Ve–NET™ Automotive Multi–Gigabit Differential Connector System

IDEAL FOR AUTOMOTIVE ETHERNET APPLICATIONS

Ve-NET™ Automotive Multi–Gigabit Differential Connector System designed for the automotive environment can transmit from 1000Mb/s to 10Gb/s according to 1000BASE–T1(IEEE 802.3bp), 10GBASE–T1(IEEE 802.3ch), 50GBASE–CR(IEEE 802.3cd). This automotive–grade Ethernet connection system uses Shielded Twisted Pair / Shielded Parallel Pair cable to transmit data. Ve–NET™ is developed according to USCAR–2 and LV214 and Ethernet specifications, and is available in various sealed / non–sealed configurations.

- Automotive–grade Ethernet application
- Compliant with USCAR–2 and LV214 specifications
- Temperature range –40°C to +105°C in sealed and unsealed configurations
- High data rates up to 50Gb/s
- Configuration available with 1x1, 1x2, 2x2 and 2x3 ports

TARGET MARKETS

FEATURES

- Automotive–grade Ethernet application
- Non–waterproof type
- Robust crimp design with primary and secondary lock
- Mechanical and visible color coding
- Connector–to–Connector audible click
- Mechanical and robust design
- Optional Connector Positioning Assurance(CPA)
- USCAR interface compatible

BENEFITS

- Supports high data rates up to 50Gb/s
- Design flexibility
- Application flexibility
- High cable retention force
- Avoids mismating
- Avoids contact pin damage possible
- Ensures proper connector assembly
- Suitable for STP and SPP cables

Ve–NET™ Automotive Multi–Gigabit Differential Connector System

TECHNICAL INFORMATION

MATERIAL

▪ Housing: High–temperature thermoplastic

▪ Contacts: Copper Alloy

▪ Holder: High–temperature thermoplastic

▪ LID: Zinc Alloys/Copper Alloy

▪ Die–cast: Zinc Alloys

MECHANICAL PERFORMANCE

▪ Mating Cycle: $\geq$ 25

▪ Retention force latch $\geq$ 110N

▪ Engagement Force:

  ▪ $\leq$ 45N (1pos)

  ▪ $\leq$ 75N (2/4 pos)

  ▪ $\leq$ 90N (6 pos)

ELECTRICAL PERFORMANCE

▪ Impedance: 100Ω

▪ Insulation Resistance: 100MΩ min.

▪ Frequency Range Depending on Cable Type: 0.01GHz to 20GHz

▪ Contact Current Rating: 1.5A max.

▪ Test voltage : 250VAC

▪ Working Voltage: $\leq$60VDC

PACKAGING

▪ Board Connector: Reel vacuum package

SPECIFICATION

▪ Product Specification: S–VNT–001

▪ Packaging Specification: PKSVNT001

ENVIRONMENTAL

▪ Temperature Range: –40°C to +105°C

▪ Humidity: DIN EN 60068–2–30 @ +40°C

▪ Vibration: SAE/USCAR–2 Rev 7 V1, LV214 S1

▪ Thermal Shock: SAE/USCAR–2 Rev7 and LV214, –40°C to +125°C (cable dependent)

▪ Sealed Version IP Class (mated): IP69K

▪ RoHS

APPROVALS AND CERTIFICATIONS

▪ IEEE 802.3bp 1000BASE–T1

▪ IEEE 802.3ch 10GBASE–T1
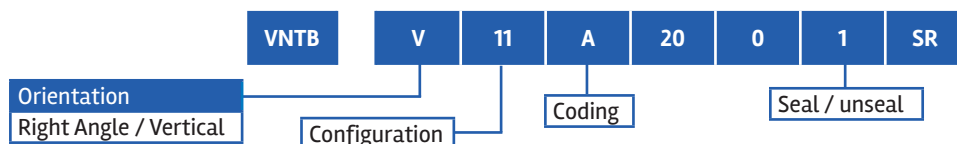
▪ IEEE 802.3cd 50GBASE–CR

▪ Open Alliance TC9

TARGET MARKETS/APPLICATIONS

BCU (Body Control Unit)
ZCU (Zone Control Unit)
LiDAR, Radar
Rear Seat Entertainment
Camera Systems (4k and beyond)
Advanced Driver Assistance Systems (ADAS)
Infotainment

Results may vary depend on design, application, types of cable, and assembly processes. Contact your local representatives if specific data sheets for particular products are required.

