5	0.81	15.1	315
24	M762-75P24AWG-U0GY8-00	75	1X0.5	0.81	18.0	445
24	M762-100P24AWG-U0GY8-00	100	1X0.5	1.14	21.1	615
24	M762-150P24AWG-U0GY8-00	150	1X0.5	1.14	25.2	875
24	M762-200P24AWG-U0GY8-00	200	1X0.5	1.14	28.7	1135
22	M762-02P22AWG-U0GY8-00	2	1X0.64	0.58	5.3	35
22	M762-03P22AWG-U0GY8-00	3	1X0.64	0.58	5.5	40
22	M762-06P22AWG-U0GY8-00	6	1X0.64	0.58	7.0	70
22	M762-12P22AWG-U0GY8-00	12	1X0.64	0.58	9.1	125
22	M762-18P22AWG-U0GY8-00	18	1X0.64	0.69	11.1	185
22	M762-25P22AWG-U0GY8-00	25	1X0.64	0.81	12.7	250
22	M762-50P22AWG-U0GY8-00	50	1X0.64	0.81	17.1	460
22	M762-75P22AWG-U0GY8-00	75	1X0.64	1.14	21.2	700
22	M762-100P22AWG-U0GY8-00	100	1X0.64	1.14	24.0	905
22	M762-150P22AWG-U0GY8-00	150	1X0.64	1.14	28.7	1310
22	M762-200P22AWG-U0GY8-00	200	1X0.64	1.14	32.7	1710

COLOUR CODE

Pairs	a WIRE		b WIRE	
	Color of Insulation	Color of the Band	Color of Insulation	Color of the Band
1	White	Blue	Blue	White
2	White	Orange	Orange	White
3	White	Green	Green	White
4	White	Brown	Brown	White
5	White	Grey	Grey	White
6	Red	Blue	Blue	Red
7	Red	Orange	Orange	Red
8	Red	Green	Green	Red
9	Red	Brown	Brown	Red
10	Red	Grey	Grey	Red
11	Black	Blue	Blue	Black
12	Black	Orange	Orange	Black
13	Black	Green	Green	Black
14	Black	Brown	Brown	Black
15	Black	Grey	Grey	Black
16	Yellow	Blue	Blue	Yellow
17	Yellow	Orange	Orange	Yellow
18	Yellow	Green	Green	Yellow
19	Yellow	Brown	Brown	Yellow
20	Yellow	Grey	Grey	Yellow
21	Violet	Blue	Blue	Violet
22	Violet	Orange	Orange	Violet
23	Violet	Green	Green	Violet
24	Violet	Brown	Brown	Violet
25	Violet	Grey	Grey	Violet

INDOOR TELEPHONE CABLES SHIELDED CATEGORY-3

Application : Used for voice, data and local area network application up to 16 MHz.

Sepecifation : UL-444, EIA/TIA 568 B

Construction :

- Conductor : Soild Annealed Bare Copper Conductor.
- Insulation : Extruded Soild polyethlene.
- Assembly : Pairs twisted with staggered lay technique. Color coding is according to ANSI/ICEA S-80-576. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder. An aluminum Mylar tape is appleid with an overlap for 100% coverage with a tinned copper drain wire.
- Jacket : Grey Coloured flame retardant PVC.
- Printing legend : TYPE CM SHIELDED CAT3 UTP xx PR xx AWG MESC YEAR

Sl No.	Technical Parameter			Unit	Requirement	
1	Conductor Resistance			Ohm/100m at 20ûC	93.8(24AWG) 57.1(22AWG)	(Max) (Max)
2	Resistance unbalance			%	5	(Max)
3	Mutual Capacitance(@1kHz)			pF/m	66.0	(Max)
4	Characteristic Impedance(Up to MHz)			Ohm	100±15	(Nom)
5	Attenuation			dB/100m		
a)	At frequency of	1	MHz		2.6	(Max)
b)	At frequency of	4	MHz		5.6	(Max)
c)	At frequency of	8	MHz		8.5	(Max)
d)	At frequency of	10	MHz		9.7	(Max)
e)	At frequency of	16	MHz		13.1	(Max)
6	Near end Cross Talk			dB/305m		
a)	At frequency of	1	MHz		41	(Min)
b)	At frequency of	4	MHz		32	(Min)
c)	At frequency of	8	MHz		27	(Min)
d)	At frequency of	10	MHz		26	(Min)
e)	At frequency of	16	MHz		23	(Min)

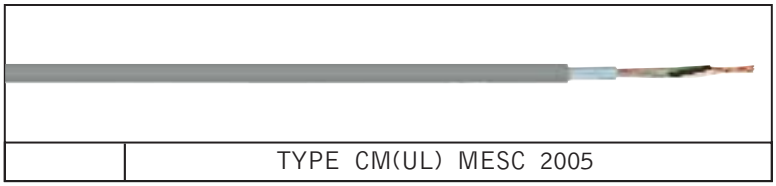
INDOOR TELEPHONE CABLES SHIELDED CATEGORY

Size AWG	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Nominal Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
24	M862-02P24AWG-U0GY8-00	2	1X0.5	0.33	4.9	30
24	M862-03P24AWG-U0GY8-00	3	1X0.5	0.58	5.1	35
24	M862-06P24AWG-U0GY8-00	6	1X0.5	0.58	6.4	55
24	M862-12P24AWG-U0GY8-00	12	1X0.5	0.58	8.4	95
24	M862-18P24AWG-U0GY8-00	18	1X0.5	0.58	9.9	130
24	M862-25P24AWG-U0GY8-00	25	1X0.5	0.69	11.7	185
24	M862-50P24AWG-U0GY8-00	50	1X0.5	0.81	15.6	325
24	M862-75P24AWG-U0GY8-00	75	1X0.5	0.81	18.7	465
24	M862-100P24AWG-U0GY8-00	100	1X0.5	1.14	21.9	640
24	M862-150P24AWG-U0GY8-00	150	1X0.5	1.14	26.2	910
24	M862-200P24AWG-U0GY8-00	200	1X0.5	1.14	29.8	1180
22	M862-02P22AWG-U0GY8-00	2	1X0.64	0.58	5.7	40
22	M862-03P22AWG-U0GY8-00	3	1X0.64	0.58	5.9	50
22	M862-06P22AWG-U0GY8-00	6	1X0.64	0.58	7.5	75
22	M862-12P22AWG-U0GY8-00	12	1X0.64	0.58	9.8	140
22	M862-18P22AWG-U0GY8-00	18	1X0.64	0.69	12.2	210
22	M862-25P22AWG-U0GY8-00	25	1X0.64	0.81	13.7	270
22	M862-50P22AWG-U0GY8-00	50	1X0.64	0.81	18.5	495
22	M862-75P22AWG-U0GY8-00	75	1X0.64	1.14	22.8	750
22	M862-100P22AWG-U0GY8-00	100	1X0.64	1.14	25.9	965
22	M862-150P22AWG-U0GY8-00	150	1X0.64	1.14	31.1	1395
22	M862-200P22AWG-U0GY8-00	200	1X0.64	1.14	35.4	1815

COLOUR CODE

Pairs	a WIRE		b WIRE	
	Color of Insulation	Color of the Band	Color of Insulation	Color of the Band
1	White	Blue	Blue	White
2	White	Orange	Orange	White
3	White	Green	Green	White
4	White	Brown	Brown	White
5	White	Grey	Grey	White
6	Red	Blue	Blue	Red
7	Red	Orange	Orange	Red
8	Red	Green	Green	Red
9	Red	Brown	Brown	Red
10	Red	Grey	Grey	Red
11	Black	Blue	Blue	Black
12	Black	Orange	Orange	Black
13	Black	Green	Green	Black
14	Black	Brown	Brown	Black
15	Black	Grey	Grey	Black
16	Yellow	Blue	Blue	Yellow
17	Yellow	Orange	Orange	Yellow
18	Yellow	Green	Green	Yellow
19	Yellow	Brown	Brown	Yellow
20	Yellow	Grey	Grey	Yellow
21	Violet	Blue	Blue	Violet
22	Violet	Orange	Orange	Violet
23	Violet	Green	Green	Violet
24	Violet	Brown	Brown	Violet
25	Violet	Grey	Grey	Violet

LOW CAPACITANCE TELEPHONE / DATA CABLE
NEC TYPE CM (UL 444)



TYPE CM(UL) MESC 2005

Application : Can be used as a service and installation cable in data transmission applicatios, computer, telephone etc.

Specification: UL - 444

Construction

- **Conductor** : Solid Annealed Bare Copper Conductor.
- **Insulation** : Polyethylene core insulation.
- **Assembly** : Pairs twisted with staggered lay technique. Color coding is as per table 1. Twisted pairs are bundled into units of 25 pairs (subunits comprise 12/13 pairs) and cabled and covered with a polyester tape binder.
- **Shield** : The assebly is shielded with Aluminum backed mylar tape with a tinned copper drain wire in contact with the aluminum part of the shield.
- **Jacket** : Grey Coloured flame retardant PVC.

Technical Data

1. Conductor Dia (mm) (AWG)	0.4 26	0.5 24	0.64 22	0.9 19
2. Conductor resistance at 20ûC (½/Km)	144.4	90.2	57.1	28.5
3. Average Mutual Capacitance at 1 KHz(nf/Km)	52			
4. Nom. attenuation at 150 KHz(dB/Km)	11.4	8.30	6.2	4.40
5. Impedance (½)	100±15%			
6. Min. Insulation resistance (M½-Km)	5000			
7. Dielectric Strength (KV / 2 Sec.)	2500			
8. Operating Temperature.	-20ûC to + 80ûC			

* These cables meet the performance requirement of CAT3 cables as per EIA/TIA 568-A. However the color code of the insulation slightly differs from that of EIA/TIA 568-A.

LOW CAPACITANCE TELEPHONE / DATA CABLE
NEC TYPE CM (UL 444)

Size AWG	Order No.	MESC Code	Pairs Nos.	Strands x Dia. No. x mm	Jacket Thickness mm	Approx. O. D. mm	Approx. Weight Kg/Km
26	32135	3262-06P00040-U0GY8-00	6	1x0.4	0.58	5.3	35
	32136	3262-12P00040-U0GY8-00	12	1x0.4	0.58	7.0	60
	32137	3262-18P00040-U0GY8-00	18	1x0.4	0.58	8.2	80
	32138	3262-25P00040-U0GY8-00	25	1x0.4	0.58	9.5	110
	32139	3262-50P00040-U0GY8-00	50	1x0.4	0.81	13.4	210
	32140	3262-75P00040-U0GY8-00	75	1x0.4	0.81	16.0	295
	32141	3262-100P0040-U0GY8-00	100	1x0.4	0.81	18.2	385
	32142	3262-150P0040-U0GY8-00	150	1x0.4	1.14	22.6	585
	32143	3262-200P0040-U0GY8-00	200	1x0.4	1.14	25.7	755
24	32144	3262-06P00050-U0GY8-00	6	1x0.5	0.58	6.0	50
	32145	3262-12P00050-U0GY8-00	12	1x0.5	0.58	7.9	85
	32146	3262-18P00050-U0GY8-00	18	1x0.5	0.58	9.4	115
	32147	3262-25P00050-U0GY8-00	25	1x0.5	0.69	11.1	160
	32148	3262-50P00050-U0GY8-00	50	1x0.5	0.81	15.4	295
	32149	3262-75P00050-U0GY8-00	75	1x0.5	0.81	18.4	420
	32150	3262-100P0050-U0GY8-00	100	1x0.5	1.14	21.7	580
	32151	3262-150P0050-U0GY8-00	150	1x0.5	1.14	26.0	835
	32152	3262-200P0050-U0GY8-00	200	1x0.5	1.14	29.7	1080
22	32153	3262-06P00064-U0GY8-00	6	1x0.64	0.58	7.4	75
	32154	3262-12P00064-U0GY8-00	12	1x0.64	0.69	10.1	130
	32155	3262-18P00064-U0GY8-00	18	1x0.64	0.81	12.3	190
	32156	3262-25P00064-U0GY8-00	25	1x0.64	0.81	14.2	250
	32157	3262-50P00064-U0GY8-00	50	1x0.64	1.14	20.0	495
	32158	3262-75P00064-U0GY8-00	75	1x0.64	1.14	24.0	700
	32159	3262-100P0064-U0GY8-00	100	1x0.64	1.14	27.3	910
	32160	3262-150P0064-U0GY8-00	150	1x0.64	1.40	33.5	1355
	32161	3262-200P0064-U0GY8-00	200	1x0.64	1.40	38.2	1765
19	32162	3262-06P00090-U0GY8-00	6	1x0.91	0.58	9.5	125
	32163	3262-12P00090-U0GY8-00	12	1x0.91	0.81	13.4	240
	62164	3262-18P00090-U0GY8-00	18	1x0.91	0.81	16.0	340
	32165	3262-25P00090-U0GY8-00	25	1x0.91	0.81	18.5	450
	32166	3262-50P00090-U0GY8-00	50	1x0.91	1.14	26.1	890
	32167	3262-75P00090-U0GY8-00	75	1x0.91	1.14	31.4	1285
	32168	3262-100P0090-U0GY8-00	100	1x0.91	1.52	36.7	1745

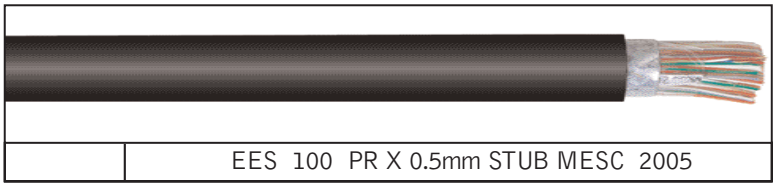
COLOUR CODE

TABLE 1

No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire	No. of pairs	a-wire	b-wire
1	White	Blue	9	Red	Brown	17	Yellow	Orange
2	White	Orange	10	Red	Grey	18	Yellow	Green
3	White	Green	11	Black	Blue	19	Yellow	Brown
4	White	Brown	12	Black	Orange	20	Yellow	Grey
5	White	Grey	13	Black	Green	21	Violet	Blue
6	Red	Blue	14	Black	Brown	22	Violet	Orange
7	Red	Orange	15	Black	Grey	23	Violet	Green
8	Red	Green	16	Yellow	Blue	24	Violet	Brown
						25	Violet	Grey

TELEPHONE CABLE
EES TYPE (WITHOUT MOISTURE BARRIER)

Specification : STC, MAT 1011 Type : EES



EES 100 PR X 0.5mm STUB MESC 2005

Application : Stub Cable is generally used for connection to cabinet and distribution pillar terminal blocks

