

VN Modular Hybrid Connector Series



WINCHESTER
ELECTRONICS

CONNECTING
INNOVATION
TO APPLICATION®

A large orange rectangular block containing the Winchester Electronics logo and tagline. The logo features a stylized wave or swoosh above the company name. The tagline is positioned at the bottom of the block.

Custom
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- ◆ Global Footprint - World-class Manufacturing Facilities
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Certifications

AS 7003 - SAE Aerospace Standard for Electronics
AS 9100 - Aerospace Quality Management System
ISO 9001 - Quality Management Systems
ISO 14001 - Environmental Management System
ISO 13485 - Medical Device Quality Management System
OHSAS 18001 - Occupational Health and Safety



All cable and wire harness assemblies are built and inspected to
IPC/WHMA-A-620B Class 3 Standards

Quality Systems comply with FDA 21 CFR Part 820

VN Modular Hybrid Connector Series

Table of Contents



Overview	4
Specifications	5
Receptacle Drawings	6
Plug Drawings	8
Module Drawings	9
Part Number Descriptions	10
Contact Us	11

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Winchester VN Modular Hybrid Connector Series

Overview



CONNECTOR GENERAL HIGHLIGHTS

- ◆ VN Modular connectors are circular bayonet connectors used for outdoor use in the Rail Mass Transit industry
- ◆ The connector features a bayonet locking mechanism for quick coupling and un-mating and tolerance to high vibrations
- ◆ This series has modules that can accommodate a variety of signal types: Power, Signal, Ethernet, Fiber Optic, RG 59 Video Signal
- ◆ Each connector module is housed in the connector's insert cavity
- ◆ There are 2 connector shell sizes offered:

Shell Size 40 with 4 Module Cavities



4 Cavity (Shell Size 40) with CAT7 Cable

Shell Size 48 with 7 Module Cavities



7 Cavity (Shell Size 48) with Flexible Black Conduit

CONNECTOR CHARACTERISTICS

- ◆ Reliable, quick-mate, reverse bayonet coupling system
- ◆ Aluminium alloy connector shell with a black color epoxy varnish finish
- ◆ Bayonet ring is coated in ethylene acrylate and is UL94-V0 compliant
- ◆ Halogen-free insulators and external coating
- ◆ Rubber coated coupling nut
- ◆ IP67 grade when mated
- ◆ RoHS compliant
- ◆ 5 keyed guiding system
- ◆ 3 keyed - variable combined polarization system

CONNECTOR MODULE

- ◆ VN Modular connectors can accept a variety of electrical, optical, or blanking modules
- ◆ The connector insert is available in: 7 Module Cavities and 4 Module Cavities
- ◆ Each module can be considered as a single independent connector and can be separately assembled

MODULE CHARACTERISTICS

- ◆ High grade efficiency shielding for each module's EMI/RFI protection
- ◆ Each module has a pneumatic seal in its housing
- ◆ Easy to assemble and remove modules
- ◆ Every module has its own guiding system within the insulator
- ◆ Every module can be coded and identified by suitable markings over the insulator

ADVANTAGES OF VN MODULAR CONNECTOR OVER RECTANGULAR CONNECTOR

- ◆ Reduced overall dimensions
- ◆ Reduced number of single parts to be assembled
- ◆ Easy to assemble
- ◆ Positive protection against liquids and dust

Winchester VN Modular Hybrid Connector Series Specifications



BAYONET COUPLING TORQUE		MAX (Nm)	MIN (Nm)
To Lock		10.0	-
To Open		10.0	5.9
CONTACT SIZE		16/16K	20
Contact Material		Copper Alloy	Copper Alloy
Gold Plated: Min 0.5 Micro Au Over Min 2.5 Micro Ni		X	X
Silver Plated: 3.5 Micro Ag		0	0
Contact Mating Force (Max)		35 N	1.8 N
Contact Separating Force (Min)		10 N	0.3 N
Electroplated Contact Surface		X= Standard	0= On Request
CONNECTOR SURFACE TREATMENT			
Varnish		Epoxy-Polyurethane	
Thickness of Varnish Layer		13 - 16 Micro Meters	
Base Material		Aluminium Alloy	
Color		Black	
Corrosion Resistance		500 h	
Electrical Conductivity		Non-Conductive	
MODULE INSERTS & SUPPORTS		INSERTS	SUPPORTS
Material		Ethylene Acrylate	Thermoplastic
Operating Temperature		-55 to 125 C	-40 to 130 C
UL Fire Protection Class		UL94 V0	-
NF Fire Protection Class		I2/F0	I3/F3

