

Low-end & low-cost Copper Products



Mulder-Hardenberg bv, The Netherlands
Tel.: +31 (0)23 - 531 91 84
infonl@m-h.biz

Mulder-Hardenberg N.V., Belgium
Tel.: +32 (0)3 - 660 13 20
infobe@m-h.biz

Mulder-Hardenberg GmbH, Germany
Tel.: +49 (0)6192 - 97 91 85
infode@m-h.biz

www.mulder-hardenberg.com

Copper Components

Copper Identification

Cabling standards

TIA	ISO	Freq.	Mb/ps
Category 5	Class D	100 Mhz	100Mb
Category 5e	Class D	100 Mhz	100/1000Mb
Category 6	Class E	250 Mhz	1000Mb
Category 6A	Class Ea	500 Mhz	10000Mb
Category 7	Class F	600 Mhz	10000Mb
Category 7A	Class Fa	1000 Mhz	40000Mb

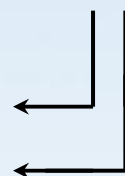
Cable screen / Pair screen

XX/XTP

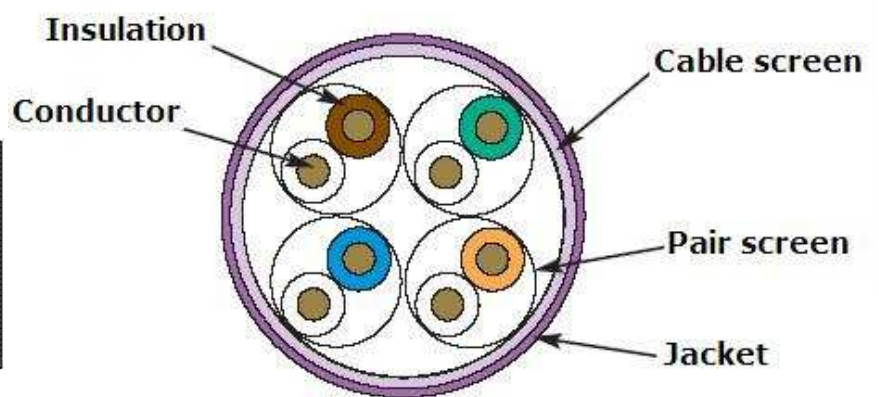
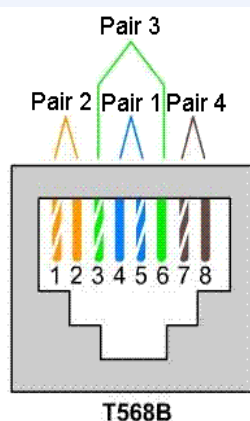
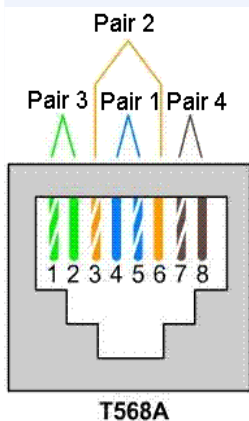
U= Unscreened
F= Foil screened

S= Braid screened

SF= Braid and Foiled screened



U= Unscreened
F= Foil screened



Copper Components

Cat5e U-UTP patch cables

- _ Unshielded CAT 5e patch cables.
- _ 2 x RJ45 connectors.
- _ Connection 1:1.
- _ Other colors available on request.
- _ Other lengths available on request.



