

HITACHI CABLE MANCHESTER

Customer Specification

HCM - 49007/160

RFQ #: 33605

ITEM DESCRIPTION: COMPOSITE ELECTRONIC CABLE, CONSISTING OF 160 CONDUCTORS, 20 AND 22 AWG, BARRIER TAPED WITH A PVC JACKET.
(UL) 2464, CSA I/II A/B

COMPONENT:

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0297" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0144" AVG WALL

<u>COND #</u>	<u>COLOR</u>
1	GRY
3	GRY-BRN-BRN
5	GRY-ORN-ORN
7	GRY-GRN-GRN

<u>COND #</u>	<u>COLOR</u>
2	GRY-BLK-BLK
4	GRY-RED-RED
6	GRY-YEL-YEL

CABLING:

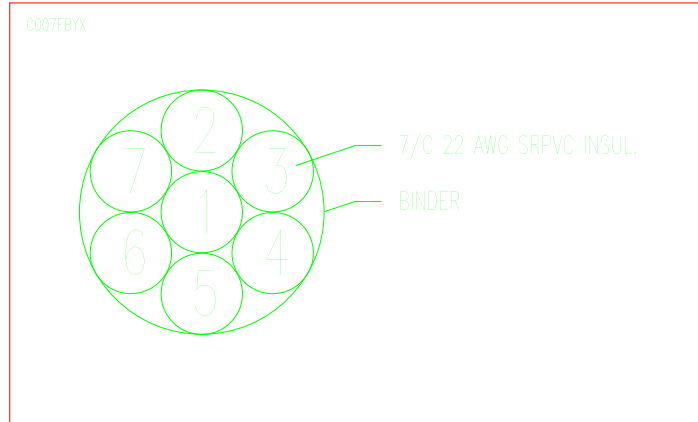
THE COMPONENTS ARE CABLED TOGETHER WITH A LEFT HAND LAY AND WRAPPED WITH A TAPE BINDER.

HITACHI CABLE MANCHESTER, INC. 900 Holt Avenue-East Industrial Park Manchester, N.H. 03109 (603) 669-4347	Drawn By: KDA Date: 11/14/02 Checked By: MOS Date: 11/14/02 Issued By: KDA Date: 11/14/02	REV# B
	THIS PRODUCT MADE IN THE U.S.A.	
ITEM: 49007-0160-F50-XXX-000-S-01000-1842-00	PAGE 1 of 13 Approved By: Date:	

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COMPONENT A:

CONDUCTOR:

20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION:

SEMI-RIGID PVC
.059" NOM OD
.0104" AVG WALL

COND # COLOR

1	GRY-BLK
3	GRY-RED
5	GRY-VIO
7	GRY-BLK-RED
9	GRY-VIO-WHT
11	GRY-PNK-YEL

COND # COLOR

2	GRY-BRN
4	GRY-ORN
6	GRY-PNK
8	GRY-YEL-VIO
10	GRY-PNK-RED

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COMPONENT B:

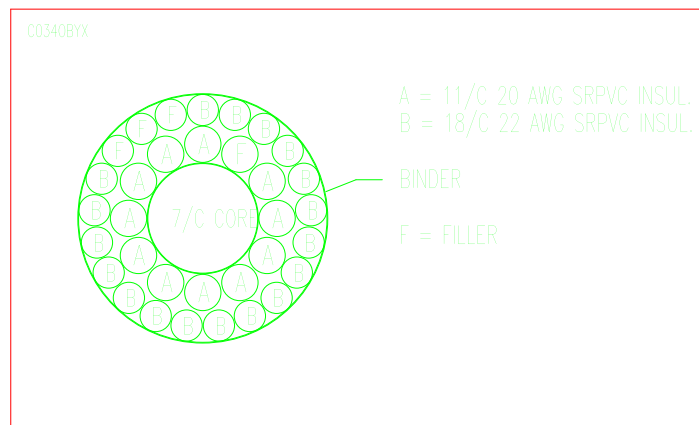
CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0297" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	GRY-BLU-BLU	2	GRY-VIO-VIO
3	GRY-WHT-WHT	4	GRY-YEL
5	GRY-GRN	6	GRY-BLU
7	GRY-WHT	8	GRY-BLK-BRN
9	GRY-BLK-ORN	10	GRY-BLK-YEL
11	GRY-BLK-GRN	12	GRY-BLK-BLU
13	GRY-BLK-VIO	14	GRY-BLK-WHT
15	GRY-BRN-RED	16	GRY-BRN-ORN
17	GRY-BRN-YEL	18	GRY-BRN-GRN

CABLING:

ELEVEN CONDUCTORS 20 AWG 19T PLUS EIGHTEEN CONDUCTORS 22 AWG 19T ALONG WITH FILLERS, ARE CABLED AROUND THE CORE WITH A RH LAY, AND WRAPPED WITH A TAPE BINDER.