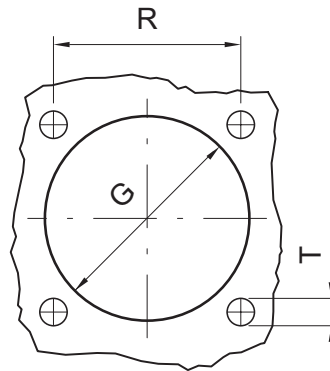
Winchester VN Modular Hybrid Connector Series

Receptacle Drawings



RECEPTACLE FLANGE

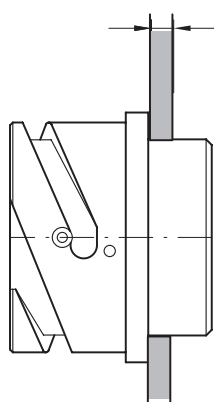
Connector Size	R	G (Front Panel)	G (Rear Panel)	T (Flange with Through Holes)	T (Flange with Threaded Holes)
40	55.5 mm	61.0 mm	66.4 mm	4.5 mm	5.5 mm
48	90.0 mm	84.5 mm	91.0 mm	8.5 mm	8.5 mm



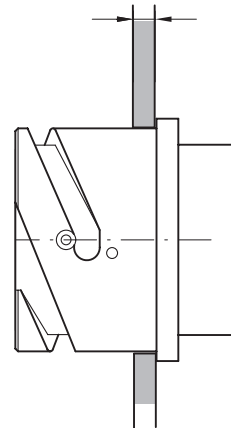
Receptacle Flange

PANEL MOUNTING

Connector Size	Front Panel Mounting Max		Rear Panel Mounting Max	
	mm	inches	mm	inches
40	6.0 mm	0.23 inches	7.5 mm	0.29 inches
48	9.0 mm	0.35 inches	10.0 mm	0.39 inches



Front Panel Mount



Rear Panel Mount

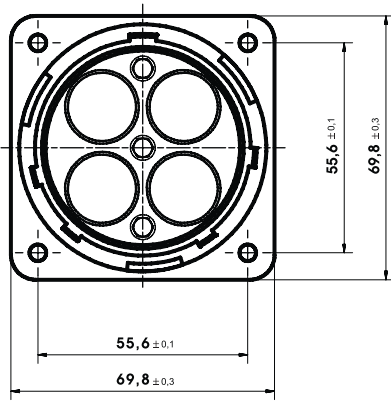
Winchester VN Modular Hybrid Connector Series

Receptacle Drawings

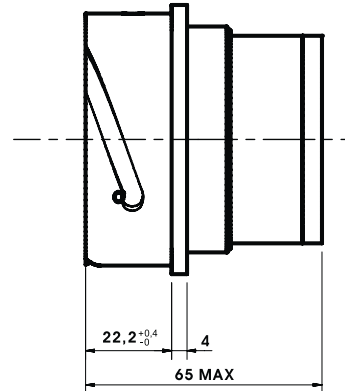


SIZE 40 RECEPTACLE

Center to Center Bolt Hole		Overall Length of Square Flange		Front to Rear Overall Length		Square Flange Thickness		Mating Receptacle Front Length	
55.6 mm	2.18 inches	69.8 mm	2.74 inches	65 mm	2.55 inches	4.0 mm	0.15 inches	22.2 mm	0.87 inches



