Ixxat®
BY HMS NETWORKS

USB-to-CAN V2

The Ixxat USB-to-CAN V2 series with optional galvanic isolation is an easy and cost-efficient way to connect computers to CAN bus networks. The device family offers proven and very reliable performance for various CAN applications, e.g. in the field of test, development, maintenance or control applications.

Thanks to their durable hardware and native USB 2.0 hi-speed connection (480 Mbit/s), the interfaces achieve very high data throughput while minimizing latency and power consumption. A best-in-class time stamp resolution of only one microsecond allows lossless transmission and reception of standard and extended CAN messages on the CAN bus and enables filtering and buffering capabilities for accurate CAN monitoring.

Please note that this data sheet doesn't showcase all available variants of the USB-to-CAN V2 series. Visit our website to get a comprehensive product overview.

FEATURES AND BENEFITS

- Cost-effective, versatile and extremely reliable
- High-precision time stamp accuracy
- High data throughput combined with low latency
- Native USB 2.0 hi-speed (480 Mbit/s), compatible with USB 1.1 and USB 3.x
- Optional galvanic isolation
- High-speed CAN connection up to 1 Mbit/s
- Common driver interface for easy exchange of the PC interface type
- Powerful programming interface for Windows (VCI) as well as for Linux (socketCAN or ECI), QNX and VxWorks (ECI)

For more information, visit our website.

TECHNICAL DATA	USB-TO-CAN V2 COMPACT	USB-TO-CAN V2 EMBEDDED	USB-TO-CAN V2 PROFESSIONAL	USB-TO-CAN V2 AUTOMOTIVE
ORDER NUMBER	1.01.0281.12001	1.01.0282.12001	1.01.0283.22002	1.01.0283.22042
CAN channels (high-speed)	1	1	2	2
CAN channels (low-speed)				1

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ORDER NUMBER	**1.01.0281.12001**	**1.01.0282.12001**	**1.01.0283.22002**	**1.01.0283.22042**
CAN bus interface	1 x D-Sub 9, CiA standard pinning according to CiA 303-1	1 x D-Sub 9, CiA standard pinning according to CiA 303-1	2 x RJ45 socket (incl. 2 x D-Sub 9-Adapter with CiA standard pinning according to CiA 303-1)	2 x RJ45 socket (incl. 2 x D-Sub 9-Adapter with CiA standard pinning according to CiA 303-1)
CAN bit rates	10 kbit/s to 1 Mbit/s	10 kbit/s to 1 Mbit/s	10 kbit/s to 1 Mbit/s	10 kbit/s to 1 Mbit/s (CAN high-speed), 10 kbit/s to 125 kbit/s (CAN low-speed)
CAN bus termination resistors	None	None	None	Yes, CAN low-speed with 4.7 kΩ
CAN controller	Internal; CAN 2.0 A/B			
CAN high-speed transceiver	SN65HVD251D			
CAN low-speed transceiver	-	-	-	NXP TJA1054
Galvanic isolation	1000 V DC for 1 sec., 500 V AC for 1 min.			
Time stamp resolution	150-250 µs			
LIN bit rates	-	-	-	Max. 20 kbit/s
LIN transceiver	-	-	-	NXP TJA1020
LIN VBAT	-	-	-	8 to 18 V DC, 12 V DC typical
LIN channels				1
USB interface	USB 2.0 hi-speed (480 Mbit/s), compatible with USB 1.1 and USB 3.x			
USB connector	Type-A connector	Internal USB cable with 5 pin female connector (ZHR-5P to TU5005HNO-1*5P). Assignment corresponds to PC standard for internal USB devices.	Type-A connector	Type-A connector
Microcontroller	32 Bit			
RAM	192 kByte			

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Flash	512 kByte			
Power supply	+5 V DC/300 mA (via USB port)			
Power consumption	48 mA-max. 300 mA			
Dimensions	80 x 50 x 22 mm	67 x 40 x 18 mm	80 x 50 x 22 mm	80 x 50 x 22 mm
Weight	Approx. 100 g			
Operating temperature	-20 °C to +70 °C			
Storage temperature	-40 °C to +85 °C			
Protection class	IP40	None	IP40	IP40
Relative humidity	10 to 95 %, non-condensing			
Certification	CE, FCC, UKCA			
Housing material	ABS plastic	-	ABS plastic	ABS plastic
LED	Two LEDs for CAN 1 and USB communication	None	Three LEDs for CAN 1, CAN 2 and USB communication	Five LEDs for CAN 1, CAN 2, CAN LS, LIN and USB communication
Operating systems	Windows 11, Windows 10 (32/64), Windows 8 (32/64), Windows 7 (32/64), Linux			

CERTIFICATES

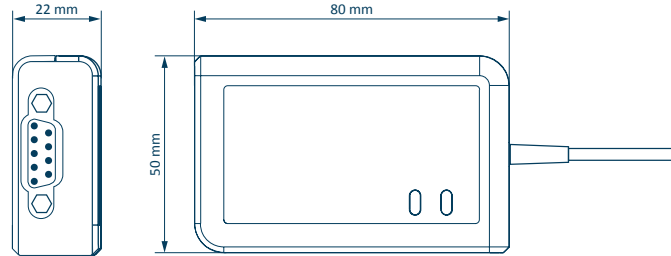| ACCESSORIES	ORDER NUMBER
Termination adapter for CAN/CAN FD (D-Sub male to female)	1.04.0075.03000
CAN cable 2.0 m (D-Sub male to female)	1.04.0076.00180
CAN Y cable 0.22 m	1.04.0076.00001
CAN Y cable 2.1 m	1.04.0076.00002

PIN ALLOCATION

CAN CONNECTOR D-Sub 9

Pin no.	Signal
7	CAN-High
2	CAN-Low
3, 6	CAN-GND

USB-to-CAN V2 compact
Order No. 1.01.0281.12001

TECHNICAL DRAWING

22 mm

80 mm

50 mm

USB-to-CAN V2 compact
Order No. 1.01.0281.12001

SOFTWARE SUPPORT

Drivers and programming interfaces

A comprehensive and stable driver and software package is available for the USB-to-CAN V2 series, which can be downloaded free of charge from ixxat.com/support.

The Ixxat driver packages for Windows (VCI) as well as Linux, INtime, RTX, VxWorks and QNX (ECI) also enable use in existing applications without software adaptation. The APIs for CANopen and SAE J1939 also support the USB-to-CAN V2 device family.

The VCI V4 (Virtual Communication Interface) is the driver interface for Ixxat interfaces under Windows and can be downloaded free of charge from ixxat.com/vci or ixxat.com/support. Customer-specific applications for communication via CAN, CAN-FD, LIN and Industrial Ethernet can be developed on the basis of the VCI.

Softwaretools

The software tool canAnalyser3 Mini is included in the VCI V4 download package and enables the first analysis steps and monitoring in CAN networks. Further information about the tools as well as Demo/Trial versions are available on the Ixxat webpage.

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