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COMPONENT C:

CONDUCTOR:

22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION:

SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

COND # COLOR

1	GRY-BRN-BLU
3	GRY-BRN-WHT
5	GRY-RED-YEL
7	GRY-RED-BLU
9	GRY-RED-WHT
11	GRY-ORN-GRN
13	GRY-ORN-VIO
15	GRY-YEL-GRN
17	GRY-YEL-WHT
19	GRY-GRN-VIO
21	GRY-BLU-VIO
23	GRY-PNK-BLK

COND # COLOR

2	GRY-BRN-VIO
4	GRY-RED-ORN
6	GRY-RED-GRN
8	GRY-RED-VIO
10	GRY-ORN-YEL
12	GRY-ORN-BLU
14	GRY-ORN-WHT
16	GRY-YEL-BLU
18	GRY-GRN-BLU
20	GRY-GRN-WHT
22	GRY-BLU-WHT
24	GRY-PNK-ORN

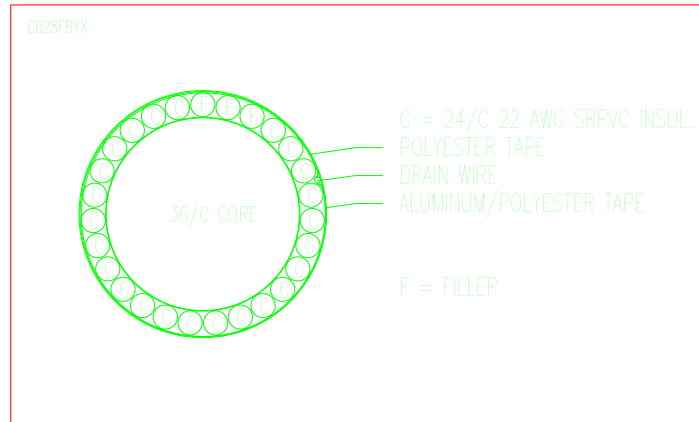
CABLING:

TWENTY-FOUR CONDUCTORS 22 AWG 19T ALONG WITH FILLERS ARE CABLED AROUND THE CORE. THE ENTIRE CORE IS THEN WRAPPED WITH A POLYESTER TAPE, PLUS AN OVERALL ALUMINUM/POLYESTER TAPE (ALUMINUM FACING IN). A 20 AWG 19T DRAIN WIRE IS PULLED IN BETWEEN THE TWO THE TWO TAPES. MINIMUM 25% OVERLAP ON TAPES.

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COMPONENT - GROUP (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-BLK-BRN

COND # COLOR
2 WHT-BLK-ORN

COMPONENT - GROUP #1 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-BLK-RED
3 WHT-BLK-GRN
5 WHT-BLK-BLK
7 WHT-BLU-VIO

COND # COLOR
2 WHT-BLK-YEL
4 WHT-BLK-GRY
6 WHT-BLK
8 WHT-BLU-GRY

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COMPONENT GROUP #2 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 YEL-BLK

COND # COLOR
2 YEL-BLU

COMPONENT - GROUP #2 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

COND # COLOR
1 YEL-BLK-BRN
3 YEL-BLK-ORN
5 YEL-BLK-BLU
7 YEL-BLK-GRY

COND # COLOR
2 YEL-BLK-RED
4 YEL-BLK-GRN
6 YEL-BLK-VIO
8 YEL-BLK-WHT

COMPONENT - GROUP #3 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-BLK-BLU

COND # COLOR
2 WHT-BLK-VIO

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COMPONENT GROUP #3 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	WHT-BRN	2	WHT-BRN-RED
3	WHT-BRN-ORN	4	WHT-BRN-YEL
5	WHT-BRN-BLU	6	WHT-BRN-VIO
7	WHT-BRN-GRY	8	WHT-BRN-BRN

COMPONENT - GROUP #4 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	YEL-GRN-WHT	2	YEL-ORN

COMPONENT - GROUP #4 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	YEL-BLK-BLK	2	YEL-BLU-VIO
3	YEL-BLU-GRY	4	YEL-BLU-WHT
5	YEL-BRN-RED	6	YEL-BRN-ORN
7	YEL-BRN-GRN	8	YEL-BRN-BLU

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COMPONENT - GROUP #5 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-BLU

COND # COLOR
2 WHT-BRN-GRN

COMPONENT - GROUP #5 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-GRN-BLU
3 WHT-GRN-GRY
5 WHT-GRY-YEL
7 WHT-ORN-GRN

COND # COLOR
2 WHT-GRN-VIO
4 WHT-GRY
6 WHT-ORN-YEL
8 WHT-ORN-GRY

COMPONENT - GROUP #6 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 YEL-ORN-VIO

COND # COLOR
2 YEL-ORN-WHT

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COMPONENT - GROUP #6 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	YEL-BRN-VIO	2	YEL-BRN-GRY
3	YEL-BRN-WHT	4	YEL-BRN-BRN
5	YEL-GRN	6	YEL-GRN-BLU
7	YEL-GRN-VIO	8	YEL-GRN-GRY

COMPONENT GROUP #7 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	WHT-GRN	2	WHT-ORN-VIO