	Grey	Red	Yellow	Green	Blue	Black	White
0,5m	MH5-UU-005	MH5-UU-005/R	MH5-UU-005/Y	MH5-UU-005/G	MH5-UU-005/B	MH5-UU-005/BL	MH5-UU-005/WH
1,0m	MH5-UU-010	MH5-UU-010/R	MH5-UU-010/Y	MH5-UU-010/G	MH5-UU-010/B	MH5-UU-010/BL	MH5-UU-010/WH
2,0m	MH5-UU-020	MH5-UU-020/R	MH5-UU-020/Y	MH5-UU-020/G	MH5-UU-020/B	MH5-UU-020/BL	MH5-UU-020/WH
3,0m	MH5-UU-030	MH5-UU-030/R	MH5-UU-030/Y	MH5-UU-030/G	MH5-UU-030/B	MH5-UU-030/BL	MH5-UU-030/WH
5,0m	MH5-UU-050	MH5-UU-050/R	MH5-UU-050/Y	MH5-UU-050/G	MH5-UU-050/B	MH5-UU-050/BL	MH5-UU-050/WH
7,0m	MH5-UU-070	MH5-UU-070/R	MH5-UU-070/Y	MH5-UU-070/G	MH5-UU-070/B	MH5-UU-070/BL	MH5-UU-070/WH
10,0m	MH5-UU-100	MH5-UU-100/R	MH5-UU-100/Y	MH5-UU-100/G	MH5-UU-100/B	MH5-UU-100/BL	MH5-UU-100/WH
15,0m	MH5-UU-150	MH5-UU-150/R	MH5-UU-150/Y	MH5-UU-150/G	MH5-UU-150/B	MH5-UU-150/BL	MH5-UU-150/WH
20,0m	MH5-UU-200	MH5-UU-200/R	MH5-UU-200/Y	MH5-UU-200/G	MH5-UU-200/B	MH5-UU-200/BL	MH5-UU-200/WH
30,0m	MH5-UU-300	MH5-UU-300/R	MH5-UU-300/Y	MH5-UU-300/G	MH5-UU-300/B	MH5-UU-300/BL	MH5-UU-300/WH

Copper Components

Cat5e F-UTP patch cables

- _ Foil shielded CAT 5e patch cables.
- _ 2 x RJ45 connectors.
- _ Connection 1:1.
- _ Other colors available on request.
- _ Other lengths available on request.

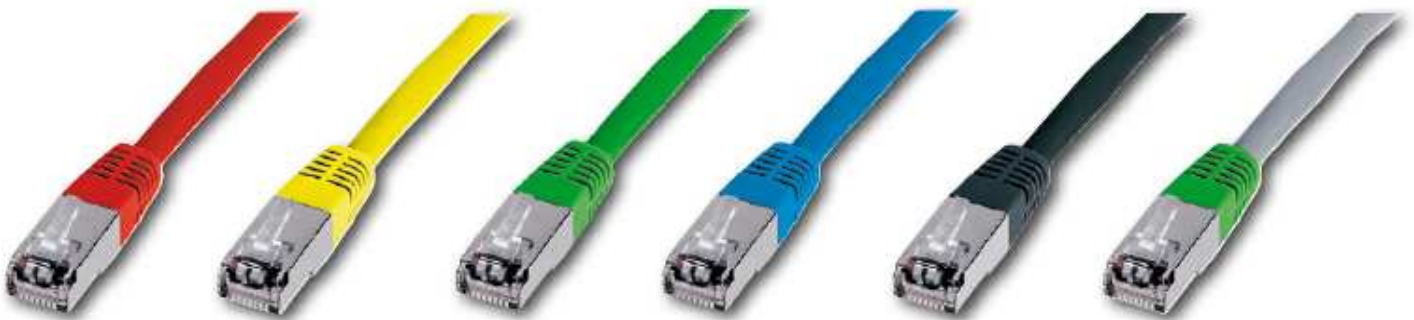


	Grey	Red	Yellow	Green	Blue	Black
0,5m	MH5-FU-005	MH5-FU-005/R	MH5-FU-005/Y	MH5-FU-005/G	MH5-FU-005/B	MH5-FU-005/BL
1,0m	MH5-FU-010	MH5-FU-010/R	MH5-FU-010/Y	MH5-FU-010/G	MH5-FU-010/B	MH5-FU-010/BL
2,0m	MH5-FU-020	MH5-FU-020/R	MH5-FU-020/Y	MH5-FU-020/G	MH5-FU-020/B	MH5-FU-020/BL
3,0m	MH5-FU-030	MH5-FU-030/R	MH5-FU-030/Y	MH5-FU-030/G	MH5-FU-030/B	MH5-FU-030/BL
5,0m	MH5-FU-050	MH5-FU-050/R	MH5-FU-050/Y	MH5-FU-050/G	MH5-FU-050/B	MH5-FU-050/BL
7,0m	MH5-FU-070	MH5-FU-070/R	MH5-FU-070/Y	MH5-FU-070/G	MH5-FU-070/B	MH5-FU-070/BL
10,0m	MH5-FU-100	MH5-FU-100/R	MH5-FU-100/Y	MH5-FU-100/G	MH5-FU-100/B	MH5-FU-100/BL
15,0m	MH5-FU-150	MH5-FU-150/R	MH5-FU-150/Y	MH5-FU-150/G	MH5-FU-150/B	MH5-FU-150/BL
20,0m	MH5-FU-200	MH5-FU-200/R	MH5-FU-200/Y	MH5-FU-200/G	MH5-FU-200/B	MH5-FU-200/BL
30,0m	MH5-FU-300	MH5-FU-300/R	MH5-FU-300/Y	MH5-FU-300/G	MH5-FU-300/B	MH5-FU-300/BL
50,0m	MH5-FU-500					