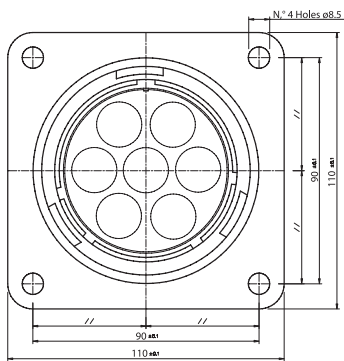
Size 40 Receptacle Front View



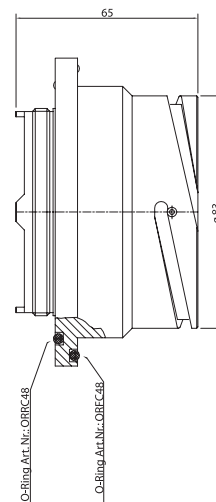
Size 40 Receptacle Side View

SIZE 48 RECEPTACLE

Center to Center Bolt Hole		Overall Length of Square Flange		Front to Rear Overall Length		Mating Receptacle Front Length	
90.0 mm	3.54 inches	110.0 mm	4.33 inches	65.0 mm	2.55 inches	83.0 mm	3.26 inches



Size 48 Receptacle Front View



Size 48 Receptacle Side View

Winchester VN Modular Hybrid Connector Series Plug Drawings



SIZE 40 PLUG

Overall Outer Diameter

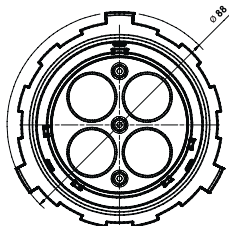
Front to Rear Overall Length

88.0 mm

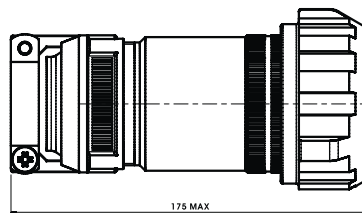
3.46 inches

175.0 mm

6.88 inches



Size 40 Plug Front View



Size 40 Plug Side View

SIZE 48 PLUG

Overall Outer Diameter

Front to Rear Overall Length

Rubber Coupling Nut

Rear Mechanical Cable Clamp Diameter

109.0 mm

4.29 inches

210.0 mm

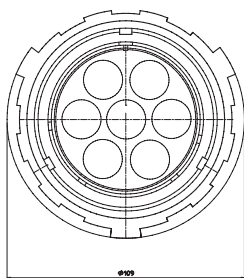
8.26 inches

65.7 mm

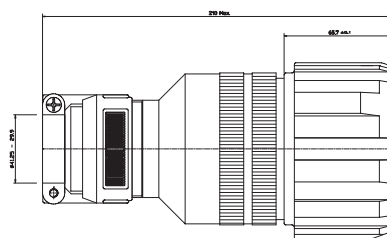
2.58 inches

41.25 mm

1.62 inches



Size 48 Plug Front View



Size 48 Plug Side View

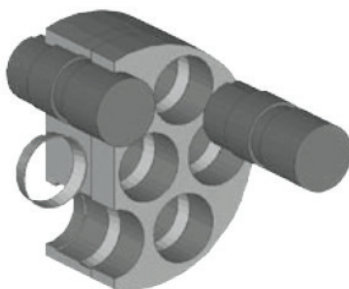
Winchester VN Modular Hybrid Connector Series

Module Drawings



STANDARD MODULE CONFIGURATION

Module Part Number	Number of Modules
40-4	4
48-7	7



Module Mount

Note: Blank modules shown are also available.

STANDARD CONTACT INSERTS AVAILABLE PER SINGLE MODULE

Contact Inset Part Number	Number of Contacts	Contact Size (AWG)
14S-5	5	16
14SA-7	7	16
14S-2*	4	16
14SZ-10**	10	20

* Insert is for Ethernet CAT5

** Insert is for Ethernet CAT6



Receptacle Module



Plug Module

Notes:

1. Pin-style modules are used in receptacle connectors; socket-style modules are used in plug connectors.
2. This series can accept 4 or 7 modules, both electrical and optical. Consult Winchester's CNC division if fiber optic contacts are required.

