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REPORT

on

COMPONENT - Connectors for Use in
Data, Signal, Control and Power Applications

***Tyco electronics corp**
Middletown pa

DESCRIPTION

PRODUCT COVERED:

USR, CNR Component Connectors,

Cat. No. HMN, followed by –012, -017, -Q1, -Q2, followed by -M, -F.

Cat. No. PIN, followed by –Q1, -Q2, followed by -M, -F.

Cat. No. HDC, followed by –HSB, followed by -006, -012, followed by M, F.

Cat. No. HDC, followed by –HSB, followed by -006, followed by M, F, followed by 7-12.

USR, Component Connectors,

Cat. No. HMN, followed by -001, -D2, -S2, followed by -MD, -FD.

Cat. No. HMN, followed by -001, -D2, -002, followed by -MC, -FC.

Cat. No. HMN, followed by –D2, -S2, -70A, –003, -004, -006, -008, -020, -025, -009, -Q3, followed by -M, -F.

Cat. No. HMN, followed by –005, followed by -MS, -FS.

Cat. No. HMN, followed by –006, followed by -PM, -PF.

Cat. No. PIN, followed by -Q3, followed by -M, -F.

USR, Component Connectors,

Cat. Nos. HDC-HK4/0-004-M, HDC-HK4/0-004-F, HDC-HK4/2-006-M, HDC-HK4/2-006-F, HDC-HK4/8-012-M, HDC-HK4/8-012-F, HDC-HK6/12-018-M, HDC-HK6/12-018-F, HDC-HWK6/6-M, HDC-HWK6/6-F, HDC-HWK6/6-012-M, HDC-HWK6/6-012-F, HDC-HWK3/3/6-012-M, HDC-HWK3/3/6-012-F.

Cat. Nos. HDC-HK-12/2-014-M, HDC-HK-12/2-014-F, HDC-HK12/2-014-M, HDC-HK12/2-014-F, HDC-HK-6/36-042-M, HDC-HK-6/36-042-F, HDC-HK6/36-042-M, HDC-HK6/36-042-F, HDC-HK8/24-032-M, HDC-HK8/24-032-F.

Cat. Nos. HCM650-95/120-MC, HCM650-95/120-FC.

GENERAL:

These devices are multi-pole connectors intended for factory assembly on copper wire sizes as indicated in Ratings table below where the acceptability of combinations is determined by UL LLC. The devices are identified as follows:

USR indicates investigation to United States Standards, UL 1977.

CNR indicates investigation to Canadian National Standards, C22.2 No. 182.3.

RATINGS:

Cat. Nos.	Voltage Vac/Vdc	USR Ampere (A)	CNR Ampere (A)
HMN-001-MD HMN-001-FD	600	200	-
HMN-D2-M HMN-D2-F	600	100	-
HMN-D2-MD HMN-D2-FD	600	100	-
HMN-S2-M HMN-S2-F	600	40	-
HMN-S2-MD HMN-S2-FD	600	40	-
HMN-70A-M HMN-70A-F	600	70	-
HMN-005-MS HMN-005-FS	400	16	-
HMN-006-PM HMN-006-PF	830	16	-
HDC-HSB-006M HDC-HSB-006F	600	35	35
HDC-HK4/0-004-M HDC-HK4/0-004-F	600	80	-
HDC-HK4/2-006-M HDC-HK4/2-006-F	Power:600 Signal:400	Power:80 Signal:16	-
HDC-HK4/8-012-M HDC-HK4/8-012-F	Power:400 Signal:400	Power:80 Signal:16	-
HDC-HK6/12-018-M HDC-HK6/12-018-F	Power:600 Signal:400	Power:30 Signal:10	-
HDC-HWK6/6-M HDC-HWK6/6-F	Power:600 Signal:400	Power:35 Signal:16	-
HDC-HWK3/3/6-012-M HDC-HWK3/3/6-012-F	High Power:600 Low Power: 600 Signal:400	High Power:100 Low Power: 40 Signal:16	-

Cat. Nos.	Voltage Vac/Vdc	USR Ampere (A)	CNR Ampere (A)	Conductor Sizes, Str
HMN-001-MC HMN-001-FC	600	200	-	70 mm^2
HMN-D2-MC HMN-D2-FC	600	100	-	35 mm^2
HMN-002-MC HMN-002-FC	600	70	-	16 mm^2
HMN-003-M HMN-003-F	600	40	-	10 AWG
HMN-004-M HMN-004-F	600	40	-	10 AWG
HMN-006-M HMN-006-F	500	16	-	14 AWG
HMN-008-M HMN-008-F	400	16	-	14 AWG
HMN-012-M HMN-012-F	250	10	10	14 AWG
HMN-017-M HMN-017-F	160	10	10	14 AWG
HMN-020-M HMN-020-F	500	16	-	14 AWG
HMN-025-M HMN-025-F	50	5	-	0.5 mm^2
HMN-009-M HMN-009-F	50	5	-	0.5 mm^2
HMN-Q1-M HMN-Q1-F PIN-Q1-M PIN-Q1-F	50	16	16	14 AWG
HMN-Q2-M HMN-Q2-F PIN-Q2-M PIN-Q2-F	50	10	10	14 AWG
HMN-Q3-M HMN-Q3-F PIN-Q3-M PIN-Q3-F	50	5	-	0.5 mm^2
HDC-HK-12/2-014-M HDC-HK-12/2-014-F	Power:600 Signal:250	Power:30 Signal:10	-	Power:10 AWG Signal:14 AWG
HDC-HK-6/36-042-M HDC-HK-6/36-042-F	Power:600 Signal:160	Power:30 Signal:10	-	Power:10 AWG Signal:14 AWG
HDC-HK8/24-032-M HDC-HK8/24-032-F	Power:400 Signal:160	Power:16 Signal:10	-	Power:14 AWG Signal:14 AWG
HCM650-95/120-MC HCM650-95/120-FC	600	350	-	120 mm^2