Copper Components

Cat5e SF-UTP patch cables

- _ Foil and braid shielded CAT 5e patch cables.
- _ 2 x RJ45 connectors.
- _ Connection 1:1.
- _ Other colors available on request.
- _ Other lengths available on request.



	Grey	Red	Yellow	Green	Blue	Black
0,5m	MH5-SFU-005	MH5-SFU-005/R	MH5-SFU-005/Y	MH5-SFU-005/G	MH5-SFU-005/B	MH5-SFU-005/BL
1,0m	MH5-SFU-010	MH5-SFU-010/R	MH5-SFU-010/Y	MH5-SFU-010/G	MH5-SFU-010/B	MH5-SFU-010/BL
2,0m	MH5-SFU-020	MH5-SFU-020/R	MH5-SFU-020/Y	MH5-SFU-020/G	MH5-SFU-020/B	MH5-SFU-020/BL
3,0m	MH5-SFU-030	MH5-SFU-030/R	MH5-SFU-030/Y	MH5-SFU-030/G	MH5-SFU-030/B	MH5-SFU-030/BL
5,0m	MH5-SFU-050	MH5-SFU-050/R	MH5-SFU-050/Y	MH5-SFU-050/G	MH5-SFU-050/B	MH5-SFU-050/BL
7,0m	MH5-SFU-070	MH5-SFU-070/R	MH5-SFU-070/Y	MH5-SFU-070/G	MH5-SFU-070/B	MH5-SFU-070/BL
10,0m	MH5-SFU-100	MH5-SFU-100/R	MH5-SFU-100/Y	MH5-SFU-100/G	MH5-SFU-100/B	MH5-SFU-100/BL
15,0m	MH5-SFU-150	MH5-SFU-150/R	MH5-SFU-150/Y	MH5-SFU-150/G	MH5-SFU-150/B	MH5-SFU-150/BL
20,0m	MH5-SFU-200	MH5-SFU-200/R	MH5-SFU-200/Y	MH5-SFU-200/G	MH5-SFU-200/B	MH5-SFU-200/BL
30,0m	MH5-SFU-300	MH5-SFU-300/R	MH5-SFU-300/Y	MH5-SFU-300/G	MH5-SFU-300/B	MH5-SFU-300/BL

Copper Components

Cat6 U-UTP patch cables

- _ Unshielded CAT 6 patch cables.
- _ 2 x RJ45 connectors.
- _ Connection 1:1.
- _ Other colors available on request.
- _ Other lengths available on request.



	Grey	Red	Yellow	Green	Blue	Black	White
0,5m	MH6-UU-005	MH6-UU-005/R	MH6-UU-005/Y	MH6-UU-005/G	MH6-UU-005/B	MH6-UU-005/BL	MH6-UU-005/WH
1,0m	MH6-UU-010	MH6-UU-010/R	MH6-UU-010/Y	MH6-UU-010/G	MH6-UU-010/B	MH6-UU-010/BL	MH6-UU-010/WH
2,0m	MH6-UU-020	MH6-UU-020/R	MH6-UU-020/Y	MH6-UU-020/G	MH6-UU-020/B	MH6-UU-020/BL	MH6-UU-020/WH
3,0m	MH6-UU-030	MH6-UU-030/R	MH6-UU-030/Y	MH6-UU-030/G	MH6-UU-030/B	MH6-UU-030/BL	MH6-UU-030/WH
5,0m	MH6-UU-050	MH6-UU-050/R	MH6-UU-050/Y	MH6-UU-050/G	MH6-UU-050/B	MH6-UU-050/BL	MH6-UU-050/WH
7,0m	MH6-UU-070	MH6-UU-070/R	MH6-UU-070/Y	MH6-UU-070/G	MH6-UU-070/B	MH6-UU-070/BL	MH6-UU-070/WH
10,0m	MH6-UU-100	MH6-UU-100/R	MH6-UU-100/Y	MH6-UU-100/G	MH6-UU-100/B	MH6-UU-100/BL	MH6-UU-100/WH
15,0m	MH6-UU-150						
20,0m	MH6-UU-200						
30,0m	MH6-UU-300						