▶ Ve-NET™ Automotive Multi-Gigabit Differential Connector System

PART NUMBER SELECTOR

| VNTB | V | 11 | A | 20 | 0 | 1 | SR |

Orientation
Right Angle / Vertical

Configuration

Coding

Seal / unseal

PART NUMBERS

Description	Data Rate	Code	Part Numbers
Ve-NET™, 1x1, VT, Unseal, A code	100M/1G/2.5G/5G/10G	A	VNTBV11A2001SR
Ve-NET™, 1x1, VT, Unseal, B code	100M/1G/2.5G/5G/10G	B	VNTBV11B2001SR
Ve-NET™, 1x1, VT, Unseal, Z code	100M/1G/2.5G/5G/10G	Z	VNTBV11Z2001SR
Ve-NET™, 1x1, RA, Unseal, A code	100M/1G/2.5G/5G/10G	A	VNTBR11A2001SR
Ve-NET™, 1x1, RA, Unseal, B code	100M/1G/2.5G/5G/10G	B	VNTBR11B2001SR
Ve-NET™, 1x1, RA, Unseal, C code	100M/1G/2.5G/5G/10G	C	VNTBR11C2001SR
Ve-NET™, 1x1, RA, Unseal, D code	100M/1G/2.5G/5G/10G	D	VNTBR11D2001SR
Ve-NET™, 1x1, RA, Unseal, E code	100M/1G/2.5G/5G/10G	E (*)	VNTBR11E2001SR
Ve-NET™, 1x1, RA, Unseal, F code	100M/1G/2.5G/5G/10G	F (*)	VNTBR11F2001SR
Ve-NET™, 1x1, RA, Unseal, G code	100M/1G/2.5G/5G/10G	G (*)	VNTBR11G2001SR
Ve-NET™, 1x1, RA, Unseal, H code	100M/1G/2.5G/5G/10G	H (*)	VNTBR11H2001SR
Ve-NET™, 1x1, RA, Unseal, J code	100M/1G/2.5G/5G/10G	J (*)	VNTBR11J2001SR
Ve-NET™, 1x1, RA, Unseal, K code	100M/1G/2.5G/5G/10G	K (*)	VNTBR11K2001SR
Ve-NET™, 1x1, RA, Unseal, M code	100M/1G/2.5G/5G/10G	M (*)	VNTBR11M2001SR
Ve-NET™, 1x1, RA, Unseal, O code	100M/1G/2.5G/5G/10G	O (*)	VNTBR11O2001SR
Ve-NET™, 1x1, RA, Unseal, Z code	100M/1G/2.5G/5G/10G	Z	VNTBR11Z2001SR
Ve-NET™, 1x2, RA, Unseal, A code	100M/1G/2.5G/5G/10G	A	VNTBR12A2001SR
Ve-NET™, 1x2, RA, Unseal, B code	100M/1G/2.5G/5G/10G	B	VNTBR12B2001SR
Ve-NET™, 1x2, RA, Unseal, C code	100M/1G/2.5G/5G/10G	C	VNTBR12C2001SR
Ve-NET™, 1x2, RA, Unseal, D code	100M/1G/2.5G/5G/10G	D	VNTBR12D2001SR
Ve-NET™, 1x2, RA, Unseal, Z code	100M/1G/2.5G/5G/10G	Z	VNTBR12Z2001SR
Ve-NET™, 2x2, RA, Unseal, A code	100M/1G/2.5G/5G/10G	A	VNTBR22A2001SR
Ve-NET™, 2x2, RA, Unseal, B code	100M/1G/2.5G/5G/10G	B	VNTBR22B2001SR
Ve-NET™, 2x2, RA, Unseal, C code	100M/1G/2.5G/5G/10G	C	VNTBR22C2001SR
Ve-NET™, 2x2, RA, Unseal, D code	100M/1G/2.5G/5G/10G	D	VNTBR22D2001SR
Ve-NET™, 2x2, RA, Unseal, Z code	100M/1G/2.5G/5G/10G	Z	VNTBR22Z2001SR
Ve-NET™, 2x2, RA, Sealed, A code	100M/1G/2.5G/5G/10G	A	VNTBR22A2002SR
Ve-NET™, 2x2, RA, Sealed, B code	100M/1G/2.5G/5G/10G	B	VNTBR22B2002SR
Ve-NET™, 2x2, RA, Sealed, Z code	100M/1G/2.5G/5G/10G	Z	VNTBR22Z2002SR
Ve-NET™, 2x3, RA, Unseal, A code	100M/1G/2.5G/5G/10G	A	VNTBR23A2001SR
Ve-NET™, 2x3, RA, Unseal, B code	100M/1G/2.5G/5G/10G	B	VNTBR23B2001SR
Ve-NET™, 2x3, RA, Unseal, Z code	100M/1G/2.5G/5G/10G	Z	VNTBR23Z2001SR

NOTE: (*) Coding on request.

For Ve-NET™ Cable Assemblies, kindly email Tech.Support@amphenol-cs.com or contact your local Amphenol representative.