

# 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
  - 4 Module Cavities
- ◆ Each module can be considered as a single independent connector and can be separately assembled
- ◆ Easy to assemble and remove modules

## MODULE CHARACTERISTICS

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

## ADVANTAGES OVER RECTANGULAR CONNECTOR

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



**Clements National**  
division of **WINCHESTER**  
ELECTRONICS

# 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

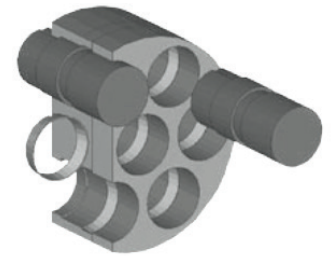
MODULE INSERTS & SUPPORTS	INSERTS	SUPPORTS
Material	Ethylene Acrylate	Thermoplastic
Operating Temperature	-55 to 125 C	-40 to 130 C
UL Fire Protection Class	UL94 V0	-
NF Fire Protection Class	I2/F0	I3/F3



Receptacle Module



Plug Module



Module Mount

- 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.



# EL Series™ Expanded Beam Fiber Optic Contacts



VN-PC 4-Module  
Receptacle



EL Series Contact



VN-PC 4-Module  
Plug

## TECHNICAL SPECIFICATIONS

	Optical	Physical
Return loss	50dB min	Mating cycles optical contact only: 2000 min, 5000 typical
Insertion loss (random mate)	1.0dB type size 12 1.2dB type size 16	Double alignment expands optical area 1000's of times and securely aligns optical beam to the mechanical axis of the contact
Insertion loss achievable	0.8dB factory assembled connector & cabled	No cleaning required for ferrule or lens
Wavelength	Single mode: 1260-1600nm Multimode: 810-940nm	Materials: stainless steel, glass & epoxy
Power handling	500 mW type 1W, 5W versions available	Available in 38999 (short and long), ARINC 404, ARINC 600

## PART NUMBERING - EXPANDED BEAM CONTACT

7	2	0	3	S	3	2	F	2	8	0	1	-	
720	EL EB connector	5	38999 plug	T	Terminated for splice	F28	SM 900u PVC jacket	01	Standard 2m pigtail	M	Mil standard M85049 strain relief		
		3	38999 socket	L	Future use (LC ferrule)	F11		40	4 channel in size 17	C	Customer splice strain relief		
		A	38999 contact only	C	Cabled	F62	MM 62.5/125	22	2 optical 2 electrical size 17				
		B	ARINC 404 contact only			F50	MM 50/125	42	4 optical 2 electrical size 17				
		C	Rail insert plug	53	Size 12 socket for 38999			20	2 fiber size 17				
		D	Rail insert socket	55	Size 12 plug for 38999			01	2m with FC/APC connector				
				33	Size 16 socket for 38999								
				35	Size 16 plug for 38999								
				23	Future size for 3899								
				25	Future size for 3899								
				99	Special contact								
				43	Size 16 socket for ARINC 404								
				45	Size 16 plug for ARINC 404								

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