Copper Components

Cat6 S-FTP patch cables

- _ Pairs with foil and full braid shielded CAT 6 patch cables.
- _ 2 x RJ45 connectors.
- _ Connection 1:1.
- _ Other colors available on request.
- _ Other lengths available on request.

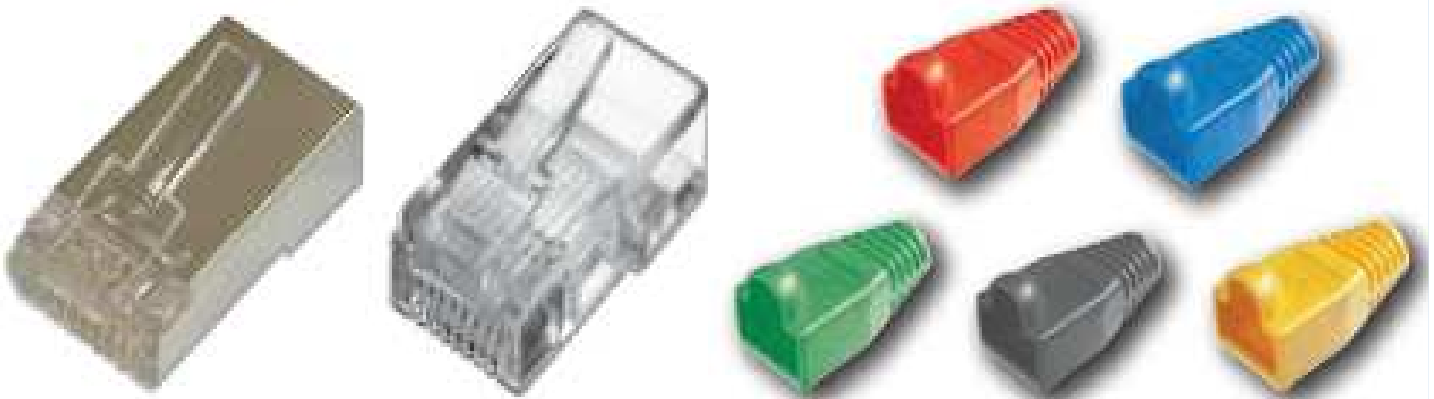


	Grey	Red	Yellow	Green	Blue	Black
0,5m	MH6-SF-0005	MH6-SF-0005/R	MH6-SF-0005/Y	MH6-SF-0005/G	MH6-SF-0005/B	MH6-SF-0005/BL
1,0m	MH6-SF-0010	MH6-SF-0010/R	MH6-SF-0010/Y	MH6-SF-0010/G	MH6-SF-0010/B	MH6-SF-0010/BL
2,0m	MH6-SF-0020	MH6-SF-0020/R	MH6-SF-0020/Y	MH6-SF-0020/G	MH6-SF-0020/B	MH6-SF-0020/BL
3,0m	MH6-SF-0030	MH6-SF-0030/R	MH6-SF-0030/Y	MH6-SF-0030/G	MH6-SF-0030/B	MH6-SF-0030/BL
5,0m	MH6-SF-0050	MH6-SF-0050/R	MH6-SF-0050/Y	MH6-SF-0050/G	MH6-SF-0050/B	MH6-SF-0050/BL
7,0m	MH6-SF-0070	MH6-SF-0070/R	MH6-SF-0070/Y	MH6-SF-0070/G	MH6-SF-0070/B	MH6-SF-0070/BL
10,0m	MH6-SF-0100	MH6-SF-0100/R	MH6-SF-0100/Y	MH6-SF-0100/G	MH6-SF-0100/B	MH6-SF-0100/BL
15,0m	MH6-SF-0150					
20,0m	MH6-SF-0200					
30,0m	MH6-SF-0300					

Copper Components

Modular plugs and accessories

- _ Modular plugs shielded or unshielded for round cable.
- _ Modular plugs for flat cable.
- _ Kink protection boots available in 6 colors.