Winchester VN Modular Hybrid Connector Series

Part Number Descriptions



CONNECTOR ASSEMBLY WITH MALE PIN CONTACTS

Part Number	Description
VN-PC-0003	Size 48 Receptacle Shell, Qty of (7) 4-Pole Module Inserts, Qty of (28) #16 AWG Pin Contacts
VN-PC-0005	Size 48 Receptacle Shell, Qty of (2) Blank Module Fillers, Qty of (2) 8-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts
VN-PC-0007	Size 48 Receptacle Shell, Dust Cover
VN-PC-0009	Size 48 Receptacle Shell, Qty of (7) 4-Pole Module Inserts, Qty of (28) #16 AWG Pin Contacts
VN-PC-0015	Size 40 Receptacle Shell, Qty of (2) Blank Module Fillers, Qty of (2) 8-Pole Module Inserts, Qty of (16) #20 AWG Pin Contacts, 15" Long CAT7 Cable
VN-PC-0015-180	Size 40 Receptacle Shell, Qty of (2) Blank Module Fillers, Qty of (2) 8-Pole Module Inserts, Qty of (16) #20 AWG Pin Contacts, 180" Long CAT7 Cable
VN-PC-0017	Size 40 Receptacle Shell, Dust Cover
VN-PC-0020	Size 40 Receptacle Shell, Qty of (4) 4-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 20" Long CAT5 Cable
VN-PC-0020-50-V01	Size 40 Receptacle Shell, Qty of (4) 4-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 50" Long CAT5 Cable
VN-PC-0020-180-V01	Size 40 Receptacle Shell, Qty of (4) 4-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 180" Long CAT5 Cable
VN-PC-0020-900-V01	Size 40 Receptacle Shell, Qty of (4) 4-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 900" Long CAT5 Cable
VN-PC-0022-180-V01	Size 40 Receptacle Shell, Qty of (3) 4-Pole Module Inserts, Qty of (1) 5-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 180" Long CAT5 Cable
VN-PC-0022-900-V01	Size 40 Receptacle Shell, Qty of (3) 4-Pole Module Inserts, Qty of (1) 5-Pole Module Inserts, Qty of (16) #16 AWG Pin Contacts, 900" Long CAT5 Cable
VN-PC-0024-180	Size 40 Receptacle Shell, Qty of (3) 1-Pole Module Insert, Qty of (1) 5-Pole, Qty of (10) #16 AWG Pin Contacts, Qty of (3) RG59 Coax, 180" Long CAT5 Cable
VN-PC-0024-900	Size 40 Receptacle Shell, Qty of (3) 1-Pole Module Insert, Qty of (1) 5-Pole, Qty Of (10) #16 AWG Pin Contacts, Qty of (3) RG59 Coax, 900" Long CAT5 Cable