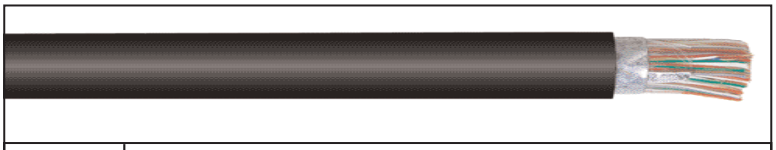
Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Solid plyethylene to ASTM D1248, Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1011.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Subunits shall be assembled as detailed in MAT 1011 to form the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : "The word "STUB" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

DIMENSIONAL DETAILS

SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31001	3162-10P00050-U0BK8-00	10X2X0.5	9.7	87	1000	800
	31002	3162-20P00050-U0BK8-00	20X2X0.5	12.2	146	1000	900
	31003	3162-50P00050-U0BK8-00	50X2X0.5	17.2	311	1000	1100
	31004	3162-100P0050-U0BK8-00	100X2X0.5	23.3	594	1000	1250

TELEPHONE CABLE
EES TYPE (WITH MOISTURE BARRIER)



EES 100 PR X 0.5mm STUB MESC 2005

Application : Stub Cable is generally used for connection to cabinet and distribution pillar terminal blocks

Specification : STC, MAT 1011 Type : EES

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Solid plyethylene to ASTM D1248, Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1011.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Su units shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1011 to form the cable core, alongwith the required spare pairs.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- **Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : "The word "STUB" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

DIMENSIONAL DETAILS

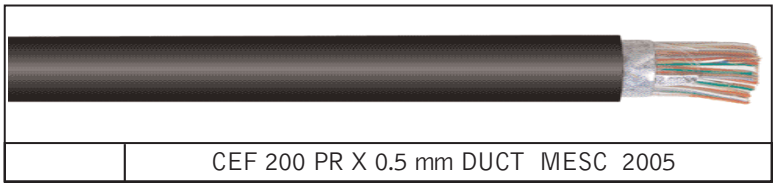
SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31005	3162-10P00050-UMBK8-00	10X2X0.5	11.1	113	1000	800
	31006	3162-20P00050-UMBK8-00	20X2X0.5	13.7	179	1000	1000
	31007	3162-50P00050-UMBK8-00	50X2X0.5	19.0	362	1000	1100
	31008	3162-100P0050-UMBK8-00	100X2X0.5	25.5	669	1000	1400
	31009	3162-200P0050-UMBK8-00	200X2X0.5	34.0	1234	1000	1600

TELEPHONE CABLE
EES TYPE
TRANSMISSION CHARACTERISTICS

Max. Conductor Resistance (20¼ C)	Ohms/Km Ohms/Km	Average Ind	92 96
Max. Resistance Unbalance	% %	Average Ind	0.75 2.5
Min. Insulation Resistance (20¼ C)	MOhm-Km		10000
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Ind	44+/-2 50
Max. Capacitance Unbalance (1000+/-200Hz) Pair to Pair (within sub-unit)	pF/500m	Average	22
		Ind	150
Pair to Pair (between adjacent sub-units or units)	pF/500m	Average Ind	20 50
Pair to earth capacitance unbalance	pF/Km	Average Ind	500 2500
Dielectric Strength (Volts DC for 3 Sec. min.)		Cond-Cond Cond-Screen	2000 5000
Attenuation (max) Frequency 1 KHz 1 MHz	dB/Km		 1.45 22.6
Min. Near End Cross-talk (99% pair combination) Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		 85 80 67 48
Min. NEXT & ELEFEXT Ind. Power Sums Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		NEXT / ELEFEXT 70 / 74 67 / 71 55 / 58 37 / 36

TELEPHONE CABLE (DUCT), FOAM/SKIN, FILLED CEF

Specification : STC MAT 1101 Type : CEF



CEF 200 PR X 0.5 mm DUCT MESC 2005

Application : Used for primary and secondary underground (Duct) distribution networks.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Dual insulation of foam-skin polyethylene to ASTM D1248. Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1101.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a colored binder. Subunits shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1101 to form the cable core, along with required spare pairs.
- **Core Filling** : The water resistant filling compound shall be applied to the air space within the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- **Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : The word "DUCT" shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

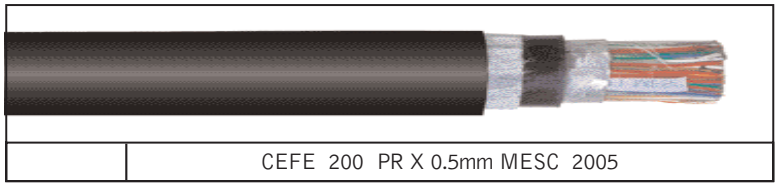
TELEPHONE CABLE (DUCT), FOAM/SKIN, FILLED CEF

DIMENSIONAL DETAILS

SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.4	31010	3163-20J00040-UMBK8-00	20X2X0.4	11.7	177	1000	800
	31011	3163-50J00040-UMBK8-00	50X2X0.4	15.9	337	1000	1100
	31012	3163-100J0040-UMBK8-00	100X2X0.4	20.5	611	1000	1250
	31013	3163-200J0040-UMBK8-00	200X2X0.4	27.5	1079	1000	1400
0.5	31014	3163-10J00050-UMBK8-00	10X2X0.5	10.9	154	1000	800
	31015	3163-20J00050-UMBK8-00	20X2X0.5	13.5	239	1000	900
	31016	3163-50J00050-UMBK8-00	50X2X0.5	18.6	482	1000	1100
	31017	3163-100J0050-UMBK8-00	100X2X0.5	24.9	891	1000	1400
	31018	3163-200J0050-UMBK8-00	200X2X0.5	33.1	1612	1000	1600
0.65	31019	3163-20J00065-UMBK8-00	20X2X0.65	16.3	352	1000	1000
	31020	3163-50J00065-UMBK8-00	50X2X0.65	23.1	748	1000	1250
	31021	3163-100J0065-UMBK8-00	100X2X0.65	31.3	841	600	1250
	31022	3163-200J0065-UMBK8-00	200X2X0.65	42.3	1588	600	1600
0.9	31023	3163-20J00090-UMBK8-00	20X2X0.9	21.0	361	600	1100
	31024	3163-50J00090-UMBK8-00	50X2X0.9	31.0	813	600	1250
	31025	3163-100J0090-UMBK8-00	100X2X0.9	41.9	1559	600	1600
	31026	3163-150J0090-UMBK8-00	150X2X0.9	50.3	2263	600	1800

TELEPHONE CABLE (DIRECT BURIED)
FOAM/SKIN, FILLED
CEFE

Specification : STC MAT 1101 Type : CEFE



Application : Used for primary and secondary underground (Direct Buried) distribution networks.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Dual insulation of foam-skin polyethylene to ASTM D1248 Type 3, Category 4 or 5, grade E8 or E9.
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1101.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Ten pairs shall be assembled together to form a subunit and each subunit shall have a colored binder. Subunits shall be assembled to form units of 50 or 100 pairs depending on the cable size. Such units shall be assembled as detailed in MAT 1101 to form the cable core, along with required spare pairs.
- **Core Filling** : The water resistant filling compound shall be applied to the air space within the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with an overlap of 6mm or 10% of the core circumference whichever is greater.
- **First (inner) Sheath** : The sheath shall be an extruded Black low density polyethylene or medium density polyethylene to ASTM D1248, Type 1 or 2, Class C, Category 4 or 5, grade J3.
- **Inter Sheath Water Blocking Material** : A swellable material shall be applied between the inner and outer sheath which shall prevent water ingress between the sheaths.
- **Second (Outer) Sheath** : The sheath shall be an extruded black low density polyethylene to ASTM D1248, Type 1 or 2, class Category 4 or 5, Grade J3.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : The telephone handset symbol shall be durably marked on the sheath at longitudinal intervals of not more than 1 mtr. Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

TELEPHONE CABLE (DIRECT BURIED)
FOAM/SKIN, FILLED
CEFE

DIMENSIONAL DETAILS

SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.4	31028	3163-20J00040-UMBK8-0E	20X2X0.4	15.6	280	1000	1000
	31029	3163-50J00040-UMBK8-0E	50X2X0.4	19.8	472	1000	1100
	31030	3163-100J0040-UMBK8-0E	100X2X0.4	24.4	775	1000	1400
	31031	3163-200J0040-UMBK8-0E	200X2X0.4	31.5	1340	1000	1600
0.5	31032	3163-10J00050-UMBK8-0E	10X2X0.5	14.8	251	1000	1000
	31033	3163-20J00050-UMBK8-0E	20X2X0.5	17.4	366	1000	1100
	31034	3163-50J00050-UMBK8-0E	50X2X0.5	22.5	639	1000	1250
	31035	3163-100J0050-UMBK8-0E	100X2X0.5	28.8	1064	1000	1400
	31036	3163-200J0050-UMBK8-0E	200X2X0.5	37.0	1913	1000	1800
0.65	31037	3163-20J00065-UMBK8-0E	20X2X0.65	20.2	490	1000	1100
	31038	3163-50J00065-UMBK8-0E	50X2X0.65	27.0	929	1000	1400
	31039	3163-100J0065-UMBK8-0E	100X2X0.65	35.2	1059	600	1600
	31040	3163-200J0065-UMBK8-0E	200X2X0.65	46.2	1759	600	1600
0.9	31041	3163-20J00090-UMBK8-0E	20X2X0.9	24.9	470	600	1100
	31042	3163-50J00090-UMBK8-0E	50X2X0.9	34.9	961	600	1400
	31043	3163-100J0090-UMBK8-0E	100X2X0.9	45.8	1729	600	1600
	31044	3163-150J0090-UMBK8-0E	150X2X0.9	54.2	2465	600	1800

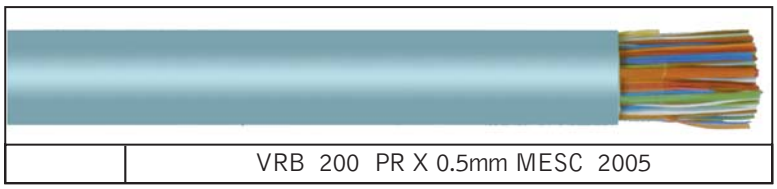
TELEPHONE CABLE (DUCT) & (DIRECT BURIED), FOAM/SKIN, FILLED
CEF & CEFE

TRANSMISSION CHARACTERISTICS

Conductor Size	mm		0.4	0.5	0.65	0.9
Max. Conductor Resistance (20¼ C)	Ohms/Km Ohms/Km	Average Ind	144 150	92 96	54 57	28 30
Max. Resistance Unbalance	% %	Average Ind	1.0 2.5	0.75 2.5	0.75 2.0	0.75 2.0
Min. Insulation Resistance (20¼ C)	MOhm-Km		2500			
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Ind	44+/-2 50			
Max. Capacitance Unbalance (1000+/-200Hz) Pair to pair (within sub-unit)	pF/500m	Average Ind	25 150			
Pair to Pair (between adjacent sub-units or units)	pF/500m	Average Ind	17 55			
Pair to Earth	pF/Km	Average Ind	500 2500			
Dielectric Strength (Volts DC for 3 Sec. mini.)		Cond-Cond Cond-Shld	2400 5000	2400 5000	3000 10000	3600 10000
Attenuation (max.) Frequency 1 KHz 1 MHz	dB/Km		1.81 25.7	1.45 21	1.1 16.3	0.8 13.6
Min. Near end Cross-talk (99% pair combination) Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		85 80 67 48			
Min. NEXT & ELEFEXT Ind. Power Sums Frequency 1 KHz 12 KHz 80 KHz 1000 KHz	dB/Km		NEXT 70 67 55 37		ELEFEXT 74 71 58 36	

INDOOR CABLE
VRB

Specification : STC MAT 1401 Type : VRB



VRB 200 PR X 0.5mm MESC 2005

Application : Used for indoors installation in the telecommunication network.

Construction

- **Conductor** : Solid annealed plain copper to ASTM B3.
- **Insulation** : Solid layer of PVC to BS : 6746, TYPE TI1
- **Conductor Identification** : Insulated conductors shall be fully colour coded in accordance with MAT 1401.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with a lay of 30 to 200mm. Ten pairs shall be assembled together to form a subunit and each subunit shall have a coloured binder. Upto 100 pair cables, subunits shall be assembled to form the cable core. For cables more than 100 pairs, subunits shall be assembled as 50 pair unit and such units shall form the cable core.
- **Core Wrapping** : A non-hygroscopic dielectric tape shall be applied longitudinally or helically with an overlap of 5 mm min..
- **Sheath** : The sheath shall be an extruded GREY colour HOLOGEN FREE FLAME RETARDANT material. A rip cord of non-metallic, non-hygroscopic material shall be laid under the sheath, parallel to the cable core.
- **Identification** : A plastic tape durably marked with STC, MESC and year of manufacture shall be placed longitudinally under the core wrap.
- **Sheath Marking** : Sequentially numbered length marking shall be placed on the sheath at an interval of one meter.

