# **Detailed Specifications & Technical Data**

### **ENGLISH MEASUREMENT VERSION**



# 9689 Multi-Conductor - Type 2A



1-800-Belden1

# **General Description:**

IBM type 2A, 22 AWG solid bare copper conductors, non-plenum, flame-retardant foam polyethylene insulation, each pair individually Beldfoil® shielded + overall TC braid shield (65% coverage), PVC jacket.

# **Physical Characteristics (Overall)**

### Conductor

### AWG:

# Conductors	# Pairs	AWG	Stranding	<b>Conductor Material</b>
12	6	22	Solid	BC - Bare Copper

Total Number of Conductors: 12

#### Insulation

#### **Insulation Material:**

Insulation Material		
FRFPE - Flame Retardant Foam Polyethylene		
FRPE - Flame Retardant Polyethylene		

Insulation Resistance: DGM: >16000M Ohms, VGM: >2000M Ohms

### **Inner Shield**

### Inner Shield Material:

Layer #	Inner Shield Trade Name	Type	Inner Shield Material	Coverage (%)
1	Beldfoil®	Tape	Aluminum Foil-Polyester Tape	100
2		Braid	TC - Tinned Copper	65

### **Outer Shield**

### **Outer Shield Material:**

	Outer Shield Material		
Tape	Polyester Tape		

### **Outer Jacket**

### Outer Jacket Material:

Outer Jacket Material
PVC - Polyvinyl Chloride

Outer Jacket Ripcord: Yes

## **Overall Cable**

Overall Nominal Diameter: 0.324 x 0.466 in.

#### Pair

### Pair Color Code Chart:

Number	Color
1	Green/White Stripe & White/Green Stripe
2	Blue/White Stripe & White/Blue Stripe
3	Brown/White Stripe & White/Brown Stripe
4	Orange/White Stripe & White/Orange Stripe
1	Black & Orange
2	Red & Green

# **Mechanical Characteristics (Overall)**

Non-UL Temperature Rating:	-30°C To +75°C
Bulk Cable Weight:	93.500 lbs/1000 ft.
Max Recommended Pulling Tension:	146 lbs

Max. Recommended Family Fericion.

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### **Applicable Specifications and Agency Compliance (Overall) Applicable Standards & Environmental Programs** NEC/(UL) Specification: CMG CEC/C(UL) Specification: CMG EU Directive 2011/65/EU (ROHS II): Yes Other Specification: Verified IBM Type 2A **Customer Part Number Reference Specification:** IBM P/N: 4716739, 33G2773 **Flame Test UL Flame Test:** UL1685 FT4 Loading **CSA Flame Test:** FT4 Plenum/Non-Plenum Plenum (Y/N): No

82689

# **Surface Printing (Overall)**

**Plenum Number:** 

## **Electrical Characteristics (Overall)**

### Nom. Characteristic Impedance:

Description	Impedance (Ohm)
DGM (3-20M)	150
VGM (1k)	600
VGM (265k)	105

### Nom. Capacitance Conductor to Conductor:

Description	Freq. (MHz)	Start Freq. (MHz)	Stop Freq. (MHz)	Capacitance (pF/ft)
DGM	1			8.5

### **Maximum Capacitance Unbalance:**

Description	Capacitance (pF/ft)
VGM	2.625
DGM	1.000

# Nominal Velocity of Propagation:

Description	<b>VP</b> (%)
VGM	66
DGM	78

### Nom. Conductor DC Resistance:

DCR @ 20°C (	Ohm/1000 ft)
16.7	

#### Max. Attenuation:

Description	Freq. (MHz)	Attenuation (dB/100 m)
VGM	.1	.128
DGM	4	2.2
DGM	16	4.4
DGM	31.25	6.9
DGM	62.5	9.8
DGM	100	12.3
DGM	200	17.4
DGM	300	21.4

### Max. Operating Voltage - UL:

Voltage 300 V RMS

### Max. Recommended Current:

Current

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2.3 Amps per conductor @ 25°C

#### **Common Mode Attenuation:**

Description	Freq. (MHz)	Attenuation (dB/100 m)
DGM	62.5	10.6
DGM	100	13.4
DGM	200	19.0
DGM	300	23.3
DGM	550	31.5
DGM	600	32.9

# **Electrical Characteristics-Premise (Overall)**

### **Premise**

#### **Minimum NEXT:**

Freq. (MHz)	NEXT (dB)
4	58.0
16	50.4
31.25	46.1
62.5	41.5
100	38.5
200	34.0
300	31.3

## **Notes (Overall)**

Notes: IBM qualified Type 2A media cable for use in IBM cabling systems.

# **Put Ups and Colors:**

Item #	Putup	Ship Weight	Color	Notes	Item Desc
9689 0101000	1,000 FT	80.000 LB	BLACK	CZ	2PR#22 SHLD 4PR#22PE PVC

### Notes:

C = CRATE REEL PUT-UP.

Z = FINAL PUT-UP LENGTH MAY VARY (+ OR -) 10% FOR SPOOLS OR REELS AND(+ OR -) 5% FOR UNREEL CARTONS FROM LENGTH SHOWN.

Revision Number: 2 Revision Date: 01-18-2013

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