CONNECTOR ASSEMBLY WITH FEMALE SOCKET CONTACTS

Part Number	Description
VN-PC-0010-058	Qty of (2) Size 48 Plug Shells; Double-Ended Jumper: Qty of (14) 4-Pole Module Inserts, Qty of (56) #16 AWG Socket Contacts, 58" Long CAT5 Cable
VN-PC-0010-060	Qty of (2) Size 48 Plug Shells; Double-Ended Jumper: Qty of (14) 4-Pole Module Inserts, Qty of (56) #16 AWG Socket Contacts, 60" Long CAT5 Cable
VN-PC-0012	Qty of (2) Size 48 Plug Shells; Double-Ended Jumper: Qty of (4) Blank Module Fillers, Qty of (4) 8-Pole Module Inserts, Qty of (32) #20 AWG Socket Contacts, 140" Long CAT7 Cable
VN-PC-0021	Qty of (2) Size 40 Plug Shells; Double-Ended Jumper: Qty of (8) 4-Pole Module Inserts, Qty of (32) #16 AWG Socket Contacts, 72" Long CAT5 Cable with Flexible Black Conduit
VN-PC-0021-072-V01	Qty of (2) Size 40 Plug Shells; Double-Ended Jumper: Qty of (8) 4-Pole Module Inserts, Qty of (32) #16 AWG Socket Contacts, 72" Long CAT5 Cable with Rubber Hose
VN-PC-0021-096-V01	Qty of (1) Size 40 Plug Shell; Qty of (1) Size 40 Plug Shell; Double-Ended Jumper: Qty of (8) 4-Pole Module Inserts, Qty of (32) #16 AWG Socket Contacts, 96" Long CAT5 Cable with Flexible Black Conduit
VN-PC-0023-096-V01	Qty of (2) Size 40 Plug Shell; Double-Ended Jumper: Qty of (6) 4-Pole Module Inserts, Qty of (2) 5-Pole Module Inserts, Qty of (34) #16 AWG Socket Contacts, 96" Long CAT5 Cable
VN-PC-0025-096	Qty of (2) Size 40 Plug Shell; Double-Ended Jumper, Qty of (6) 1-Pole Module Insert, Qty of (2) 4-Pole Module Inserts, Qty of (10) #16 AWG Socket Contacts, Qty of (6) RG59 Coax, 96" Long CAT5 Cable
VN-PC-0027-072-V01	Qty of (1) Size 40 Plug Shell; Double-Ended Jumper, Qty of (1) Size 48 Plug Shell, Qty of (8) 4-Pole Module Insert, Qty of (32) #16 AWG Socket Contacts, 72" Long CAT5 Cable

Note: This series can accept 4 or 7 modules, both electrical and optical. Consult Winchester's CNC division if fiber optic contacts are required.

Winchester VN Modular Hybrid Connector Series

Contact Us



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708.594.5890 Phone



Contact Information

NORTH AMERICA - United States

Winchester Electronics Middlebury
Division of Winchester Electronics
199 Park Road Extension - Suite 104
Middlebury, Connecticut 06762
203.741.5400 Phone
203.741.5500 Fax

Winchester Electronics Franklin
Division of Winchester Electronics
101 Constitution Boulevard - Suite B
Franklin, Massachusetts 02038
508.541.3404 Phone
203.741.5500 Fax

Electrical Specialty Products
Division of Winchester Electronics
2525 Chesnee Highway
Spartanburg, South Carolina 29307
864.804.5300 Phone
864.804.5301 Fax

Clements National Company
Division of Winchester Electronics
2150 Parkes Drive
Broadview, Illinois 60155
708.594.5890 Phone
708.594.2481 Fax

SRC Haverhill
Division of Winchester Electronics
5590 Skylane Boulevard
Santa Rosa, California 95403
707.573.1900 Phone
707.573.1999 Fax

TRU Corporation
Division of Winchester Electronics
245 Lynnfield Street
Peabody, Massachusetts 01960
978.532.0775 Phone
978.531.6993 Fax

Source Technology
Division of Winchester Electronics
11255 Amira Drive
Houston, Texas 77065
281.894.6171 Phone
281.807.4546 Fax

SRI Hermetics
Division of Winchester Electronics
3950 Dow Road
Melbourne, Florida 32934-9289
321.254.4067 Phone
321.752.9221 Fax

NORTH AMERICA - Mexico

Winchester Electronics Nogales
Carretera Int'l Km. 7.5A
Parque Industrial El Cid
Nogales, Sonora, Mexico
203.741.5570 Phone
203.741.5500 Fax

ASIA - China

Winchester Electronics (Suzhou) Co., LTD
No. 18 QunXing First Street
SIP, Suzhou, P.R. China, 215006
86.512.6252.9838 Phone
86.512.6762.9638 Fax

ASIA - Malaysia

Winchester Electronics (M) SDN. BHD
No. 1651, Lorong Perusahaan Maju 8
Prai Industrial Estate Phase IV
13600 Prai, Penang, Malaysia
6.04.5083535 Phone
6.04.5080810 Fax



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Brands



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