INDOOR CABLE
VRB

TRANSMISSION CHARACTERISTICS

Conductor Resistance (20˚C)	Ohms/Km Ohms/Km	Max. Average Max. Ind	92 96
Resistance Unbalance	% %	Max. Average Max. Ind	0.75 2.5
Insulation Resistance	MOhm-Km	Min.	500
Mutual Capacitance (1000+/-200Hz)	nF/Km nF/Km	Average Max. Ind	75+/-2 90
Capacitance Unbalance (1000+/-200Hz) Pair to Pair (within sub-unit)	pF/500m	Max. Average Max. Ind	22 150
Pair to Pair (between adjacent sub-units or units)	pF/500m	Max. Average Max. Ind	20 50
Dielectric Strength (for minimum 60 Sec.)	Volts dC	Cond-Cond	1500

DIMENSIONAL DETAILS

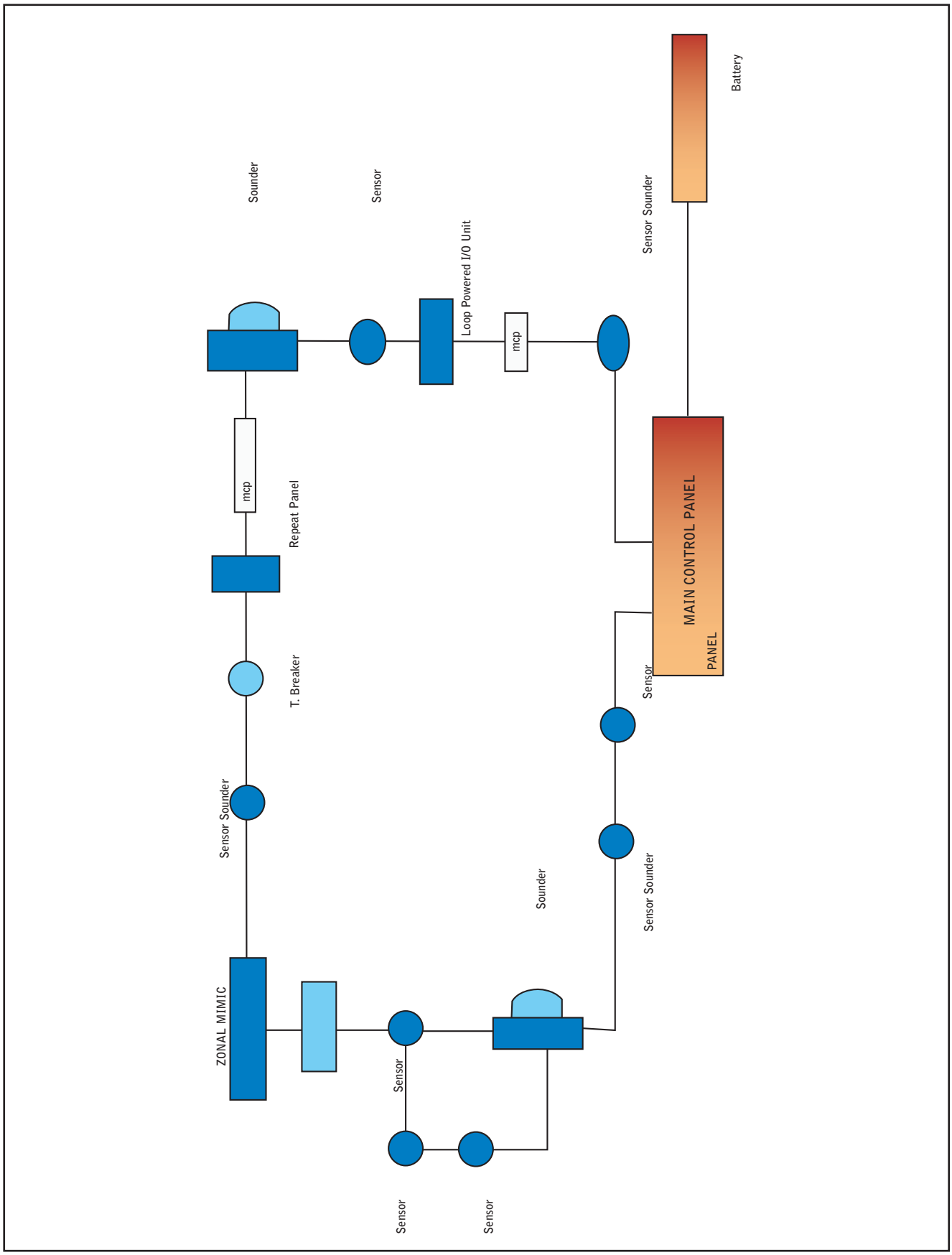
SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Gross Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.5	31046	3161-10P00050-U0GY8-0H	10X2X0.5	8.2	86	1000	710
	31047	3161-20P00050-U0GY8-0H	20X2X0.5	10.9	157	1000	800
	31048	3161-30P00050-U0GY8-0H	30X2X0.5	12.9	221	1000	900
	31049	3161-50P00050-U0GY8-0H	50X2X0.5	16.4	361	1000	1100
	31050	3161-100P0050-U0GY8-0H	100X2X0.5	20.0	678	1000	1250
	31051	3161-150P0050-U0GY8-0H	150X2X0.5	26.9	992	500	1100
	31052	3161-200P0050-U0GY8-0H	200X2X0.5	33.0	1305	500	1250

SYSTEM CABLES

MESC

SPECIALIZED CABLES

FIRE ALARM SYSTEM



FIRE ALARM SYSTEM

FIRE ALARM CABLES (SHIELDED & UNSHIELDED) 105˚C (UL 1424)
POWER LIMITED FIRE PROTECTIVE SIGNALLING CIRCUIT CABLES 300 V

	FIRE ALARM CABLE (UL) FPLR MESC 2005

Application : Can be used as a fixed wiring within buildings in accordance with NEC Article 760 Power limited circuits. Also suitable as a power limited circuit cable in accordance with NEC Article 725 class 2 or 3 circuits.

Construction

- Conductor : Solid Annealed Copper Conductor as per ASTM B 3.
- Insulation : Extruded Solid PVC rated 105ûC.
- Assembly : Colour coded insulated cores cabled. When the assembly is shielded an Aluminium Mylar Tape is used with a stranded tinned copper drain wire in contact with Aluminium part of the screen.
- Jacket : Red Coloured PVC jacked passes the IEEE- 383 Flame Test.

COLOUR CODE

No. of Conductors	Colour	No. of Conductors	Colour
1	Black	4	Blue
2	Red	5	Brown
3	Yellow	6	Orange

UNSHIELDED CABLES

Order No.	MESC CODE	Size AWG	CORES NO.	Strands X diameter No. X mm	Insulation thickness mm	Sheath thickness mm	Approx. O. D. mm	Approx. Weight Kg / Km	Packing
41001	4111-02C18AWG-U 0RD6-00	18	2	1 x 1.02	0.38	0.89	5.7	42	C,6
41002	4111-02C16AWG-U 0RD6-00	16	2	1 x 1.29	0.38	0.89	6.2	55	C,6
41003	4111-02C14AWG-U 0RD6-00	14	2	1 x 1.63	0.51	1.01	7.7	84	8,6
41004	4111-02C12AWG-U 0RD6-00	12	2	1 x 2.05	0.51	1.01	8.6	113	8,6

SHIELDED CABLES

Order No.	MESC CODE	Size AWG	CORES NO.	Strands X diameter No. X mm	Insulation thickness mm	Sheath thickness mm	Approx. O. D. mm	Approx. Weight Kg / Km	Packing
42001	4211-02C18AWG-U 0RD6-00	18	2	1 x 1.02	0.38	0.89	6.1	53	C,6
42002	4211-02C16AWG-U 0RD6-00	16	2	1 x 1.29	0.38	0.89	6.6	66	C,6
42003	4211-02C14AWG-U 0RD6-00	14	2	1 x 1.63	0.51	1.01	8.1	106	8,6
42004	4211-02C12AWG-U 0RD6-00	12	2	1 x 2.05	0.51	1.01	9.0	136	8,6
42005	4211-04C18AWG-U 0RD6-00	18	4	1 x 1.02	0.38	0.89	6.8	78	8,6
42006	4211-04C16AWG-U 0RD6-00	16	4	1 x 1.29	0.38	0.89	7.7	107	8,6
42007	4211-04C14AWG-U 0RD8-00	14	4	1 x 1.63	0.51	1.01	9.3	163	8
42008	4211-04C12AWG-U 0RD8-00	12	4	1 x 2.05	0.51	1.01	10.8	233	8

Packing : 6 Ð 1000 ft Reel.
C Ð 1000 mtr Reel.
8 Ð 1000 mtr Drum.

SECURITY SYSTEM

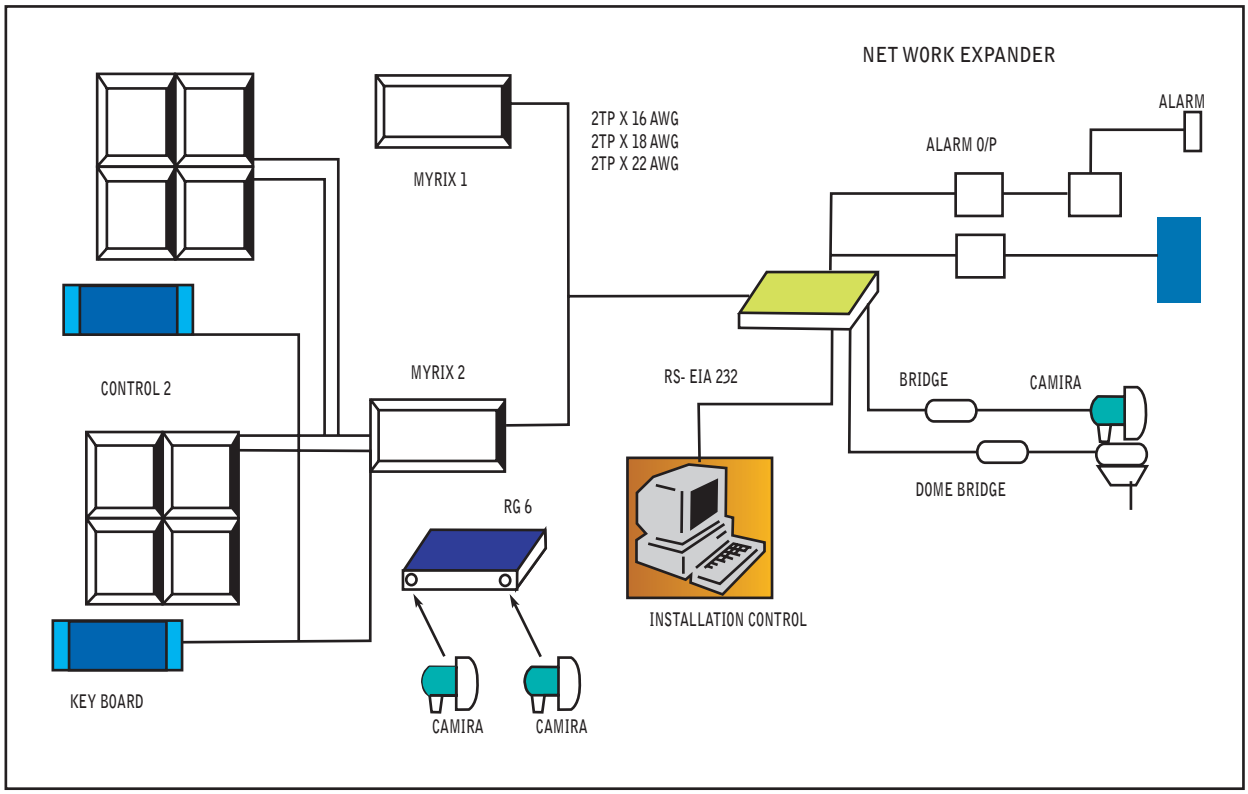
Access control & CCTV

This system covers two main activities like Access Control & Closed Circuit Television (CCTV). The Video Surveillance System operates on closed loop basis.

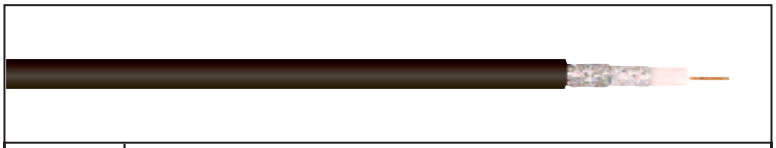
Surveillance System are used in many different applications where reliable Video Surveillance is required such as traffic monitoring centers, large commercial buildings, retail shops, city centers, banks & supermarkets.

(CCTV) Surveillance Systems can observe several patients at once in a hospital recovery room. CCTV permits an individual to watch many areas from one central location.

MESC provides the most widely used paired and coaxial cables used for such systems.



SECURITY SYSTEM
ANALOG VIDEO CABLES



CO-AXIAL CABLE 75 OHMS MESC 2005

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

RG-59/ U NEC TYPE CM

Order No.	Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
			Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
		Kg.			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
28001	1000 ft in Reel 2833-01CRG59U-U3BK6-00 1000 m in Drum 2833-01CRG59U-U3BK8-00	10.4 34	CUWLD	20	1 X 0.81	147.2	FPE	3.71	100% AMT and 40% Al wire braid 55.8 Ω / Km	PVC BLACK	6.16	75	53.1	82	1 10 50 100 200 400 700 900 1000	2.0 3.3 5.9 8.2 11.5 16.1 21.3 24.3 25.9

RG-6 / U NEC TYPE CM

Order No.	Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
			Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
		Kg			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
21004	1000 ft in Reel 2163-01CRG6/U-U2BK6-00 1000 m in Drum 2163-01CRG6/U-U2BK8-00	17.2 56.4	BC	18	1 X 1.02	21.4	FPE	4.57	100% AMT and 61% Tinned copper braid 16.4 Ω / Km	PVC BLACK	7.0	75	53.1	82	1 10 50 100 200 400 700 900 1000	1.0 2.3 4.9 6.6 9.2 13.1 17.4 20.0 21.3

RG-11 / U

Order No.	Packing length and MESC CODE	Approx. Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
			Material	AWG	Strands X diameter	Nom. D.C. Res. at 20û C	Matl	Dia.	Material & coverage Nom. shield resistance	Matl	Dia					
		Kg			No. x mm	ohm/Km		mm			mm	ohm	pF/m	%	MHz	db / 100m
21006	1000 ft in Reel 2163-01CRG11U-U2BK6-00 1000 m in Drum 2163-01CRG11U-U2BK8-00	33.2 109	BC	14	1 X 1.63	8.5	FPE	7.24	100% AMT and 61% Tinned copper braid 9.8 Ω / Km	PVC BLACK	10-29	75	52.8	84	1 10 50 100 200 400 700 900 1000	0.6 1.6 3.0 4.3 5.3 7.6 10.8 13.1 14.1

SECURITY SYSTEM
CATV CABLES

CO-AXIAL CABLE 75 OHMS MESC 2000

LEGEND:		
BC	⇨	Bare Copper
TC	⇨	Tinned Copper
CUWLD	⇨	Copper Covered Steel (copperweld)
PE	⇨	Solid Polyethylene
FPE	⇨	Cellular (Foam) Polyethylene
AL	⇨	Aluminum
AMT	⇨	Aluminum Mylar Tape
PVC	⇨	Polyvinyl Chloride

RG-59/U NEC TYPE CM

Order No.	Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20ûC ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
29001	1000 ft in Reel 2963-01CRG59U-U1BK6-00 1000 m in Drum 2963-01CRG59U-U1BK8-00	11 36	BC	20	1 X 0.81	34	FPE	3.71	Bare Copper Braid 95% Coverage braid 8.5 Ω/ Km	PVC BLACK	6.16	75	56.8	78	1 10 50 100 200 400 500 1000	2.0 3.3 6.2 8.9 12.8 18.4 20.7 29.8

RG6/U NEC TYPE CM

Order No.	Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
21005	1000 ft in Reel 2A63-01CRG6/U-U1BK6-00 1000 m in Drum 2A63-01CRG6/U-U1BK8-00	22.2 72.8	BC	18	1 X 1.02	24.0	FPE	4.57	2 Bare copper Braid 98% Coverage 6 .6 Ω/ Km	PVC BLACK	7.35	75	53.1	78	1 10 50 100 200 400 700 900 1000	0.7 2.3 5.6 8.2 11.8 17.4 23.6 27.2 28.9

RG11/U NEC TYPE CM

Order No.	Packing length and MESC CODE	Approx Weight	Conductor				Insulation		Shield	Jacket		Nom. Imp.	Nom. Cap.	Nom. vel of prop.	Nominal Attenuation	
		Kg.	Material	AWG	Strands X diameter No. x mm	Nom. D.C. Res. at 20û C ohm/Km	Matl	Core Dia. mm	Material & coverage Nom. shield resistance	Matl	Dia. mm	ohm	pF/m	%	MHz	db/ 100m
21002	1000 ft in Reel 2963-01CRG11U-U1BK6-00 1000 m in Drum 2963-01CRG11U-U1BK8-00	37.8 124	BC	14	1 X 1.63	8.5	FPE	7.24	Bare copper Braid 97% Coverage 3 .6 Ω/ Km	Polyethylene BLACK	10.29	75	52.8	84	1 10 50 100 200 400 700 900 1000	0.6 1.1 3.0 4.3 6.2 9.5 13.5 15.7 17.1

SECURITY SYSTEM
EI RS-485 APPLICATIONS

22 AWG (7 X 30)

Description : Stranded tinned copper, foam polyethylene insulated, twisted pairs overall aluminum polyester shield, 22 AWG stranded tinned copper drain wire, overall tinned copper braid shield (90% coverage). Black PVC jacket.