MH5S-MPR 8/8	MH CAT5e shielded modular plug for round cable, 8P8C, RJ45, 100 pcs
MH6S-MPR 8/8	MH CAT6 shielded modular plug for round cable, 8P8C, RJ45, 100 pcs
MH6U-MPR 8/8	MH CAT6 unshielded modular plug for round cable, 8P8C, RJ45, 100 pcs
MH-MPB 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color grey, 100 pcs
MH-MPB/B 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color blue, 100 pcs
MH-MPB/BL 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color black, 100 pcs
MH-MPB/G 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color green, 100 pcs
MH-MPB/R 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color red, 100 pcs
MH-MPB/Y 8/8	MH kink protection boot for 8P8C, RJ45 modular plugs, color yellow, 100 pcs
MHU-MPF 4/4	MH unshielded modular plug for flat cable, 4P4C, RJ11, 100 pcs
MHU-MPF 6/4	MH unshielded modular plug for flat cable, 6P4C, RJ12, 100 pcs
MHU-MPF 6/6	MH unshielded modular plug for flat cable, 6P6C, RJ12, 100 pcs
MHU-MPF 8/8	MH unshielded modular plug for flat cable, 8P8C, RJ45, 100 pcs
MHU-MPR 4/4	MH unshielded modular plug for round cable, 4P4C, RJ11, 100 pcs
MHU-MPR 6/6	MH unshielded modular plug for round cable, 6P6C, RJ12, 100 pcs
MHU-MPR 8/8	MH unshielded modular plug for round cable, 8P8C, RJ45, 100 pcs

Copper Components

Modular couplers, flat cable

- _ Shielded or unshielded modular couplers.
- _ Threefold couplers.
- _ Modular patch panels.



MH5S-MC 8/8	MH CAT5e shielded modular coupler, 8P8C, RJ45
MH5S-MC-3 8/8	MH CAT5e shielded modular coupler, 8P8C, 3 X RJ45 F, Threefold Coupling
MH5S-MCPP	MH CAT5e shielded modular coupler, RJ45 to RJ45 for modular patch panel connection
MH5U-MC-3P 8/8	MH CAT5e unshielded modular coupler, 8P8C, 3xRJ45 female for Threefold coupling
MH6-JB	MH CAT6 junction box, LSA
MH6S-MC 8/8	MH CAT6 shielded modular coupler, 8P8C, RJ45
MH6S-MC/CO 8/8	MH CAT6 shielded modular coupler, crossover, 8P8C, RJ45
MH6S-MCPP	MH CAT6 shielded modular coupler, RJ45 to RJ45 for modular patch panel connection
MHS-MPP-24P	MH shielded 19" modular patch panel, 24-port, blank, 1U, color grey
MHU-MPP-16P	MH unshielded 19" Modular Patch Panel, 16-port, Blank, 1U color black
MHU-MPP-24P	MH unshielded 19" modular patch panel, 24-port, blank, 1U, color black
MHU-MC 6/6	MH unshielded modular coupler, 6P6C, RJ12, plastic
MHU-MC 8/8	MH unshielded modular coupler, 8P8C, RJ45, plastic

- _ Modular flat cable unshielded
- _ AWG26, with 4, 6 or 8 wires
- _ 100m reel
- _ Colour: black with colour coded wires

