■ DIFFERENCES BETWEEN CAN, LIN, AND AVC-LAN

1. General

The protocols, which are the rules for establishing data communication, differ between the CAN, LIN, and AVC-LAN. If the ECUs in the networks use different frameworks for their data, such as communication speed, communication wire, and signals, they will be unable to understand each other. Therefore, protocols (rules) must be established among them.

- Compared to the LIN and AVC-LAN, the CAN features high-speed data transmission. Therefore, the CAN is able to transmit larger amounts of data faster than other protocols. This feature makes it possible to transmit data accurately for the power train and chassis control system, which requires large amounts of data to be transmitted in short periods of time.

Protocol	CAN		LIN	AVC-LAN
	HS-CAN	MS-CAN		
Communication Speed	500 kbps*	250 kbps*	Max. 20 kbps*	Max. 17.8 kbps*
Communication Wire	Twisted-pair Wire		AV Single Wire	Twisted-pair Wire
Drive Type	Differential Voltage Drive		Single Wire Voltage Drive	Differential Voltage Drive
Data Length	1-8 Byte (Variable)		2, 4, 8 Byte (Variable)	0-32 Byte (Variable)

bps*: abbreviation for “Bits Per Second”, indicating the number of bits that can be transmitted per second.

2. Communication Wire

A twisted-pair wire is used for CAN and AVC-LAN communication. An AV (Automobile Vinyl) single wire is used for LIN and BEAN communication.

Communication Wire	Outline
Twisted-pair Wire  241BE168	This communication wire is a pair of twisted lines. Communication is driven by applying different voltages to the two lines in order to send a single signal. This system, which is called a “Differential Voltage Drive”, reduces noise.
AV Single Wire 240BE09	This is a lightweight single communication wire that consists of a single core line surrounded by insulation. Voltage is applied to this line in order to drive communication, and this system is called a “Single Wire Voltage Drive”.