COLOR CODE

Pair No.	Color
1	White/Blue stripe and Blue/White stripe
2	White/Orange stripe and Orange/White stripe
3	White/Green stripe and Green/White stripe
4	White/Brown stripe and Brown/White stripe

Order No.	MESC CODE	UL NEC Type Voltage grade	No. of pairs	Packing length		Approx. weight	Nominal D.C.R		Nominal O.D.		Nom. Imp.	Volt. of prop.	Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	Cond.	Shield	mm	Inch	Ohms	%	pF/m	pF/ft	pF/m	pF/ft
15112	1523-01P22AWG-U2BK6-42 Ê	NEC Type CM Type PLIC 300V	1	304.2	1000	22.0	48.2 ½/km	9.5 ½/km	7.2	0.28	120	78	36.1	11	65.6	20
15113	1523-02P22AWG-U2GY8-42		2	304.2	1000	32.4	48.2 ½/km	4.6 ½/km	9.6	0.38	120	78	36.1	11	65.6	20
15114	1523-03P22AWG-U2BK6-42		3	304.2	1000	39.7	48.2 ½/km	4.6 ½/km	10.6	0.42	120	78	36.1	11	65.6	20
15115	1523-04P22AWG-U2BK6-42		4	304.2	1000	48.8	48.2 ½/km	3.6 ½/km	11.7	0.46	120	78	36.1	11	65.6	20

C/C Ð Capacitance between conductors.
C/S Ð Capacitance between one conductor and other conductors connected to shield.

SECURITY SYSTEM
LOW CAPACITANCE COMPUTER CABLES
EIA RS-485 APPLICATIONS

24 AWG
(7 X 32)

Description : Tinned copper conductor, polyethylene insulated, twisted pairs, overall Aluminum polyester shield, with 24 AWG stranded tinned copper drain wire, overall tinned copper braid shield (90% coverage), Grey PVC jacket. Ê

Order No.	MESC CODE	UL NEC Type Voltage grade temperature rating	No. of pairs	Packing length		Approx. weight	Approx. O.D.		Nominal D.C.R		Nom. Imp.	Nom. Volt. of	Nominal Capacitance			
									Cond.	Shield			c/c		c/s	
				m	ft	kgs	mm	Inch	Ohm/km	Ohm/km	Ohms	prop.	pF/m	pF/ft	pF/m	pF/ft
15108	1522-01P24AWG-U2GY8-00	NEC CM 300V, 80¼C	1	1000	3280	63	6.8	0.26	78.7	11.0	120	66	42	12.8	75.5	23.0
15111	Ê 1522-02P24AWG-U2GY8-00	NEC CM 300V, 80¼C	2	1000	3280	106	10.3	0.40	78.7	7.2	120	66	42	12.8	75.5	23.0

AUDIO & COMPUTER CABLE

22 AWG
(7 X 30)

Description : Tinned copper conductor, polyethylene insulated Black & Red under Aluminum polyester shield, Green & White under Aluminum polyster shield, common drain wire of 24 AWG stranded tinned copper with Grey PVC jacket. Ê

Order No.	MESC CODE	UL NEC Type Voltage grade temperature rating	No. of pairs	Packing length		Approx. weight	Approx. O.D.		Nominal D.C.R		Nom. Imp.	Nom. Volt. of	Nominal Capacitance			
									Cond.	Shield			c/c		c/s	
				m	ft	kgs	mm	Inch	Ohm/km	Ohm/km	Ohms	prop.	pF/m	pF/ft	pF/m	pF/ft
13001	1322-02P22AWG-U0GY8-00	NEC CM 300V, 60¼C	2	1000	3280	35	6.1	0.24	49.2	54.5	45	66	115	35	203	62

20 AWG
(7 X 22)

Description : Tinned copper, polyethylene insulated Twisted pairs. Each pair individually Shielded with Aluminum polyester shield, and 22 AWG stranded tinned copper drain wire. Grey PVC jacket.
Color code : Black / Red, Black / White, Black/Green. Ê

13002	1322-03P20 AWG-U0GY6-00	NEC CM 300V, 80¼C	3	304.8	1000	26.6	0.34	0.34	34.4	45.9	50	66	98	30	180	55

18 AWG
(19 X 30)

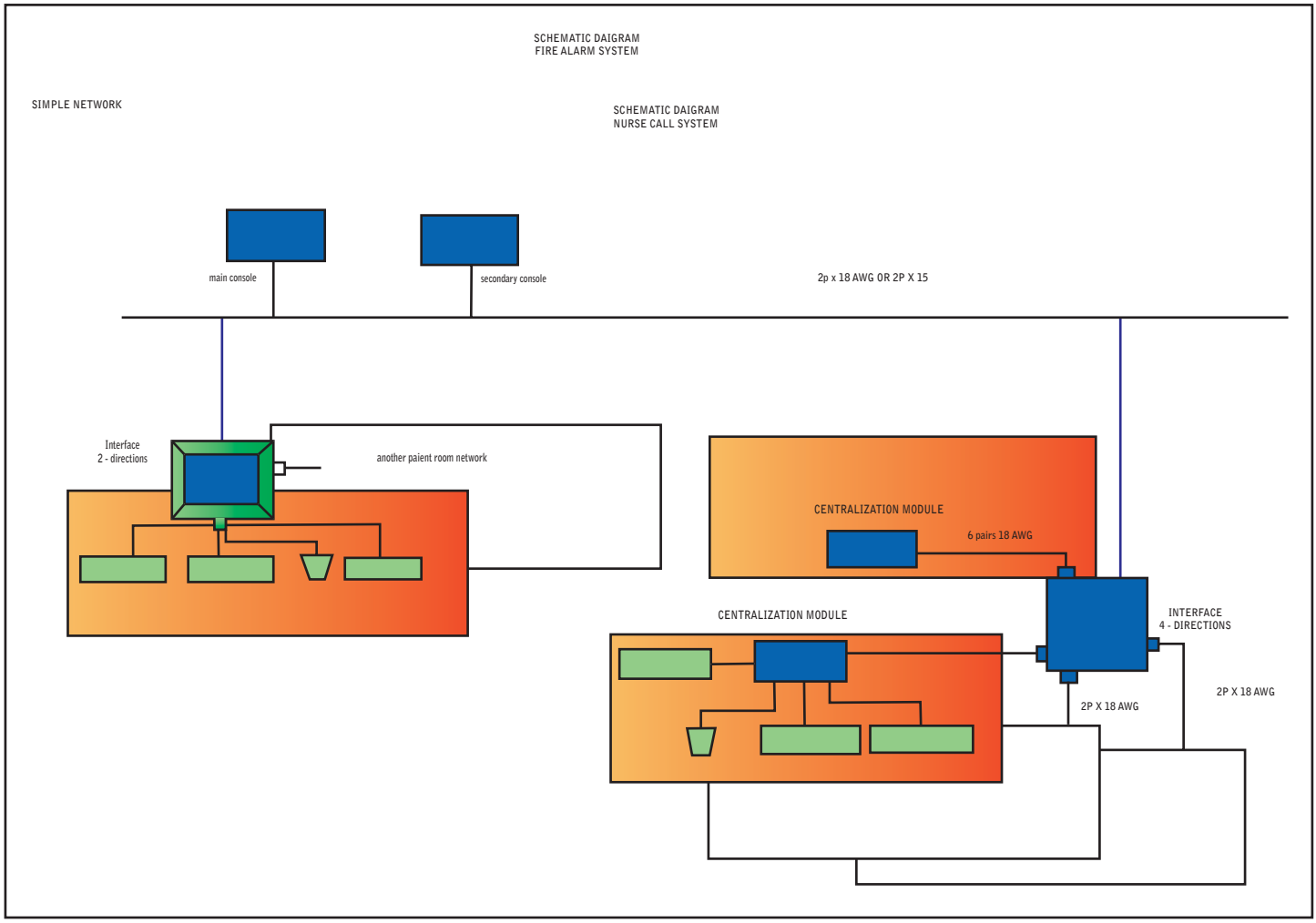
Description : Tinned copper, polyethylene insulated twisted pairs. Each pair individually Shielded with Aluminum polyester shield, and 20 AWG stranded tinned copper drain with Grey PVC jacket.
Color code : Black / Red, Black / White, Black.Green. Ê

13003	13C2-03P18AWG-U0GY6-00	NEC CM 300V, 80¼C	3	304.8	1000	38.5	10.37	0.41	21	27.2	50	66	98	30	180	55

C/C Ð Capacitance between conductors
C/S Ð Capacitance between one conductor and other conductors connected to shield

NURSE CALL SYSTEM

¥ Developed to help Hospital staff for easier and faster communication
(System's sch matic cabling circuit is enclosed)



NURSE CALL SYSTEM

JE-Y(St)Y INDUSTRIAL ELECTRONIC CABLE VDE - 0815

	JE-Y (St)Y MESC 2005

Application : Suitable for measurement and control in the fields of electronics. This cable is also used for data transmission in computers. Suitable for fixed installation in dry and humid premises.

Special Applications : Suitable for MAXI-TERMI point connections.

Construction

Conductor : Solid plain copper.

Insulation : PVC insulation type YI-3 to VDE 0207.

Pair : Cores twisted into pairs. Two(2) pairs shall be a quad. Pairs colour coded as per VDE- 0815.
First Pair : Blue + Red.
Second Pair : Grey + Yellow.
Third Pair : Green + Brown.
Fourth Pair : White + Black.

Units : Four pairs bundled into a unit and wrapped with an open helix of numbered polyester tape.

Assembly : Units cabled with non-hygroscopic fillers if necessary, shielded with aluminum polyester tape and stranded tinned copper drain wire for electrostatic noise rejection.

Outer Sheath : PVC type YM-1 as per VDE 0207 coloured grey (blue for Intrinsically safe circuits). Outer sheath passes flame retardant test as per IEC-332-1.

Technical Data

Temperature range
Stationary : - 30ûC to +70ûC..
Flexing : - 5ûC to +50ûC.

Peak working voltage : 225 Volts.

Minimum bending radius : 7.5 X cable diameter.

Conductor resistance at 20ûC : 36.6 ohm/Km.

Insulation resistance : 100 MOhm - Km.

Mutual Capacitance : 100 nF/Km (cables up to 4 pairs the value can exceed by 20%).

Capacitance unbalance maximum : 200pF/100m.

R.M.S. test voltage : 500 V core/core.
2000 V core/screen.

Attenuation : 1.1dB/Km at 800Hz.
3.0dB/Km at 10 KHz.

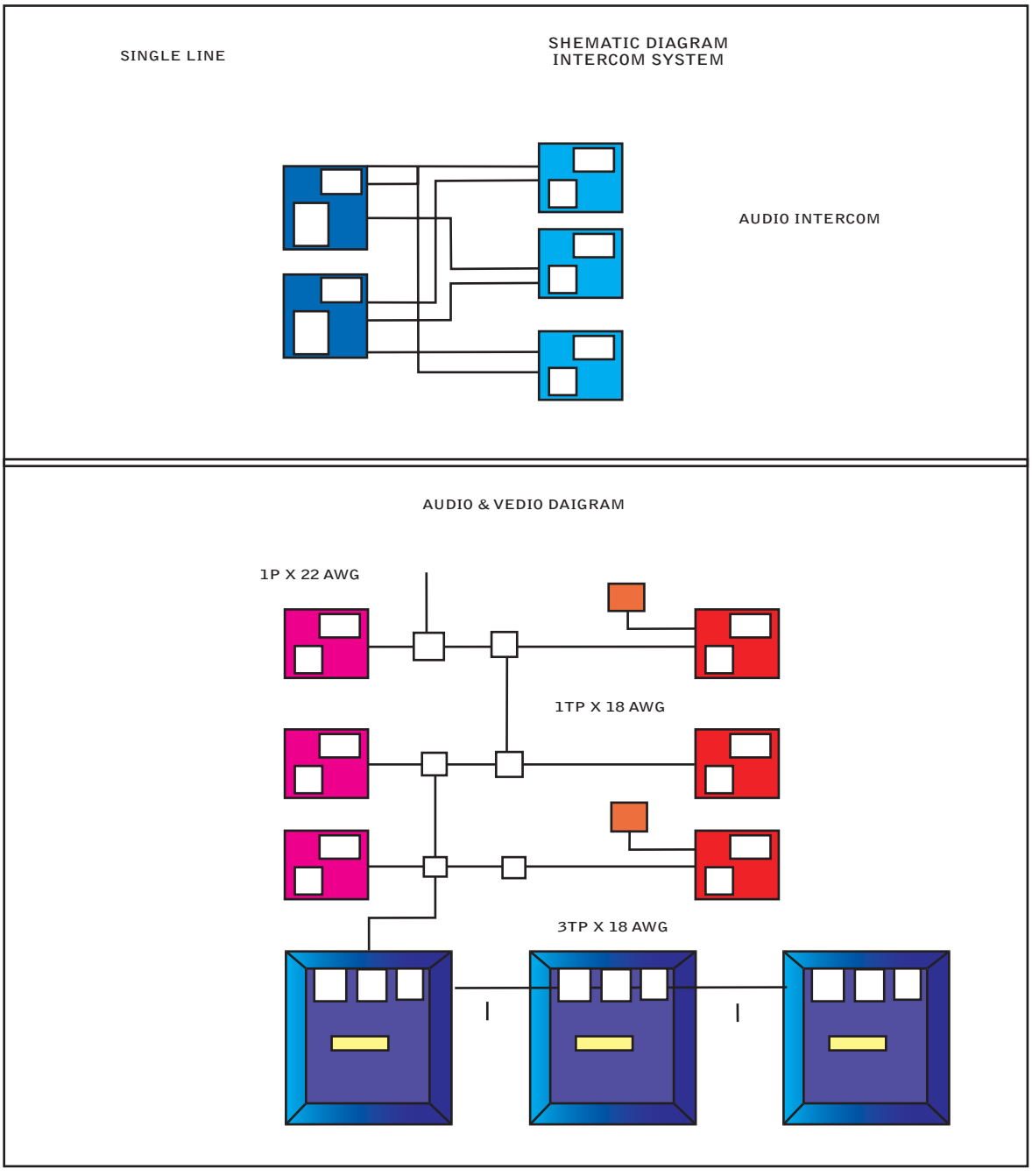
Size sq. mm	Order No.	MESC Code	Pairs	Strands X diameter No. X mm	Insulation thickness mm	Sheath thickness mm	Approx. O. D. mm	Approx. Weight Kg / Km
0.5	N2001	N261-01P00050-U0GY8-00	1	1 X 0.8	0.3	1.0	5.1	45
	N2002	N261-02P00050-U0GY8-00	2	1 X 0.8	0.3	1.0	5.9	60
	N2003	N261-04P00050-U0GY8-00	4	1 X 0.8	0.3	1.0	9.1	105
	N2004	N261-08P00050-U0GY8-00	8	1 X 0.8	0.3	1.0	11.4	170
	N2005	N261-12P00050-U0GY8-00	12	1 X 0.8	0.3	1.2	13.7	250
	N2006	N261-16P00050-U0GY8-00	16	1 X 0.8	0.3	1.2	15.3	315
	N2007	N261-20P00050-U0GY8-00	20	1 X 0.8	0.3	1.2	16.8	375

Packing: Wooden Drums of 500/1000meters

INTERCOM SYSTEM

¥ Residential - Single - Audio & Video - Multi - Audio & Video
¥ Business - Multi - Audio & Video
¥ Industrial - Multi - Audio & Video

(System's schematic cabling circuit for both types are enclosed)



INTERCOM SYSTEM
AUDIO CABLES

22AWG (7 X 30) Description : Stranded tinned copper, PVC insulated, twisted pair, Grey PVC jacket. Color code : Red, Black.