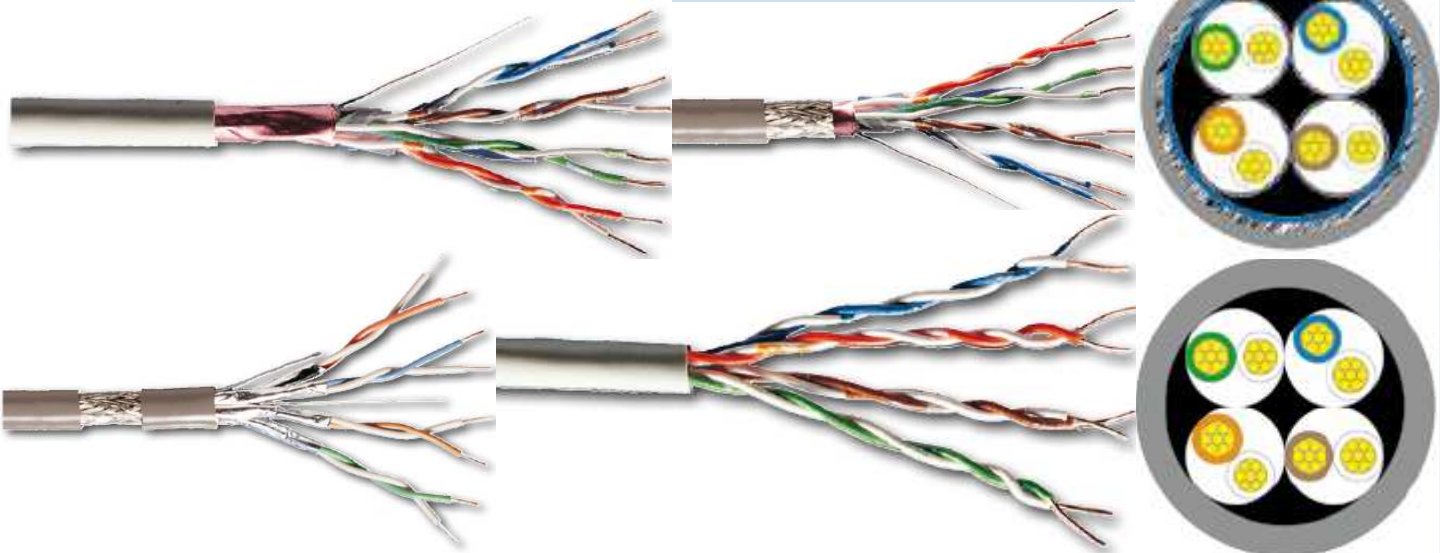


MH-MFC-4W-100	MH modular flat cable, 4 wire, 100m, AWG 26 Color black
MH-MFC-6W-100	MH modular flat cable, 6 wire, 100m, AWG 26 Color black
MH-MFC-8W-100	MH modular flat cable, 8 wire, 100m, AWG 26 Color black

Copper Components

Patch cable

- _ Twisted pair patch cable.
- _ Cat 5e or Cat 6, shielded or unshielded.
- _ Suitable for modular plugs for round cable.
- _ Color code: blue-white, orange-white, green-white, orange white.