Disconnecting Use - see Sec Gen for required marking

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

Use - For use only in or with complete equipment where the acceptability of the combination is determined by UL LLC.

Conditions of Acceptability - The following are among the considerations to be made when evaluating the device in the end-use product.

Interruption of Current

1. These devices are not suitable for interrupting the flow of current by connecting or disconnecting the mating connector.

Current-Carrying Capability and Current Ratings

2. These devices have been subjected to the Temperature test with the rated currents and maximum temperature rise and recorded temperature (adjusted to 25°C ambient) values tabulated below:

Cat Nos.	Contact	Wire size	Current, A	Maximum Temperature, °C		Represent
				Rise	Recorded Temperature	
HMN-001-MC mating with HMN-001-FC	Pin	70 mm²	200	-	86.4	HMN-001-MD
	Socket			-	84.1	HMN-001-FD
HMN-D2-MC mating with HMN-D2-FC	Pin	35 mm²	100	-	56.3	HMN-D2-M
	Socket			-	56.5	HMN-D2-F HMN-D2-MD HMN-D2-FD
HMN-002-MC mating with HMN-002-FC	Pin	16 mm²	70	-	55.0	HMN-70A-M
	Socket			-	57.5	HMN-70A-F
HMN-004-M mating with HMN-004-F	Pin	10 AWG	40	-	76.2	HMN-S2-M
	Socket			-	72.9	HMN-S2-F HMN-S2-MD HMN-S2-FD HMN-003-M HMN-003-F
HMN-017-M mating with HMN-017-F	Pin	14 AWG	10	24.0	49.0	HMN-012-M
	Socket			23.5	48.5	HMN-012-F
HMN-020-M mating with HMN-020-F	Pin	14 AWG	16	-	81.5	HMN-005-MS
	Socket			-	80.5	HMN-005-FS HMN-006-M HMN-006-F HMN-008-M HMN-008-F
HMN-025-M mating with HMN-025-F	Pin	0.5 mm²	5	-	81.3	HMN-009-M
	Socket			-	81.5	HMN-009-F
HMN-Q1-M mating with HMN-Q1-F	Pin	14 AWG	16	10.7	35.7	PIN-Q1-M
	Socket			13.7	38.7	PIN-Q1-F
HMN-Q2-M mating with HMN-Q2-F	Pin	14 AWG	10	14.9	39.9	PIN-Q2-M
	Socket			15.9	40.9	PIN-Q2-F

Cat Nos.	Contact	Wire size AWG	Current, A	Maximum Temperature, °C		Represent
				Rise	Recorded Temperature	
HMN-Q3-M mating with HMN-Q3-F	Pin	0.5 mm²	5	-	58.8	PIN-Q3-M PIN-Q3-F
	Socket			-	66.6	
HDC-HSB-006M mating with HDC-HSB-006F	Pin	10 AWG	35	29.7	54.7	-
	Socket			27.9	52.9	
HDC-HK4/8-012-M mating with HDC-HK4/8-012-F	Power Pin	16 mm²	80	-	74.5	HK4/0-004-M
	Power Socket			-	78.9	HK4/0-004-F
	Signal Pin	2.5 mm²	16	-	56.2	HK4/2-006-M
	Signal Socket			-	56.9	HK4/2-006-F
HDC-HK-12/2-014-M mating with HDC-HK-12/2-014-F	Power Pin	10 AWG	30	-	80.0	-
	Power Socket			-	79.5	
	Signal Pin	14 AWG	10	-	50.0	
	Signal Socket			-	51.9	
HDC-HK-6/36-042-M mating with HDC-HK-6/36-042-F	Power Pin	10 AWG	30	-	72.7	HK6/12-018-M HK6/12-018-F
	Power Socket			-	76.6	
	Signal Pin	14 AWG	10	-	61.2	
	Signal Socket			-	57.8	
HDC-HK8/24-032-M mating with HDC-HK8/24-032-F	Power Pin	14 AWG	16	-	63.3	-
	Power Socket			-	60.7	
	Signal Pin	14 AWG	10	-	67.7	
	Signal Socket			-	61.8	
HDC-HWK6/6-M mating with HDC-HWK6/6-F	Power Pin	10 AWG	35	-	69.9	-
	Power Socket			-	70.7	
	Signal Pin	14 AWG	16	-	62.3	
	Signal Socket			-	60.2	
HDC-HWK3/3/6-012-M mating with HDC-HWK3/3/6-012-F	High Power Pin	35 mm²	100	-	64.2	-
	High Power Socket			-	63.2	
	Low Power Pin	6 mm²	40	-	64.8	
	Low Power Socket			-	67.7	
	Signal Pin	2.5 mm²	16	-	53.7	
	Signal Socket			-	54.7	
HCM650-95/120-MC mating with HCM650-95/120-FC	Pin	120 mm²	350	-	90.5	-
	Socket			-	89.6	