Order No.	MESC CODE	Nec Type Voltage grade	No. of Cond.	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch
11003	1121-01P22AWG-U0GY8-00	NEC Type CM 300V	2	1000	3280	23	0.38	0.015	0.64	0.025	4.5	0.177

22 AWG (7 X 30) Description : Stranded tinned copper, PVC insulated, twisted pairs, Grey PVC jacket.

COLOR CODE

Pair No.	Color
1	Black & Red
2	Black & White
3	Black & green

Order No.	MESC CODE	Nec Type Voltage grade	No. of Pairs	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch
11004	1121-02P22AWG-U0GY8-00	NEC Type CM 300V	2	1000	3280	41	0.25	0.010	0.81	0.032	6.4	0.25
11005	1121-03P22AWG-U0GY8-00	NEC Type CM 300V	3	1000	3280	53	0.25	0.010	0.81	0.032	6.8	0.27

18 AWG (16 X 30) Description : Stranded tinned copper, PVC insulated, twisted pairs, Grey PVC jacket.

11001	1191-01P18AWG-U0GY8-00	NEC Type CM 300V	1	1000	3280	40	0.36	0.014	0.81	0.032	5.6	0.22
11006	1191-02P18AWG-U0GY8-00	NEC Type CM 300V	2	1000	3280	73	0.36	0.014	0.81	0.032	8.7	0.34
11007	1191-03P18AWG-U0GY8-00	NEC Type CM 300V	3	1000	3280	96	0.36	0.014	0.81	0.032	9.3	0.36

INTERCOM SYSTEM

AUDIO AND INSTRUMENTATION CABLES

22 AWG
(7 X 30)

Description : Stranded tinned copper, PVC insulated, twisted pair, aluminum polyster shield, 24 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red.

Order No.	MESC CODE	Nec Type Voltage grade	No. of pairs	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12053	1221-01P22AWG-U0GY6-00	NEC Type CM 300V 80¼C	1	304.8	1000	6.4	0.25	0.010	0.51	0.020	3.88	0.153	174	53	318	97

20 AWG
(7 X 30)

Description : Stranded tinned copper, PVC insulated, twisted pair, aluminum polyster shield, 22 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red.

Order No.	MESC CODE	Nec Type Voltage grade	No. of pairs	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12054	1221-01P20AWG-U0GY6-00	NEC Type CM 300V 80¼C	1	304.8	1000	11.2	0.36	0.014	0.79	0.031	5.24	0.206	89	27	161	49

22 AWG
(7 X 30)

Description : Stranded tinned copper, polyethylene insulated, conductors cabled , aluminum polyster shield, 22 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red, Clear .

Order No.	MESC CODE	Nec Type Voltage grade	No. of Cond.	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12055	1222-03C22AWG-U0GY6-00	NEC CM 300V 80¼C	3	304.8	1000	11.2	0.41	0.016	0.84	0.033	5.30	0.209	75	23	134	41

20 AWG
(7 X 22)

Description : Stranded tinned copper, Polyethylene insulated, conductors cabled, aluminum polyster shield, 20 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red, Clear .

12056	1222-03C20AWG-U0GY6-00	NEC Type CM 300V 80¼C	3	304.8	1000	13.8	0.41	0.016	0.84	0.033	5.66	0.223	89	27	167	51

16 AWG
(19 X 29)

Description : Stranded tinned copper, Polyethylene insulated, conductors cabled, aluminum polyster shield, 18 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red, Clear .

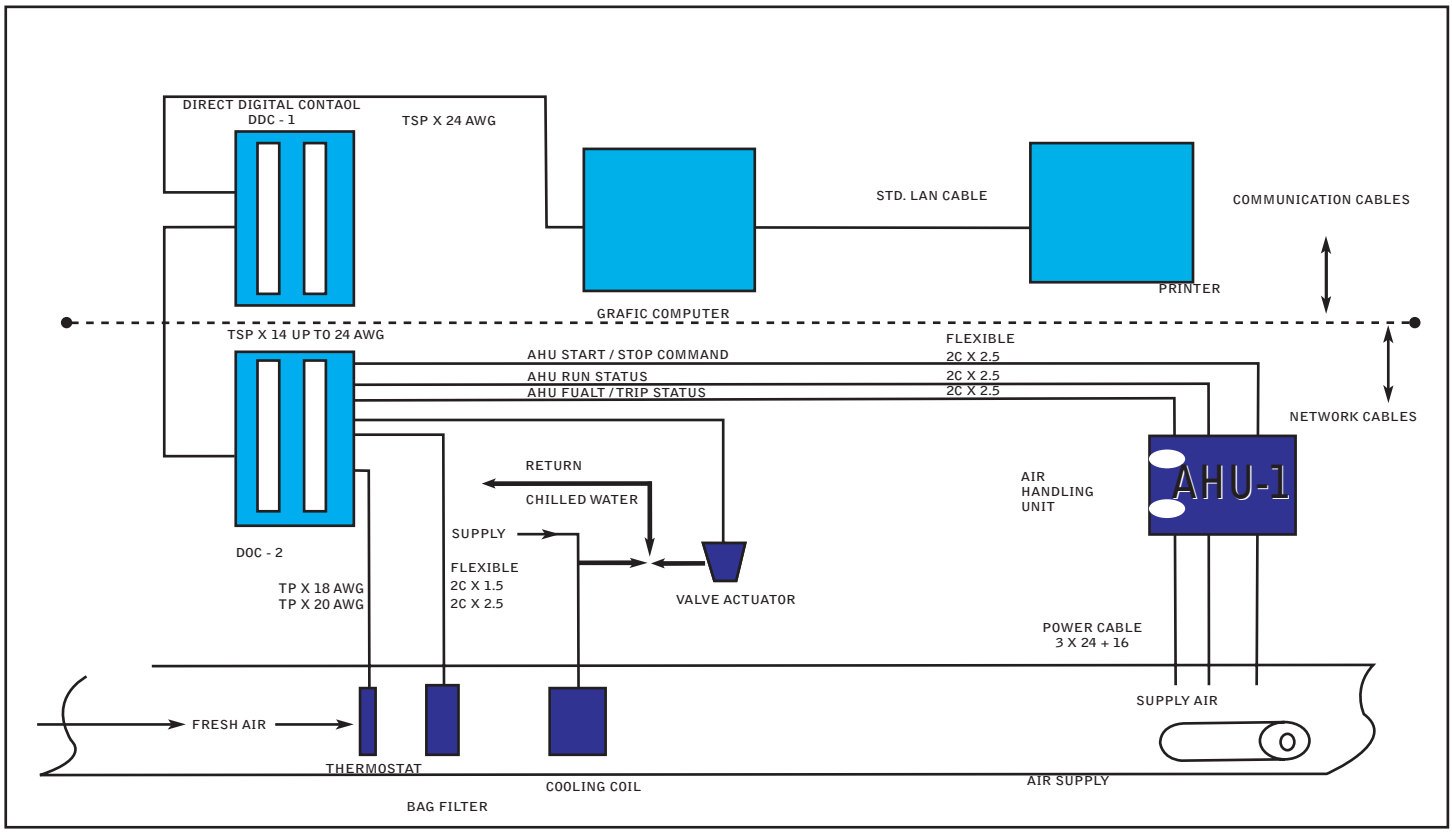
12057	12C2-03C16AWG-U0GY6-00	NEC Type CM 300V 80¼C	3	304.8	1000	27.4	0.73	0.029	0.79	0.031	8.27	0.326	85	26	164	50

BUILDING MANAGEMENT SYSTEM

What is a (BMS) Building Management System ?

Building Management Systems consist of intelligent controllers which are networked together to provide comprehensive control for heating, Ventilation and Air Conditioning (HVAC) and other building services. Information is taken from sensors or other imput devices which is processed through the intelligent controllers. These then issue appropriate commands to devices such as valves and actuators. The system is viewed through a "supervisor" which is usually a PC running building management software. This software allows you to change control parameters as well as perform a wide range of energy analysis and maintenance functions.

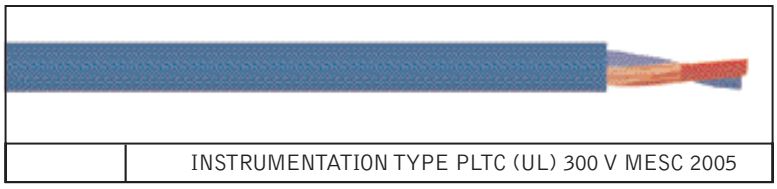
(System's schematic building cabling circuit is shown below)



CABLING DIAGRAM

BUILDING MANAGEMENT SYSTEM
INSTRUMENTATION / PROCESS CONTROL CABLES
(TYPE PLTC 300 VOLTS)
PVC INSULATED SINGLE PAIR / TRIAD UNSHIELDED

Temperature range - 40ûC to +90ûC
Specifications : UL13



INSTRUMENTATION TYPE PLTC (UL) 300 V MESC 2005

Application : Can be used in cable tray, conduit or direct burial application for instrumentation / process control, in dry or wet location.

- **Conductor** : Plain copper to ASTM B3, stranded to Class B / Class C of ASTM B8.
- **Insulation** : Flame retardant PVC rated 90ûC as per UL13.
- **Pair Colour Code** : White and Black.
- **Triple Colour Code** : White, Black and Red.
- **Assembly** : Twisted pair / triple is covered with a polyester tape if required.
- **Jacket** : Extruded black PVC as per UL13, oil and sunlight resistant passes flame test as per IEEE - 383 (70000 BTU). The jacket is impervious to vapour and moisture penetration.

SINGLE PAIR

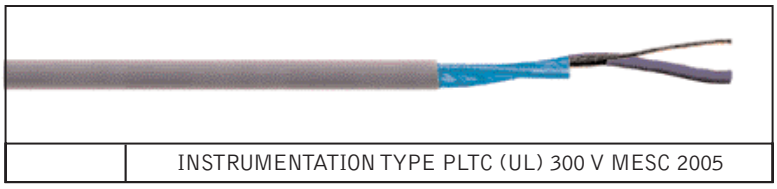
SIZE (AWG)	Order No.	MESC Code	Pairs	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
16	B1001	B111-01P16AWG-U0BK8-03	1	7 X 0.488	0.38	0.89	6.8	60

SINGLE TRIAD

SIZE (AWG)	Order No.	MESC Code	Triples	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
16	B1002	B111-01T16AWG-U0BK8-03	1	7 X 0.488	0.38	1.01	7.4	85

BUILDING MANAGEMENT SYSTEM
INSTRUMENTATION / PROCESS CONTROL CABLES
(TYPE PLTC 300 VOLTS)
PVC INSULATED SINGLE PAIR / TRIAD OVERALL SHIELDED

Temperature range - 40ûC to +90ûC
Specifications : UL13



INSTRUMENTATION TYPE PLTC (UL) 300 V MESC 2005

Application : Can be used in cable tray, conduit or direct burial application for instrumentation / process control, in dry or wet location.

- **Conductor** : Plain copper to ASTM B3 , stranded to class B of ASTM B8.
- **Insulation** : Flame retardant PVC insulation rated 90ûC as per UL13.
- **Pair Colour Code** : White and Black.
- **Triple Colour Code** : White, Black and Red.
- **Overall Shielding** : Twisted pair / triple is shielded with aluminum polyester tape and a tinned copper drain wire.
- **Jacket** : Extruded black PVC as per UL13, oil and sunlight resistant, passes flame test as per IEEE - 383 (70000 BTU). The jacket is impervious to vapour and moisture penetration.

SINGLE PAIR

SIZE (AWG)	Order No.	MESC Code	Pairs	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
20	B2001	B211-01P20AWG-U0BK8-03	1	7 X 0.307	0.38	0.89	5.8	45
18	B2002	B211-01P18AWG-U0BK8-03	1	7 X 0.386	0.38	0.89	6.3	55
16	B2003	B211-01P16AWG-U0BK8-03	1	7 X 0.488	0.38	0.89	6.9	70

SINGLE TRIAD

SIZE (AWG)	Order No.	MESC Code	Triples	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
18	B2004	B211-01T18AWG-U0BK8-03	1	7 X 0.386	0.38	0.89	6.6	65
16	B2005	B211-01T16AWG-U0BK8-03	1	7 X 0.488	0.38	1.01	7.5	85

BUILDING MANAGEMENT SYSTEM

LOW CAPACITANCE COMPUTER CABLES FOR EIA RS-232 AND EIA RS-422 APPLICATIONS

24 AWG
(7 X 32)

Description : Stranded tinned copper, foam polyethylene insulated, twisted pairs. Overall aluminum polyester shield, 24 AWG stranded tinned copper drain wire & overall tinned copper braid shield (65% coverage), Grey PVC jacket.