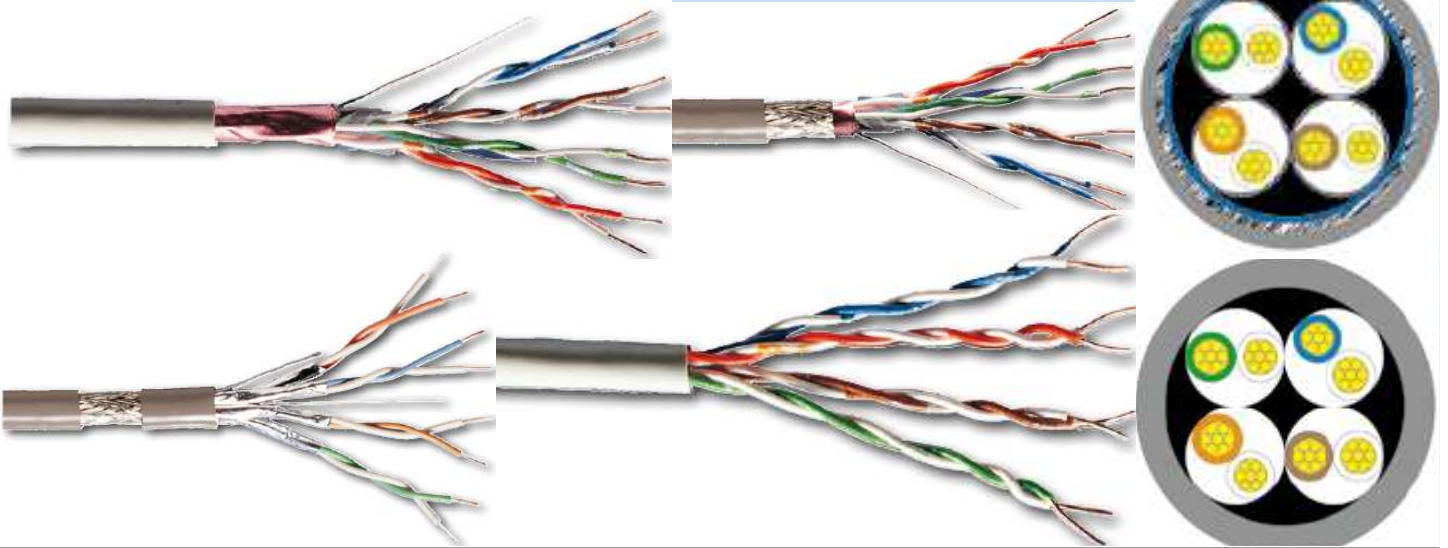


MH5-FU-PCP-100	MH Twisted Pair Patch Cable FTP, CAT 5e, AWG 26/7, Color grey 100M
MH5-FU-PCP-305	MH Twisted Pair Patch Cable FTP, CAT 5e, AWG 26/7, Color grey 305M
MH5-SFU-PCP-100	MH Twisted Pair Patch Cable SFTP, CAT 5e, AWG 26/7, Color grey 100M
MH5-SFU-PCP-305	MH Twisted Pair Patch Cable SFTP, CAT 5e, AWG 26/7, Color grey 305M
MH5-UU-PCP-100	MH Twisted Pair Patch Cable UTP, CAT 5e, AWG 24/7, Color grey 100M
MH5-UU-PCP-305	MH Twisted Pair Patch Cable UTP, CAT 5e, AWG 24/7, Color grey 305M
MH6-SF-PCL-100	MH Twisted Pair Patch Cable SSTP, CAT 6, LSOH, AWG 26/7, Color grey 100M
MH6-SF-PCL-305	MH Twisted Pair Patch Cable SSTP, CAT 6, LSOH, AWG 26/7, Color grey 305M
MH6-UU-PCP-100	MH Twisted Pair Patch Cable UTP, CAT 6, AWG 24/7, Color grey 100M
MH6-UU-PCP-305	MH Twisted Pair Patch Cable UTP, CAT 6, AWG 24/7, Color grey 305M

Copper Components

Installation cable

- _ Twisted pair installation cable.
- _ Cat 5e, Cat 6 or Cat 7, shielded or unshielded.
- _ Color code: blue-white, orange-white, green-white, orange white.



MH5-FU-NCP-100	MH Twisted Pair Installation Cable FTP, CAT 5e,AWG 24/1, Color grey 100M
MH5-FU-NCP-305	MH Twisted Pair Installation Cable FTP, CAT 5e,AWG 24/1, Color grey 305M
MH5-SFU-NCL-100	MH Twisted Pair Installation Cable SFTP, CAT 5e, LSOH, AWG 24/1, Color grey 100M
MH5-SFU-NCL-500	MH Twisted Pair Installation Cable SFTP, CAT 5e, LSOH, AWG 24/1, Color grey 500M
MH5-SFU-NCP-100	MH Twisted Pair Installation Cable SFTP, CAT 5e,AWG 24/1, Color grey 100M
MH5-SFU-NCP-305	MH Twisted Pair Installation Cable SFTP, CAT 5e,AWG 24/1, Color grey 305M
MH5-UU-NCP-100	MH Twisted Pair Installation Cable UTP, CAT 5e, AWG 24/1, Color grey 100M
MH5-UU-NCP-305	MH Twisted Pair Installation Cable UTP, CAT 5e, AWG 24/1, Color grey 305M
MH6-FU-NCL-500	MH Twisted Pair Installation Cable FTP, CAT 6, LSOH, Color orange, AWG 23/1, 500M
MH6-UU-NCP-100	MH Twisted Pair Installation Cable UTP, CAT 6, AWG 23/1, Color grey 100M
MH6-UU-NCP-305	MH Twisted Pair Installation Cable UTP, CAT 6, AWG 23/1, Color grey 305M
MH7-SF-NCL-100	MH CAT 7 Twisted Pair PiMF Installation Cable S/FTP, AWG 23/1, LSZH, 1000MHz, Color orange 100M
MH7-SF-NCL-1K	MH CAT 7 Twisted Pair PiMF Installation Cable S/FTP, AWG 23/1, LSZH, 1000MHz, Color orange 1000M
MH7-SF-NCL-500	MH CAT 7 Twisted Pair PiMF Installation Cable S/FTP, AWG 23/1, LSZH, 1000MHz, Color orange 500M
MH7-SF-NCLD-500	MH CAT 7 Twisted Pair PiMF Installation Cable Duplex, S/FTP, AWG 23/1, LSZH, 1000MHz Color orange, 500M

Copper Components

Patch panels

- _ Desktop patch panels Cat 5e or Cat 6, 8 port shielded.



