SHV/MHV RF Cable Sets for upto 5KV DC use in Nuclear Instrumentation



SHV Connectors used comply to NIM ND-545 Standard

HV... series cable sets have been designed for use in high voltage applications of upto 5KV DC, typically in nuclear instrumentation applications. Main feature of the SHV/MHV connectors is that the center contacts are deeply recessed into the dielectric to prevent shock in unmated condition. These cable sets use high quality imported SHV/MHV connectors from European/Japanese/US sources that adhere to IEC and NIM ND-545. We can provide the finished cable sets as per your asked lengths, cable type and small quantities.

FEATURES

- SHV/MHV Series Connectors
- Interface acc. to IEC and NIM ND-545
- Bayonet coupling, inner conductor recessed in dielectric
- MIL-C-17 conforming Cable



inner conductors recessed in dielectric for safe operation to 5 KV DC

APPLICATIONS

- Particle physics research
 - Nuclear Instrumentation

Choice SHV/MHV Connectors for Nuclear Instrumentation cables





MHV Cable Plug







Choice of RF Cable Types for SHV/MHV RF Cable Sets

Parameter	RG58	RG59	LL58
Inner Conductor	Stranded Tinned Copper	Copper Clad Steel	Solid Copper
Dielectric	Polyethylene	Polyethylene	Foamed Polyethylene
Outer Shield	Tinned Copper Braid	Copper Braid	1) Alunimium Tape 2) Tinned copper braid
Jacket	PVC, 4.95mm	PVC, 6.2mm	PE, 4.95mm
Shielding Effectiveness	<65 dB	<65 dB	> 90 dB
Weight	39 g/m	57 g/m	35 g/m
Temp. Range	-20°C ~ +70°C	-40°C ~ +80°C	-40°C to +85°C
Impedance	50Ω	75Ω	50Ω
Capacitance	29.5 pF/ft	22 pF/ft	24.9 (pF/ft)

Attenuation Vs Frequency

Frequency (MHz)	100	200	400	1000
LL58(dB/m)	0.12	0.17	0.25	0.42
RG58(dB/m)	0.17	0.26	0.40	0.62

Note : We recommend LL58 cable due to better shielding and lower losses

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SHV Connectors used comply to NIM ND-545 Standard

Connectors Specifications

Specifications	SHV Connectors	MHV Connectors			
Outer Conductor	Brass, Alloy plated	Brass, Alloy plated			
Center Conductor	Brass(M), BeCu(F), Au Plated	Brass(M), BeCu(F), Au Plated			
Insulation	PTFE	PTFE			
Gasket	Silicon	Silicon			
Frequency range	DC ~ 300 MHz	DC ~ 300 MHz			
Operating Voltage	3.5 KVrms	1.6 KVrms			
Test Voltage	5 KVrms	5 KVrms			
Operating Current	< 10A peak; <0.5A average	< 10A peak; <0.5A average			
Mating/Unmating	500 operations 500 operations				
Vibration	As per MIL-STD-202, method 204, test condition D				
Mechanical Shock	As per MIL-STD-202, method 213, test condition I				
Thermal Shock	As per MIL-STD-202, method 107, test condition B				
Humidity	As per MIL-STD-202, method 106				
Temperature Cycle	As per MIL-STD-202, method 102A, test condition C				

Ordering Codes Description

	HV-XXXX	-	(Length) □ □ L L	-	(Con (⁻ 1	nec ⊉ 2	tor 1))⊐ <mark>3</mark>	-	(Cor (⊐ 1	inec 力 <mark>2</mark>	tor 2))⊐ <mark>3</mark>) - 🗆 U	
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Cable	RG58 = RG58 ; RG59 = RG59 ; LL58 = LL58
Length	0.5 = 0.5 ; 1 = 1.0 ; 2 = 2.0
Connector Series	MHV = MHV; SHV = SHV
Male/Female Designator	M = Male ; F = Female
Orientation of Connector	ST = Straight
Unit of Length	M = Meter ; F = Feet ; I = Inch
	Cable Length Connector Series Male/Female Designator Orientation of Connector Unit of Length

1m LL58 cable set with MHV Straight connectors on 2 sides = HV-LL58-1.0-MHV(M/ST)-MHV(M/ST)-M

Cable Set Ordering Codes (Substitute XXXX = Cable Code)

Ordering Code	Length	Conn 1	Conn 2				
With MHV Connectors							
HV-XXXX-0.5-MHV(M/ST)-MHV(M/ST)-M	0.5 m	MHV(M/ST)	MHV(M/ST)				
HV-XXXX-1.0-MHV(M/ST)-MHV(M/ST)-M	1.0 m	MHV(M/ST)	MHV(M/ST)				
HV-XXXX-2.0-MHV(M/ST)-MHV(M/ST)-M	2.0 m	MHV(M/ST)	MHV(M/ST)				
HV-XXXX-3.0-MHV(M/ST)-MHV(M/ST)-M	3.0 m	MHV(M/ST)	MHV(M/ST)				
HV-XXXX-5.0-MHV(M/ST)-MHV(M/ST)-M	5.0 m	MHV(M/ST)	MHV(M/ST)				
With SHV Connectors							
HV-XXXX-0.5-SHV(F/ST)-SHV(F/ST)-M	0.5 m	SHV(F/ST)	SHV(F/ST)				
HV-XXXX-1.0-SHV(F/ST)-SHV(F/ST)-M	1.0 m	SHV(F/ST)	SHV(F/ST)				
HV-XXXX-2.0-SHV(F/ST)-SHV(F/ST)-M	2.0 m	SHV(F/ST)	SHV(F/ST)				
HV-XXXX-3.0-SHV(F/ST)-SHV(F/ST)-M	3.0 m	SHV(F/ST)	SHV(F/ST)				
HV-XXXX-5.0-SHV(F/ST)-SHV(F/ST)-M	5.0 m	SHV(F/ST)	SHV(F/ST)				

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