COLOR CODE

Pair No.	Color
1	White/Blue stripe and Blue/White stripe
2	White/Orange stripe and Orange/White stripe
3	White/Green stripe and Green/White stripe
4	White/Brown stripe and Brown/White stripe
5	White/Gray stripe and Gray/White stripe
6	Red/Blue stripe and Blue/Red stripe

Order No.	MESC CODE	NEC Type Voltage grade	No. of pairs	Packing length		Approx. weight	Nominal D.C.R		Nominal O.D.		Nom. Imp.	Volt. of prop.	Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	Cond.	Shield	mm	Inch	Ohms		pF/m	pF/ft	pF/m	pF/ft
15109	1523-02P24AWG-U2GY8-42	Type CM 30V	2	1000	3280	55	78.7 ½/km	15.1 ½/km	7.0	0.28	100	78	41.0	12.5	72.2	22
15110	Ê 1523-06P24AWG-U2GY8-42	Type CM 30V	6	1000	3280	90	78.7 ½/km	11.6 ½/km	8.9	0.35	100	78	41.0	12.5	72.2	22

LOW CAPACITANCE COMPUTER CABLES FOR EIA RS-485 APPLICATIONS

24 AWG
(7 X 32)

Description : Stranded tinned copper, polyethylene insulated, twisted pairs, overall aluminum polyester shield, 24 AWG stranded tinned copper drain wire, & overall tinned copper braid shield (90% coverage), Grey PVC jacket.

Order No.	MESC CODE	NEC Type Voltage grade	No. of pairs	Packing length		Approx. weight	Approx. O.D.		Nominal D.C.R		Nom. Imp.	Nom. Volt. of	Nominal Capacitance			
									Cond.	Shield			c/c		c/s	
		Temp. rating		m	ft	kg	mm	Inch	Ohm/km	Ohm/km	Ohms	prop.	pF/m	pF/ft	pF/m	pF/ft
15108	1522-01P24AWG-U2GY8-42	NEC CM 300V 80¼C	1	1000	3280	63	6.8	0.26	78.7	11.0	120	66	42	12.8	75.5	23.0
15111	Ê 1522-02P24AWG-U2GY8-42	NEC CM 300V 80¼C	2	1000	3280	106	10.3	0.40	78.7	7.2	120	66	42	12.8	75.5	23.0

C/C Ð Capacitance between conductors
C/S Ð Capacitance between one conductor and other conductors connected to shield

BUILDING MANAGEMENT SYSTEM
(CONTROL , MEASUREMENT & DATA TRANSMISSION)

Specification: UL Style 1015, CSA AWM
Temperattire range, -40¼C to +90¼C,

MESCOFLEX-SHLD 7CX16AWG 600 V MESC 2005

Application : These cables are recommended for all Indoor electrical installations and wiring of electrical equipment, within buildings.

Conductor : Flexible tinned copper to ASTM B33, standed to class K of ASTM B174.

Insulation : Flame retadant PVC rated 90¼C.

Colour Code: Colour Coded insulation up to 5* conductors and Black with number print for more than 5 conductors.

Assembly : Insulated conductors cabled with suitable non hygroscopic fillers if necessary and wrapped with a binder tape.

Outer Jacket: Extruded flame retardant PVC coloured Grey.

16 AWG (26X30 AWG)

Order No.	MESC Code	No. of cores	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
B 1003	B191-02C16AWG-U2GY8-00	2	26X0.254	0.81	1.6	9.7	130
B 1004	B191-03C16AWG-U2GY8-00	3	26X0.254	0.81	1.6	10.2	150
B 1005	B191-04C16AWG-U2GY8-00	4	26X0.254	0.81	1.6	11.2	180
B 1006	B191-05C16AWG-U2GY8-00	5	26X0.254	0.81	1.6	12.2	205
B 1007	B191-07C16AWG-U2GY8-00	7	26X0.254	0.81	1.6	12.9	260
B 1008	B191-09C16AWG-U2GY8-00	9	26X0.254	0.81	1.6	14.9	325
B 1009	B191-12C16AWG-U2GY8-00	12	26X0.254	0.81	1.6	16.6	405

14 AWG (41X30 AWG)

B 1010	B191-02C16AWG-U2GY8-00	2	41X0.254	0.81	1.6	10.5	160
B 1011	B191-03C16AWG-U2GY8-00	3	41X0.254	0.81	1.6	11.2	190
B 1012	B191-04C16AWG-U2GY8-00	4	41X0.254	0.81	1.6	12.2	225
B 1013	B191-05C16AWG-U2GY8-00	5	41X0.254	0.81	1.6	13.2	265
B 1014	B191-07C16AWG-U2GY8-00	7	41X0.254	0.81	1.6	14.1	335
B 1015	B191-09C16AWG-U2GY8-00	9	41X0.254	0.81	1.6	16.3	420
B 1016	B191-12C16AWG-U2GY8-00	12	41X0.254	0.81	1.6	18.3	530

* COLOR CODE : 1- Black 4-Orange
2- Brown 5- Yellow
3- Red

BUILDING MANAGEMENT SYSTEM
(CONTROL , MEASUREMENT & DATA TRANSMISSION)

Specification: UL Style 1015, CSA AWM
Temperattire range, -40¼C to +90¼C, Vottage 600V

MESCOFLEX-SHLD 7CX16AWG 600 V MESC 2005

Application : These cables are recommended for all Indoor electrical /electronic systems, Copper wire screen provides interference free signal transmission.

Conductor : Flexible tinned copper to ASTM B33, standed to class K of ASTM B174.

Insulation : Flame retadant PVC rated 90¼C.

Colour Code: Colour Coded insulation up to 5* conductors and Black with number print for more than 5 conductors.

Assembly : Insulated conductors assembled in concentric layers, shielded with Aluminum polyester tape with a stranded tinned copper drain wire and braided (90% coverage) with tinned copper wire.

Outer Jacket: Extruded flame retardant PVC coloured Grey.

16 AWG (26X30 AWG)

Order No.	MESC Code	No. of cores	Strands X diameter No. X mm	Insulation thickness mm	Nominal jacket thickness mm	Approx. O.D. mm	Approx. weight Kg/Km
B 5001	B591-02C16AWG-U2GY8-00	2	26X0.254	0.81	1.6	10.5	160
B 5002	B591-03C16AWG-U2GY8-00	3	26X0.254	0.81	1.6	11.1	175
B 5003	B591-04C16AWG-U2GY8-00	4	26X0.254	0.81	1.6	11.8	205
B 5004	B591-05C16AWG-U2GY8-00	5	26X0.254	0.81	1.6	12.8	245
B 5005	B591-07C16AWG-U2GY8-00	7	26X0.254	0.81	1.6	13.7	295
B 5006	B591-09C16AWG-U2GY8-00	9	26X0.254	0.81	1.6	15.7	360
B 5007	B591-12C16AWG-U2GY8-00	12	26X0.254	0.81	1.6	17.4	445

14 AWG (41X30 AWG)

B 5008	B591-02C14AWG-U2GY8-00	2	41X0.254	0.81	1.6	11.3	190
B 5009	B591-03C14AWG-U2GY8-00	3	41X0.254	0.81	1.6	11.9	210
B 5010	B591-04C14AWG-U2GY8-00	4	41X0.254	0.81	1.6	12.8	250
B 5011	B591-05C14AWG-U2GY8-00	5	41X0.254	0.81	1.6	13.8	300
B 5012	B591-07C14AWG-U2GY8-00	7	41X0.254	0.81	1.6	14.9	365
B 5013	B591-09C14AWG-U2GY8-00	9	41X0.254	0.81	1.6	17.1	455
B 5014	B591-12C14AWG-U2GY8-00	12	41X0.254	0.81	2.11	20.2	610

* COLOR CODE : 1- Black 4-Orange
2- Brown 5- Yellow
3- Red

BUILDING MANAGEMENT SYSTEM
AUDIO AND INSTRUMENTATION CABLES

18 AWG (19 X 30) Description : Stranded tinned copper, S-R PVC insulated, conductors cabled. Aluminum polyster shield, 20 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red, White, Green.

Order No.	MESC CODE	NEC Type Voltage grade	No. of cores	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12050	12C1-04C18AWG-U0GY8-00	Type CM 300V	4	1000	3280	80	0.25	0.010	0.89	0.035	6.3	0.248	230	70	394	120

18 AWG (16 X 30) Description : Stranded tinned copper, PVC insulated, twisted pairs, Grey PVC jacket. Color code : Red, Black.

Order No.	MESC CODE	NEC Type Voltage grade	No. of pairs	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch
11008	1191-01P18AWG-U0GY8-00	Type CM 300V	1	1000	3280	39	0.36	0.014	0.81	0.032	5.4	0.212

14 AWG (19 X 27) Description : Stranded tinned copper, polyethylene insulated, twisted pairs, aluminum polyster shield, 16 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, clear

Order No.	MESC CODE	NEC Type Voltage grade	No. of pairs	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12049	12C2-01P14AWG-U0GY8-80	Type CL2 600V	1	1000	3280	102	0.81	0.032	0.89	0.035	9.1	0.358	79	24	154	47

18 AWG (16 X 30) Description : Stranded tinned copper, polyethylene insulated, twisted pairs, aluminum polyster shield. 20 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, clear

12047	1292-01P18AWG-U0GY8-80	Type CM 300V	1	1000	3280	40	0.46	0.018	0.71	0.028	5.8	0.228	79	24	144	44

18 AWG (16 X 30) Description : Stranded tinned copper, polyethylene insulated, conductors cabled, Aluminum polyster shield, 20 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, Red, clear.

Order No.	MESC CODE	NEC Type Voltage grade	No. of cores	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12018	1292-03C18AWG-U0GY8-80	NECType CM 300V	3	1000	3280	58	0.46	0.018	0.84	0.033	6.4	0.252	79	24	157	48

C/C Ð Capacitance between conductors.
C/S Ð Capacitance between conductors and other conductors connected to shield.

PUBLIC ADDRESS SYSTEM
SOUND (Speaker + Microphone)
CLOCK & PAGING

¥ Common applications are as follows :

Ð Residential

Ð Business

Ð Amusement centers

¥ Common fields are :