Insulating Materials

3. These devices employ insulating materials with properties as tabulated below at the minimum thickness employed in the connector housing, the suitability of the insulating materials based on the documented values shall be determined in the end-use application. Please note the values specified in the table when multiple materials are indicated represent the minimum values for the group of materials.

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI(++)	HAI(++)	RTI Elec	Max Operating Temp, ^{0}C
HMN-001-MC HMN-001-FC	A	0.7 mm	(+)	(+)	(+)	130	125
HMN-D2-MC HMN-D2-FC	A	0.45 mm	(+)	(+)	(+)	130	125
HMN-002-MC HMN-002-FC	A	0.5 mm	(+)	(+)	(+)	130	125
HMN-004-M HMN-004-F	A	0.4 mm	(+)	(+)	(+)	130	125
HMN-017-M	A	0.6 mm	(+)	(+)	(+)	130	125
HMN-017-F		0.5 mm					
HMN-020-M	A	0.7 mm	(+)	(+)	(+)	130	125
HMN-020-F		0.5 mm					
HMN-025-M HMN-025-F	A	0.35 mm	(+)	(+)	(+)	130	125
HMN-Q1-M	A	0.8 mm	V-2	3	4	130	125
HMN-Q1-F	A	0.5 mm	(+)	(+)	(+)	130	125
HMN-Q2-M HMN-Q2-F	A	0.5 mm	(+)	(+)	(+)	130	125
HMN-Q3-M HMN-Q3-F	A	0.5 mm	(+)	(+)	(+)	130	125
PIN-Q1-M PIN-Q1-F	A	0.8 mm	V-2	3	4	130	125
PIN-Q2-M PIN-Q2-F	A	0.5 mm	(+)	-	-	130	125
PIN-Q3-M PIN-Q3-F	A	0.5 mm	(+)	-	-	130	125
HDC-HSB-006M	B	0.8 mm	HB	-	-	80	80
HDC-HSB-006F		1.0 mm					
HDC-HK4/8-012-M HDC-HK4/8-012-F	B	0.7 mm	HB	-	-	80	80
HDC-HK-12/2-014-M HDC-HK-12/2-014-F	B	0.4 mm	HB	-	-	80	80
HDC-HK-6/36-042-M	B	0.6 mm	HB	-	-	80	80
HDC-HK-6/36-042-F		0.55 mm					
HDC-HK8/24-032-M	B for body A for cover	0.55 mm	HB	-	-	80	80
HDC-HK8/24-032-F		0.6 mm For Cover 1.0 mm					

Cat. No.	Insulating Material (#)	Measured Minimum Thickness	Flame Class	HWI(++)	HAI(++)	RTI Elec	Max Operating Temp, ^{0}C
HDC-HWK6/6-M	B	0.8 mm	HB	-	-	80	80
HDC-HWK6/6-F		0.7 mm					
HDC-HWK3/3/6-012-M	B	0.5 mm	HB	-	-	80	80
HDC-HWK3/3/6-012-F		0.8 mm					
HCM650-95/120-MC	C for body A for cover	1.2 mm	V-2	3	4	130	125
HCM650-95/120-FC		1.4 mm For cover 1.2 mm					

Note:

(#) – Code for Insulating Body Material.

(+): Thickness is less than the minimum Recognized material thickness of A, B, as such no assigned Flame class. UL 746C (12mm) Flammability test conducted.

(++): These PLCs are based on the minimum Recognized material thickness.

Mating Connectors

4. These devices have only been assessed for use with specific types of connectors within their product family. They have not been assessed to operate with any other similar devices from any other manufacturer.

Terminations

5. Crimp contacts of Cat. Nos. as tabulated below are intended for crimp termination on stranded copper conductor using the tooling shown as tabulated below for information purpose only.

Contacts Cat. Nos.	Conductor Sizes	Crimp tool
CDM, CDF, DDM, DDF, CEM, CEF, DEM, DEF	14 AWG	ILL. 30
CMM, DMM, CMF, DMF	10 AWG	ILL. 31
CHM, CHF	70 mm^2	ILL. 32
CNM, CNF	35 mm^2	ILL. 32
CSM, CSF	16 mm^2, 25 mm^2	ILL. 32
CAM, CAF, DAM, DAF	0.5 mm^2	ILL. 30
HCM650-120-M, HCM650-120-F	120 mm^2	ILL. 32

Miscellaneous

6. The enclosure of the device has live parts that may be exposed to user contact when the connector is energized. The device is suitable for use only within an acceptable enclosure.