COMPONENT GROUP #7 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	WHT-ORN-ORN	2	WHT-ORN
3	WHT-RED-YEL	4	WHT-RED-GRN
5	WHT-RED-BLU	6	WHT-RED-VIO
7	WHT-RED-GRY	8	WHT-RED-RED

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COMPONENT GROUP #8 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 YEL-RED

COND # COLOR
2 YEL-RED-GRN

COMPONENT GROUP #8 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

COND # COLOR
1 YEL-GRN-GRN
3 YEL-GRY
5 YEL-ORN-GRN
7 YEL-ORN-GRY

COND # COLOR
2 YEL-BRN
4 YEL-GRY-WHT
6 YEL-ORN-BLU
8 YEL-ORN-ORN

COMPONENT GROUP #9 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

COND # COLOR
1 WHT-ORN-BLU

COND # COLOR
2 WHT-RED-ORN

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COMPONENT GROUP #9 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	WHT-RED	2	WHT-VIO
3	WHT-VIO-GRY	4	WHT-YEL
5	WHT-YEL-GRN	6	WHT-YEL-BLU
7	WHT-YEL-VIO	8	WHT-YEL-YEL

COMPONENT GROUP #10 (D):

CONDUCTOR: 20 AWG 19/32 TINNED COPPER
.0376" NOM OD

INSULATION: SEMI-RIGID PVC
.058" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	YEL-RED-VIO	2	YEL-VIO-WHT

COMPONENT GROUP #10 (E):

CONDUCTOR: 22 AWG 19/34 TINNED COPPER
.0296" NOM OD

INSULATION: SEMI-RIGID PVC
.050" NOM OD
.0104" AVG WALL

<u>COND #</u>	<u>COLOR</u>	<u>COND #</u>	<u>COLOR</u>
1	YEL-RED-ORN	2	YEL-RED-BLU
3	YEL-RED-GRY	4	YEL-RED-WHT
5	YEL-RED-RED	6	YEL-VIO
7	YEL-VIO-GRY	8	YEL-WHT

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GROUP CABLING:

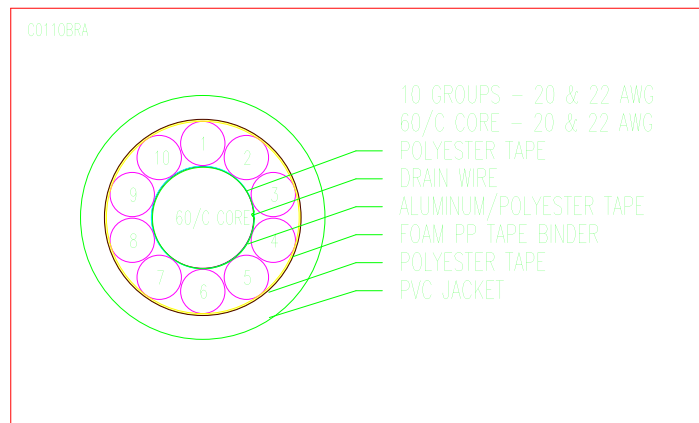
EIGHT CONDUCTORS 22 AWG 19T PLUS TWO CONDUCTORS 20 AWG 19T ALONG WITH FILLER , ARE CABLED WITH A LH LAY.

OVERALL CABLING

TEN SUB-GROUPS CABLED AROUND THE 60/C CORE WITH A LH LAY, AND THEN WRAPPED WITH A FOAM POLYPROPYLENE TAPE, PLUS AN OVERALL POLYESTER TAPE. MINIMUM 25% OVERLAP ON BOTH TAPES.

OVERALL JACKET:

FLEX PVC BLACK
1.189" NOM OD
.134" AVG WALL



MARKING:

THE CABLE IS IDENTIFIED WITH THE FOLLOWING PRINT LEGEND:

HCM 49007 - 31/C 20 AWG & 129/C 22 AWG -  AWM

STYLE 2464 80C 300V - LL50890 CSA AWM I/II A/B

FT1 - Z/YY (XXXX)

WHERE: Z = MONTH OF MFG.

YY = YEAR OF MFG.

XXXX = JOB NUMBER

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AGENCY APPROVALS:

U.L. STYLE 2464, 80°C, 300V.

USE: INTERNAL WIRING OR EXTERNAL INTERCONNECTION OF ELECTRONIC EQUIPMENT (SUCH AS DESK-TYPE CALCULATORS, DICTATING MACHINES OR X-RAY EQUIPMENT) VW-1 AWM.

CANADIAN STANDARDS ASSOCIATION AWM FT1.

TYPICAL ELECTRICAL CHARACTERISTICS:

22 AWG COMPONENT	CONDUCTOR RESISTANCE:	15.5 OHMS/M' MAX @ 20C
20 AWG COMPONENT	CONDUCTOR RESISTANCE:	9.76 OHMS/M' MAX @ 20C
	TEMPERATURE RATING (CABLE):	105C
	VOLTAGE RATING (CABLE):	300V

Rev	Revision	Date	By	Appvd	PAGE 13 of 13
A	UPDATED RFQ DETAILS	03/17/04	KDA	KDA	
B	UPDATED RFQ DETAILS	02/21/07	ZD	PF	