MH5S-DPP-8P	MH CAT 5e shielded desktop patch panel, 8 port
MH6S-DPP-8P	MH CAT 6 shielded desktop patch panel, 8 port

- _ 10" Patch panels Cat 5e or Cat 6, 8 or 12 port shielded or unshielded.



MH5S-10"PP-12P	MH CAT5e shielded, 10" patch panel, 12 port, LSA, 1U
MH5S-10"PP-8P	MH CAT5e shielded, 10" patch panel, 8 port, LSA, 1U
MH5U-10"PP-12P	MH CAT5e unshielded, 10" patch panel, 12 port, LSA, 1U
MH5U-10"PP-8P	MH CAT5e unshielded, 10" patch panel, 8 port, LSA, 1U
MH6S-10"PP-12P	MH CAT6 shielded, 10" patch panel, 12 port, LSA, 1U
MH6S-10"PP-8P	MH CAT6 shielded, 10" patch panel, 8 port, LSA, 1U

- _ 19" Patch panels Cat 3, Cat 5e or Cat 6, 16, 24, 25, 48 or 50 port shielded or unshielded.



MH3U-PP-25P	MH CAT 3 unshielded ISDN patch panel, unshielded 25 port RJ45, 8P4C, LSA, 1U
MH3U-PP-50P	MH CAT 3 unshielded ISDN patch panel, unshielded 50 port RJ45, 8P4C, LSA, 1U
MH5S-PP-16P	MH CAT5e shielded 19" patch panel, 16 port, LSA, 1U
MH5S-PP-24P	MH CAT5e shielded 19" patch panel, 24 port, LSA, 1U
MH5U-PP-24P	MH CAT5e unshielded 19" patch panel, 24 port, LSA, 1U
MH5U-PP-48P	MH CAT5e unshielded 19" patch panel, 48 port, LSA, 2U
MH6S-PP-16P	MH CAT6 shielded 19" patch panel, 16 port, LSA, 1U
MH6S-PP-24P	MH CAT6 shielded 19" patch panel, 24 port, LSA, 1U
MH6U-PP-16P	MH CAT6 unshielded 19" patch panel, 16 port, LSA, 1U
MH6U-PP-24P	MH CAT6 unshielded 19" patch panel, 24 port, LSA, 1U
MH6U-PP-48P	MH CAT6 unshielded 19" patch panel, 48 port, LSA, 2U

Copper Components

Mounting plate/box and keystone jacks

- _ Cat 5e or Cat 6, shielded or unshielded wall outlets.
- _ Flush mounted or surface mounted outlets.
- _ Loaded or unloaded.



MH5S-FMO-2P	MH CAT 5e shielded flush mount outlet, 2 port, white
MH5S-SMO-2P	MH CAT 5e shielded surface mount outlet, 2 port, white
MH6S-FMO-2P	MH CAT 6 shielded flush mount outlet, 2 port, white
MH6S-FMO-2PD	MH CAT 6 shielded flush mount outlet with doors 2 port, white
MH6S-SMO-2P	MH CAT 6 shielded surface mount outlet, 2 port, white
MH6S-SMO-2PD	MH CAT 6 shielded surface mount outlet with doors 2 port, white
MHK-FMP-2PD	MH keystone flush mount plate, 2 port with door + 2x 22.5mm modular insert, color white
MHK-FMP-2PS	MH keystone flush mounted plare, 2-port with shutter, color white
MHK-SMB-2P	MH keystone surface mount box, 2-port, color white
MHK-SMB-6P	MH keystone surface mount box, 6-port, color white
MH-SMB	MH surface mount box, color white

- _ Cat 5e or Cat 6, shielded or unshielded keystone jacks.



MH5S-KJ	MH CAT5e shielded keystone jack, RJ45 to LSA
MH5U-KJ	MH CAT5e unshielded keystone jack, RJ45 to LSA
MH6U-KJ	MH CAT6 unshielded keystone jack, RJ45 to LSA
MH6S-KJ	MH CAT6 shielded keystone jack, RJ45 to LSA