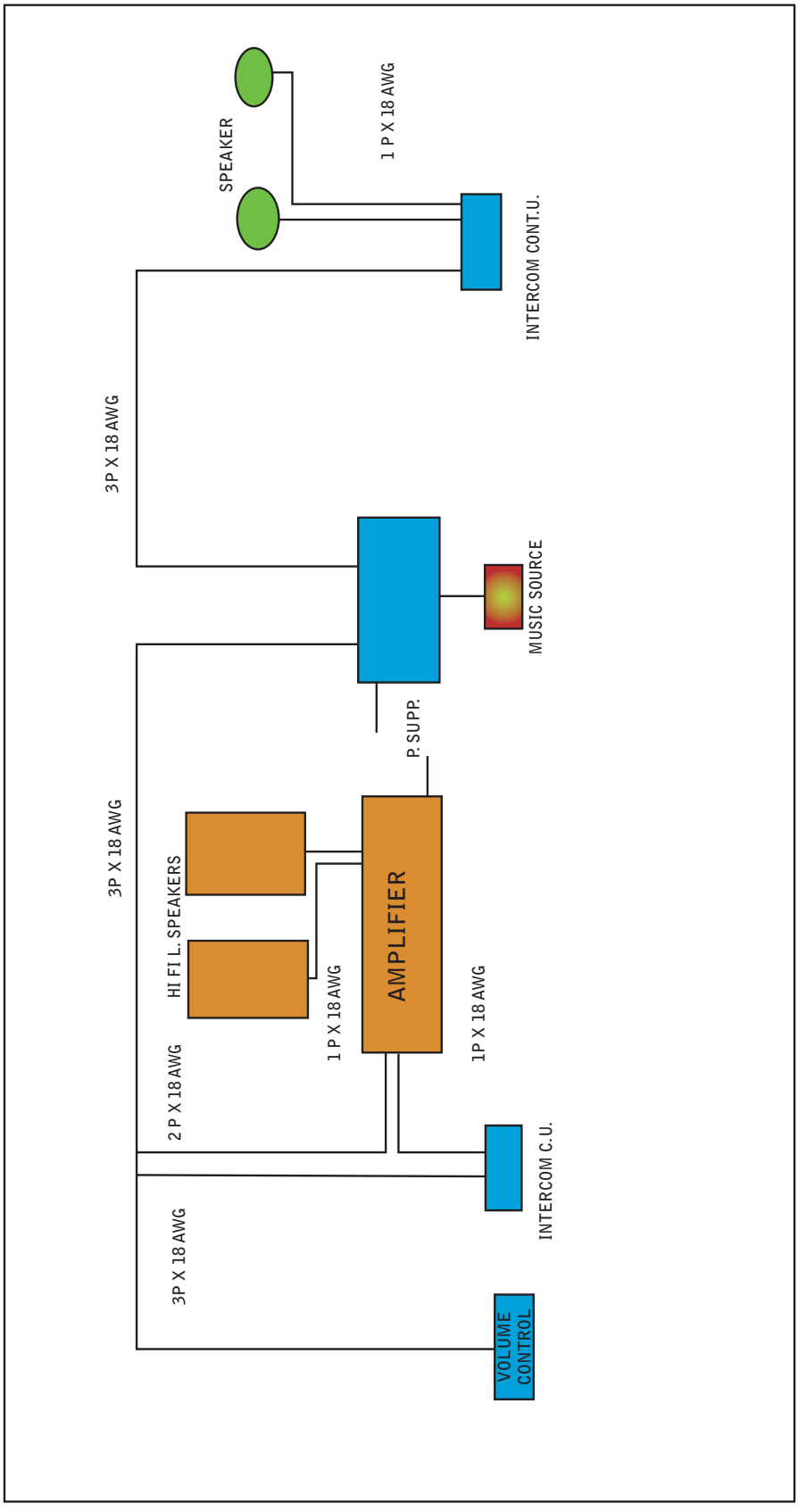
Ð Intercom / Paging

Ð Audio / Security

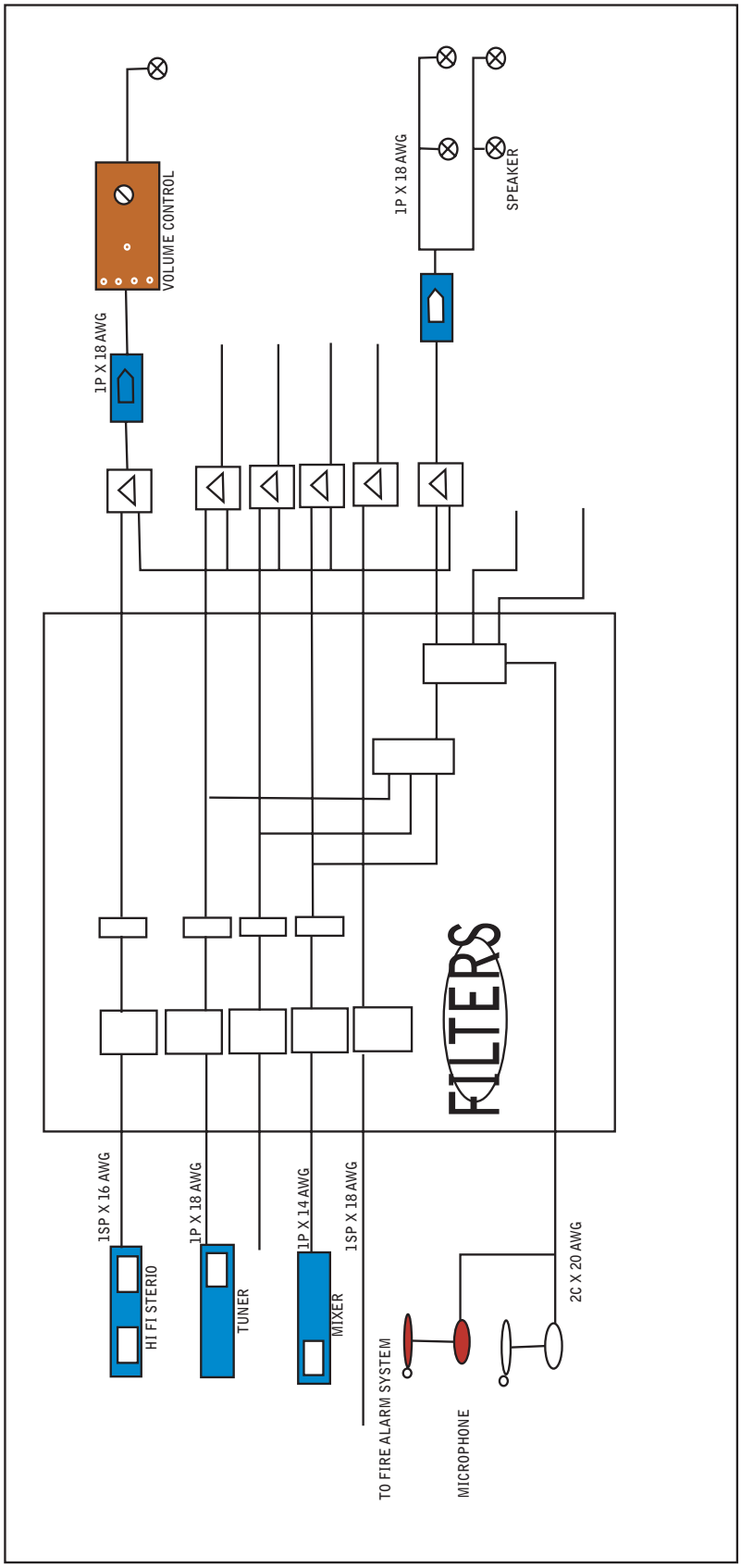
Ð Sound & Background Music

¥ For clock network same cables can be used
(System's schematic building cabling circuits is enclosed)

PUBLIC ADDRESS SYSTEM



SCHEMATIC DIAGRAM
PUBLIC ADDRESS SYSTEM



SINGLE LINE DIAGRAM

PUBLIC ADDRESS SYSTEM SPEAKER CABLE

14 AWG (19 X 27) Description : Stranded tinned copper, PVC insulated, twisted pair, overall aluminum polyster shield, 16 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black & White.

Order No.	MESC CODE	NEC Type Voltage grade	No. of Cond.	Packing lengths		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12060	12C1-01P14AWG-U0GY8-00	NEC Type CL3 300V	2	1000	3280	75	0.36	0.014	0.64	0.025	6.9	0.271	249	76	449	137

C/C Ð Capacitance between conductors.
C/S Ð Capacitance between one conductor and other conductors connected to shield.

COMMUNICATION & CONTROL CABLE

20 AWG (7 X 28) Description : Stranded tinned copper, PVC insulated, twisted pair, Grey PVC jacket. Color code : Black & Red.

Order No.	MESC CODE	NEC Type Voltage grade Temp	No. of Cond.	Packing length		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch
11002	1121-01P20AWG-U0GY6-00	NEC Type CM 300V,90C	2	304.8	1000	9	0.38	0.015	0.64	0.025	4.5	0.180

16 AWG (19 X 29) Description : Stranded tinned copper, PVC insulated, twisted pair, Grey PVC jacket. Color code : Black & White.

11009	11C1-01P16AWG-U0GY6-00	NEC Type CM 300V,90C	2	304.8	1000	18	0.58	0.023	0.81	0.032	6.9	0.274

14 AWG (42 X 30) Description : Stranded tinned copper, PVC insulated, twisted pair Gray PVC jacket. Color code : Black, White.

11010	1191-01P14AWG-U0GY6-00	CL3,600V	2	304.8	1000	28	0.81	0.032	0.81	0.032	8.7	0.340

12 AWG (65 X 30) Description : Stranded tinned copper, PVC insulated, twisted pair Gray PVC jacket. Color code : White & Black.

11011	1191-01P12AWG-U0GY6-00	CL3,600V	2	304.8	1000	38	0.81	0.032	0.89	0.035	8.6	0.386

PUBLIC ADDRESS SYSTEMS
ANALOG VIDEO & AUDIO CABLES

12 AWG (19 X 25) Description : Stranded tinned copper, polyethylene insulated, twisted pair, aluminum polyster shield, 14 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black, clear.

Order No.	MESC CODE	NEC Type Voltage grade	No. of Pairs	Packing lengths		Approx. weight	Insulation thickness		Jacket thickness		Nominal O.D.		Nominal Capacitance			
													c/c		c/s	
				m	ft	kg	mm	inch	mm	Inch	mm	Inch	pF/m	pF/ft	pF/m	pF/ft
12058	12C2-01P12AWG-U0GY8-80	NEC Type CL2 600V 80¼C	1	1000	3280	150	0.94	0.037	1.02	0.040	10.8	0.42	82	25	161	49

16 AWG (19 X 29) Description : Stranded tinned copper, polyethylene insulated, twisted pair, aluminum polyster shield, 18 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black & clear.

12052	12C2-01P16AWG-U0GY8-75	NEC Type CL2 600V 80¼C	1	1000	3280	81	0.81	0.032	0.81	0.032	7.87	0.31	75	23	144	44

20 AWG 7 X 28 Description : Stranded tinned copper, polyethylene insulated, twisted pair, aluminum polyster shield, 20 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black & clear.

12051	1222-01P20AWG-U0GY8-90	NEC Type CM 300V 80¼C	1	1000	3280	35	0.41	0.016	0.71	0.028	5.5	0.216	88	27	160	48

C/C Ð Capacitance between conductors.
C/S Ð Capacitance between one conductor and other conductors connected to shield.

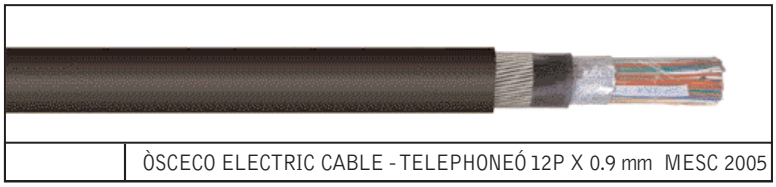
22 AWG 7 X 28 Description : Stranded tinned copper, polyethylene insulated, twisted pair, aluminum polyster shield, 22 AWG stranded tinned copper drain wire, Grey PVC jacket. Color code : Black & clear.

12059	1222-01P22AWG-U0GY6-80	NEC Type CM 300V 80¼C	1	304.8	1000	8.1	0.41	0.016	0.64	0.025	4.74	0.186	79	24	154	47

C/C Ð Capacitance between conductors.
C/S Ð Capacitance between one conductor and other conductors connected to shield.

PILOT CABLE (12 PAIR X 0.9 mm)

Specification : SCECO-C TS16.10/Rev.4



ÒSCECO ELECTRIC CABLE - TELEPHONEÓ 12P X 0.9 mm MESC 2005

Application : Used in Telecommunication Network and Protection System.

Construction

- **Conductor** : Solid annealed plain copper conductor of 0.9 mm.
- **Insulation** : Solid plyethylene to ASTM D1248.
- **Conductor Identification** : Insulated conductors shall be fully colour coded as per Table-2 of Spec. TS16.10/Rev.4.
- **Assembly** : Two insulated conductors shall be uniformly twisted together to form a pair with staggered twist lengths of 30 to 200mm to minimize crosstalk. Twelve pairs shall be assembled together to form the cable core.
- **Core Filling** : The water resistant filling compound shall be applied to the air space within the cable core.
- **Core Wrapping** : A polyester or polyprophylene tape or any approved material shall be applied longitudinally or helically with an overlap.
- **Moisture Barrier/Shield** : An Aluminium tape (0.2mm) coated on both sides with a copolymer shall be applied longitudinally over the core wrap with a minimum overlap of 6.5mm.
- **First (inner) Sheath** : The sheath shall be an extruded Black low density polyethylene to ASTM D1248.
- **Armouring** : Armour material shall be of Galvanized Round Steel Wire and shall be applied over the inner sheath.
- **Second (Outer) Sheath** : The sheath shall be an extruded black low density polyethylene to ASTM D1248.
- **Sheath Marking** : "SCECO ELECTRIC CABLE - TELEPHONE" 12PX0.9MM MESC YEAR & Sequential Length Marking shall be placed on the sheath.

PILOT CABLE (12 PAIR X 0.9 mm)

SIZE (mm)	Order No.	MESC Code	Size (No. xmm)	Approx. O.D. (mm)	Approx. Cable Wt. (Kg.)	Packing Length (m)	Drum Flange Dia. (mm)
0.9	31053	3162-12J00090-WMBK8-50	12X2X0.9	31.0	1600	1000	1600

TRANSMISSION CHARACTERISTICS

Max. Conductor Loop Resistance (20¼ C)	Ohms/Km	Max.	58.2
Insulation Resistance (20¼ C)	MOhm-Km	Min.	1000
Mutual Capacitance (1000+/-200Hz)	nF/Km	Average	71
Capacitance Unbalance (1000+/-200Hz)	pF/500m	Average	180
		Ind	500
Dielectric Strength (Volts DC for 3 Sec.)		Cond-Cond Cond-Shld & Armour	10000 15000
Attenuation (max.) Frequency 300 KHz 800 KHz 1000 KHz 2000 KHz 2500 KHz 3000 KHz	dB/Km	Max.	 0.46 0.76 0.85 1.20 1.34 1.56

MESC
SPECIALIZED CABLES

CROSS REFERENCE GUIDE

BELDEN ALPHA	MESC EQUALNT.	CONDUCTOR SIZE	SHIELDING TYPE/MTRL	APPLICATION	CAT PAGE
8102	15109	24AWG	OA ATC-BRD(65%)	BMS	45
8106	15110	24AWG	OA ATC-BRD(65%)	BMS	45
8205	11002	20AWG	UNSHLD	PBLIC-ADDRESS	52
8213	29002	RG-11	ABC-BRD-9%	CATV	34
8240	25002	RG-58U	COATED CU (9%)	COMMERCIAL	4
8259	25001	RG-58U	COATED CU (9%)	COMMERCIAL	4
8262	22001	RG-58	COATED CU (9%)	MIL-SPEC	3
8267	22002	RG-213	PLAIN CU(96%)	MIL-SPEC	3
8442	11003	22AWG	UNSHLS	INTER-COM	40
8471	11009	16AWG	UNSHLD	PBLC-ADDRESS	52
8473	11010	14AWG	UNSHLD	PBLC-ADDRESS	52
8477	11011	12AWG	UNSHLD	PBLC-ADDRESS	52
8618	12057	16AWG	OA SHLD	INTER-COM	41
8690	11007	18AWG	UNSLD	INTER-COM	40
8716	12058	12AWG	OA SHLD	PBLC-ADDRESS	53
8719	12052	16AWG	OA SHLD	PBLC-ADDRESS	53
8720	12049	14AWG	OA SHLD	BMS	48
8723	13001	22AWG	IND SHLD	SECURITY	36
8760	12047	18AWG	OA SHLD	BMS	48
8761	12059	22AWG	OA SHLD	PBLC-ADDRESS	53
8762	12051	20AWG	OA SHLD	PBLC-ADDRESS	53
8770	12018	18AWG	OA SHLD	BMS	48
8771	12055	22AWG	OA SHLD	INTER-COM	41
8772	12056	20AWG	OA SHLD	INTER-COM	41
9011	28003	RG-11	AMT+AL(40%)	MATV	1
9104	21001	RG-59	AMT+AL(61%)	CATV	2
9114	28002	RG-6U	AMT+AL(40%)	MATV	1
9116	21002	RG-6U	AMT+AL(61%)	CATV	2
9154	12054	20AWG	OA SHLD	INTER-COM	41
9156	11006	18AWG	UNSHLD	INTER-COM	40
9248	21004	RG-6	AMT+ATC(61%)	ANALOG-VIDEO	33
9290	21005	RG-6	ABC-2-BRD-95%	CATV	34
9292	21006	RG-11	AMT+ATC(61%)	ANALOG-VIDEO	33
9418	12050	18AWG	OA SHLD	BMS	48
9501	12024	24AWG	OA SHLD	ELEC&COMP	8

CROSS REFERENCE GUIDE

BELDEN ALPHA	MESC EQUALNT.	CONDUCTOR SIZE	SHIELDING TYPE/MTRL	APPLICATION	CAT PAGE
9502	12025	24AWG	OA SHLD	ELEC&COMP	8
9503	12026	24AWG	OA SHLD	ELEC&COMP	8
9504	12027	24AWG	OA SHLD	ELEC&COMP	8
9505	12028	24AWG	OA SHLD	ELEC&COMP	8
9506	12029	24AWG	OA SHLD	ELEC&COMP	8
9507	12030	24AWG	OA SHLD	ELEC&COMP	8
9508	12031	24AWG	OA SHLD	ELEC&COMP	8
9509	12032	24AWG	OA SHLD	ELEC&COMP	8
9510	12033	24AWG	OA SHLD	ELEC&COMP	8
9515	12034	24AWG	OA SHLD	ELEC&COMP	8
9519	12035	24AWG	OA SHLD	ELEC&COMP	8
9525	12036	24AWG	OA SHLD	ELEC&COMP	8
9571	41001	18AWG	UNSHLD	FIRE ALARM	31
9572	41002	16AWG	UNSHLD	FIRE ALARM	31
9574	42001	18AWG	OASHLD	FIRE ALARM	31
9575	42002	16AWG	OASHLD	FIRE ALARM	31
9578	42005	18AWG	OA SHLD	FIRE ALARM	31
9579	42006	16AWG	OA SHLD	FIRE ALARM	31
9580	41003	14AWG	UNSHLD	FIRE ALARM	31
9581	42003	14AWG	OA SHLD	FIRE ALARM	31
9582	41004	12AWG	UNSHLD	FIRE ALARM	31
9583	42004	12AWG	OA SHLD	FIRE ALARM	31
9680	12037	24AWG	OA SHLD	ELEC&COMP	10
9681	12038	24AWG	OA SHLD	ELEC&COMP	10
9682	12039	24AWG	OA SHLD	ELEC&COMP	10
9683	12041	24AWG	OA SHLD	ELEC&COMP	10
9684	12042	24AWG	OA SHLD	ELEC&COMP	10
9740	11001	18AWG	UNSHLD	INTER-COM	40
9744	11004	22AWG	UNSHLD	INTER-COM	40
9745	11005	22AWG	UNSHLD	INTER-COM	40
9773	13003	18AWG	IND SHLD	SECURITY	36
9830	15098	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9831	15099	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9832	15100	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9833	15102	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12

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CROSS REFERENCE GUIDE

BELDEN ALPHA	MESC EQUALNT.	CONDUCTOR SIZE	SHIELDING TYPE/MTRL	APPLICATION	CAT PAGE
9834	15103	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9835	15104	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9836	15105	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9837	15106	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9838	15107	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9839	15101	24AWG	SH-TIN-CU BRD(65%)	ELEC&COMP	12
9841	15108	24AWG	OA ATC-BRD(90%)	SECURTIY	36
9842	15111	24AWG	OA ATC-BRD(90%)	SECURTIY	36
9842	15111	24AWG	OA ATC-BRD(90%)	BMS	45
9850	22003	RG-216	PLAIN CU 2X(95%)	MIL-SPEC	3
9873	13002	20AWG	IND SHLD	SECURTY	36
9914	25003	RG8U	OA SH & ATC-BRD(95%)	COMMERCIAL	4
1030A	B2003	16AWG	OA-SHLD	BMS	44
1031A	B2005	16AWG	OA-SHLD	BMS	44
1032A	B2002	18AWG	OA-SHLD	BMS	44
1033A	B2001	20AWG	OA-SHLD	BMS	44
1034A	B1001	16AWG	UNSHLD	BMS	43
1035A	B1002	16AWG	UNSHLD	BMS	43
1036A	B2004	18AWG	OA-SHLD	BMS	44
1426A	29001	RG-59	ABC-BRD-95%	CATV	34
1503A	12053	22AWG	OA-SHLD	INTER-COM	41
1523A	21003	RG-11	AMT+AL(61%)	CATV	2
1583A	M1003	24AWG	UNSHLD	LAN-CAT-5	6
3072F	23001	TWINEX-78	OA SH,ATC-BRD(55%)	INDDTRL-TWINEX	5
3073F	24001	TWINEX-100	OA SH,ATC-BRD(55%)	INDDTRL-TWINEX	5
3074F	2600	TWINEX-124	OA SH,ATC-BRD(55%)	INDDTRL-TWINEX	5
3105A	15112	22AWG	OA ATC-BRD(90%)	SECURTY	35
3107A	15113	22AWG	OA ATC-BRD(90%)	SECURTY	35
3108A	15114	22AWG	OA ATC-BRD(90%)	SECURTY	35
3109A	15115	22AWG	OA ATC-BRD(90%)	SECURTY	35
9100/9275	28001	RG-59	AMT+AL(40%)	ANALOG-VIDEO	33
9100/9275	28001	RG-59	AMT+AL(40%)	MATV	1
ALPHA-5432	B1003	16AWG	UNSHLD	BMS	46
ALPHA-5433	B1004	16AWG	UNSHLD	BMS	46

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BELDEN ALPHA	MESC EQUALNT.	CONDUCTOR SIZE	SHIELDING TYPE/MTRL	APPLICATION	CAT PAGE
ALPHA-5434	B1005	16AWG	UNSHLD	BMS	46
ALPHA-5435	B1006	16AWG	UNSHLD	BMS	46
ALPHA-5437	B1007	16AWG	UNSHLD	BMS	46
ALPHA-5439	B1008	16AWG	UNSHLD	BMS	46
ALPHA-5439/12	B1009	16AWG	UNSHLD	BMS	46
ALPHA-5442	B1010	14AWG	UNSHLD	BMS	46
ALPHA-5443	B1011	14AWG	UNSHLD	BMS	46
ALPHA-5444	B1012	14AWG	UNSHLD	BMS	46
ALPHA-5445	B1013	14AWG	UNSHLD	BMS	46
ALPHA-5447	B1014	14AWG	UNSHLD	BMS	46
ALPHA-5449	B1015	14AWG	UNSHLD	BMS	46
ALPHA-5449/2	B1016	14AWG	UNSHLD	BMS	46
ALPHA-5532	B5001	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5533	B5002	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5534	B5003	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5535	B5004	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5537	B5005	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5539	B5006	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5539/12	B5007	16AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5542	B5008	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5543	B5009	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5544	B5010	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5545	B5011	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5547	B5012	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5549	B5013	14AWG	0A SHLID & ATC-BRD	BMS	47
ALPHA-5549/12	B5014	14AWG	0A SHLID & ATC-BRD	BMS	47
WESTPENN-295	12060	14AWG	0A SHLID	PBLC-ADDRESS	52
X	42007	14AWG	0A SHLID	FIRE ALARM	31
X	42008	12AWG	0A SHLID	FIRE ALARM	31
X	N2001	0.5MM2	0A SHLID	NURSE CALL	38
X	N2002	0.5MM2	0A SHLID	NURSE CALL	38
X	N2003	0.5MM2	0A SHLID	NURSE CALL	38
X	N2004	0.5MM2	0A SHLID	NURSE CALL	38
X	N2005	0.5MM2	0A SHLID	NURSE CALL	38
X	N2006	0.5MM2	0A SHLID	NURSE CALL	38
X	N2007	0.5MM2	0A SHLID	NURSE CALL	38
X	11008	18AWG	UNSHLID	BMS	48

MESC
SPECIALIZED CABLES

TECHNICAL INFORMATION

COAXIAL CABLE PARAMETERS

Electrical

Capacitance $C = \dfrac{24.148\ \varepsilon}{\text{Log}\left|\frac{D}{d}\right|}$ pF/m

Inductance $L = 0.459\ \text{Log}\left|\frac{D}{d}\right|\ \mu$ H/m

Characteristic Impedance $Zo = \dfrac{138}{\sqrt{\varepsilon}}\ \text{Log}\left|\frac{D}{d}\right|$ Ohm

Velocity of Propagation $Vp = \dfrac{100}{\sqrt{\varepsilon}}$ %

TABLE

Insulation Materials	Dielectric Constant ε
Cellular Polyethylene	1.56
Solid Polyethylene	2.26

Braiding Details

Braid angle $^{-} = \tan^{-1} \dfrac{2\pi (D+e)\ P}{C}$ Degrees

Braid picks per cm $P = \dfrac{0.394\ (C)\tan^{-}}{2\pi M}$

Braid angle $R = \dfrac{r}{n(C)\ (\cos^{-})}$ Ohms/Km

D = diameter under shield in mm.
C = number of carriers.
e = diameter of each wire in mm.
P = picks per cm.
$^{-}$ = braid angle.
n = number of wires in one carrier.
M = D + build of braid on one shield wall in mm.
R = DC Resistance of the Braid in Ohms / Km.
r = DC Resistance of each wire in Ohms / Km.

ELECTRICAL PARAMETERS FOR PLTC CABLES SPECIFICATION UL13

TEST PAR AMETERS	22 AWG	20 AWG	18 AWG	16 AWG
Conductor Resistance at 20˚C (Ω/Km) Max.				
Uncoated copper	57.6	35.8	22.8	14.2
Coated copper	59.7	37.2	23.6	14.9
Insulation Resistance at 20˚C (MΩ-Km) Min.(XLPE)	1000			
Spark Test Voltage (Volts) r.m.s.	1750			
Dielectric withstand Test (Volts DC for 2 Seconds)	2500			

DESIGN PARAMETERS FOR BALANCED PAIRS

Capacitance (C)

Unshielded Twisted Pair

$$= \frac{7.218\ \varepsilon}{\text{Log}\ \frac{1.3\ (D)}{f\ (d)}}$$

Shielded Twisted Pair

$$= \frac{12.14\ \varepsilon}{\text{Log}\ \frac{1.2\ (D)}{f\ (d)}}$$

Overall Shielded & Cabled

$$= \frac{9.515\ \varepsilon}{\text{Log}\ \frac{1.5\ (D)}{f\ (d)}}$$

Impedance Zo (ohms)

Unshielded Twisted Pair

$$= \frac{310\sqrt{\varepsilon}}{C}$$

Shielded Twisted Pair

$$= \frac{276}{\sqrt{\varepsilon}}\ \text{Log}\ \frac{1.2(D)}{f\ (d)}$$

Overall Shielded & Cabled

$$= \frac{347}{\sqrt{\varepsilon}}\ \text{Log}\ \frac{1.5(D)}{f\ (d)}$$

where
- C = Mutual capacitance in pF/m.
- ε = Dielectric constant of insulation Material (Refer Table 1)
- f = Stranding factor (Refer Table 2)
- Vp = Velocity of propagation (Percentage of Velocity of Light)
- D = Diameter over insulation in mm.
- d = Diameter over conductor in mm.

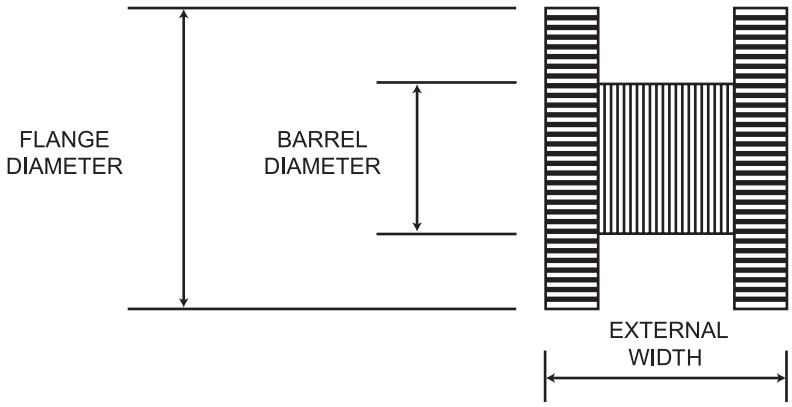
TABLE 1

Insulation Material	Dielectric Constant	Vp(%)
PVC	5.0	45
PVC(Semi-Rigid)	4.6	47
Polyethylene	2.26	66
Cellular Polyethylene	1.56	82
Polyproplyene	2.2	67

TABLE 2

Number of Strands	Stranding Factor (f)
1	1.000
7	0.939
19	0.970
37	0.980

M. E. S. C. WOODEN REEL DETAILS



DIMENSIONS AND WEIGHTS

REEL SIZE	FLANGE DIAMETER (mm)	BARREL DIAMETER (mm)	EXTERNAL WIDTH (mm)	EMPTY REEL WT (APPROX.) (KG.)
D - 5	500	250	372	9
D - 6	630	315	472	14
D - 7	710	355	522	18
D - 8	800	400	572	25
D - 9	900	450	632	32
D - 10	1000	500	726	40
D - 11	1100	560	806	60
D - 12	1250	630	896	85
D - 14	1400	710	996	105
D - 16	1600	800	1120	175

GUIDELINES FOR SELECTION OF REELS

Reel Size	Cable length = 1000 Meter Cable ¯ Range mm			Cable Length = 500 Meter Cable ¯ Range mm		
D-5		Upto	4.4		Upto	6.6
D-6	4.5	to	7.4	6.7	to	10.5
D-7	7.5	to	9.2	10.6	to	13.0
D-8	9.3	to	11.3	13.1	to	15.8
D-9	11.4	to	13.6	15.9	to	19.4
D-10	13.7	to	16.0	19.5	to	23.4
D-11	16.1	to	19.3	23.5	to	27.2
D-12	19.4	to	24.0	27.3	to	33.0
D-14	24.1	to	28.6	33.1	to	39.6
D-16	28.7	to	35.4	39.6	to	47.0

MAXIMUM PULLING TENSIONS

The maximum tension must not be exceeded when pulling a cable into ducts and conduits:

a. Using a pulling eye:

Tm = 7.16 X n X A

Tm = Maximum tension, (Kg)

n = No of conductors

A = Area of each conductor, sq. mm

b. Using a cable grip:

Tg = π x k x t x (D - d)

Tg = Maximum Tension, (Kg)

t = Jacket thickness, mm

D = Cable overall diameter, mm

k = 0.7 Kg/sq.mm for PVC, PE & Neoprene

The tension required to pull the cable in a straight duct can be calculated as follows:

Ts = L x w x f

Ts = Tension required to pull cable, Kg.

L = Length of cable, m

w = Weight of cable, Kg/m

f = Co-efficient of friction

Coefficient of friction

Duct Material	Jacket Material		
	PE	PVC	Neoprene
Asbestos Cement	0.56	0.56	0.68
Rigid PVC	0.34	0.52	0.53
Metal	0.36	0.55	0.60

Head Office:

Second Industrial Area, Phase 3
P.O. Box 585, Riyadh 11383, KSA
Tel.: +966 1 265 0555
Fax: +966 1 265 0712
E-mail: sales@MESCcables.com
Website: www.MESCcable.com

Branches and Regional Offices:

Riyadh Sales Office:

Munab 1, Building 3, Malaz Sitteen Street
P.O. Box 60536, Riyadh 11555, KSA
Tel.: +966 1 478 7574
Fax: +966 1 478 7973
E-mail: riyadh.sales@MESCcables.com

Jeddah Sales Office:

Al Aziziah Building 2, Baladiya Street
P.O. Box 122048, Jeddah 21332, KSA
Tel.: +966 2 664 0905
Fax: +966 2 661 2295
E-mail: jeddah.sales@MESCcables.com

Khobar Sales Office:

Silver Tower 8th Floor, King Abdul Aziz Street
P.O. Box 32257, Khobar 31952, KSA
Tel.: +966 3 899 4646
Fax: +966 3 899 8465
E-mail: khobar.sales@MESCcables.com

Dubai Regional Office:

Al-Hawai Tower, 101 Shaikh Zayed Road
P.O. Box 73750, Dubai, UAE
Tel.: +971 4 343 7885
Fax: +971 4 343 7488
E-mail: dubai.sales@MESCcables.com

Issue : August 2005