BKV Series USB Communication Tools

USB to RS485 Converter with 5V Isolated Power Out

USB to RS232 Converter with 5V Isolated Power Out

4 Port USB HUB for USB Type A

USB to Ethernet Switch

USB to P1 Companion Meter Interface Converter

USB to 868MHz Wireless MBus Converter

USB/RS232/RS485 to MBus Converter

USB to RS485 Converter with 5V Isolated Power Output

BKV114: with Type A Cable
BKV124: with Type C Cable

BKV Series USB to RS485 Converter with built-in isolated 5V Power Output helps users to easily connect field devices such as KMK114. It has USB Type A and Type C connection options on local field device side (such as PC).

RS485 Terminal Connector for 2 wire RS485 connection and GND, ESD Protection for RS485 I/O Pins

±15kV—Human Body Model, ±15kV—IEC61000-4-2, Air-Gap Discharge, ±8kV—IEC61000-4-2, Contact Discharge

Allows up to 256 Transceivers on the Bus

With Thermal Shutdown Feature and with Current-Limiting for Driver Overload Protection

Allows up to 500kbps error-free data transmission

5V Isolated Power Output, Polarity shown as In+ and In-

Supports Up to 200mA Load, with Reverse Polarity Protection

Following LEDs are available to show the device status.

PWR LED: Turns ON if the device is powered properly

Rx and Tx LEDs turn ON during data transfer according to data activity

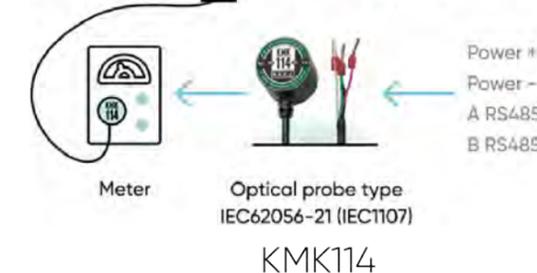Local Device with USB Type A or Type C Connection

Connect Field RS485 Devices to Local PC and Power Up with Isolated 5V Power Output

KMK114 RS485 Probe Also Gets Power From BKV

Field RS485 Devices

Up to 128 RS485 Devices

—— USB Connection: Type A or C
—— RS485 Connection
—— 5V Isolated Power

Meter

Optical probe type IEC62056-21 (IEC1107)

Power +
Power –
A RS485
B RS485

KMK114

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USB to RS232 Converter with 5V Isolated Power Output

BKV111: with Type A Cable
BKV121: with Type C Cable

BKV Series USB to RS232 Converter with built-in isolated 5V Power Output helps users to easily connect field devices such as KMK111. It has USB Type A and Type C connection options on local field device side (such as PC).

RS232 Terminal Connector for 3 wire RS232 connection, Tx, Rx and GND
ESD Protection for RSRS232 I/O Pins
±15kV—Human Body Model
±15kV—IEC61000-4-2, Air-Gap Discharge
±8kV—IEC61000-4-2, Contact Discharge
250kbps Minimum Transmission Rate

5V Isolated Power Output, Polarity shown as In+ and In-
Supports Up to 200mA Load, with Reverse Polarity Protection

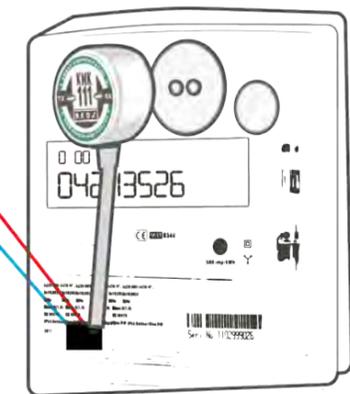Following LEDs are available to show the device status.
PWR LED: Turns ON if the device is powered properly
Rx and Tx LEDs turn ON during data transfer according to data activity

Local Device
with USB Type A or Type C
Connection

Connect Field RS232
Device to Local PC
and Power Up with
Isolated 5V Power Output

Field
RS232
Device

— USB Connection: Type A or C
— RS232 Connection
— 5V Isolated Power

KMK111
DB9 Female Pins:
2 - Rx
3 - Tx
4/7 - Power Input
5 - GND

KMK111
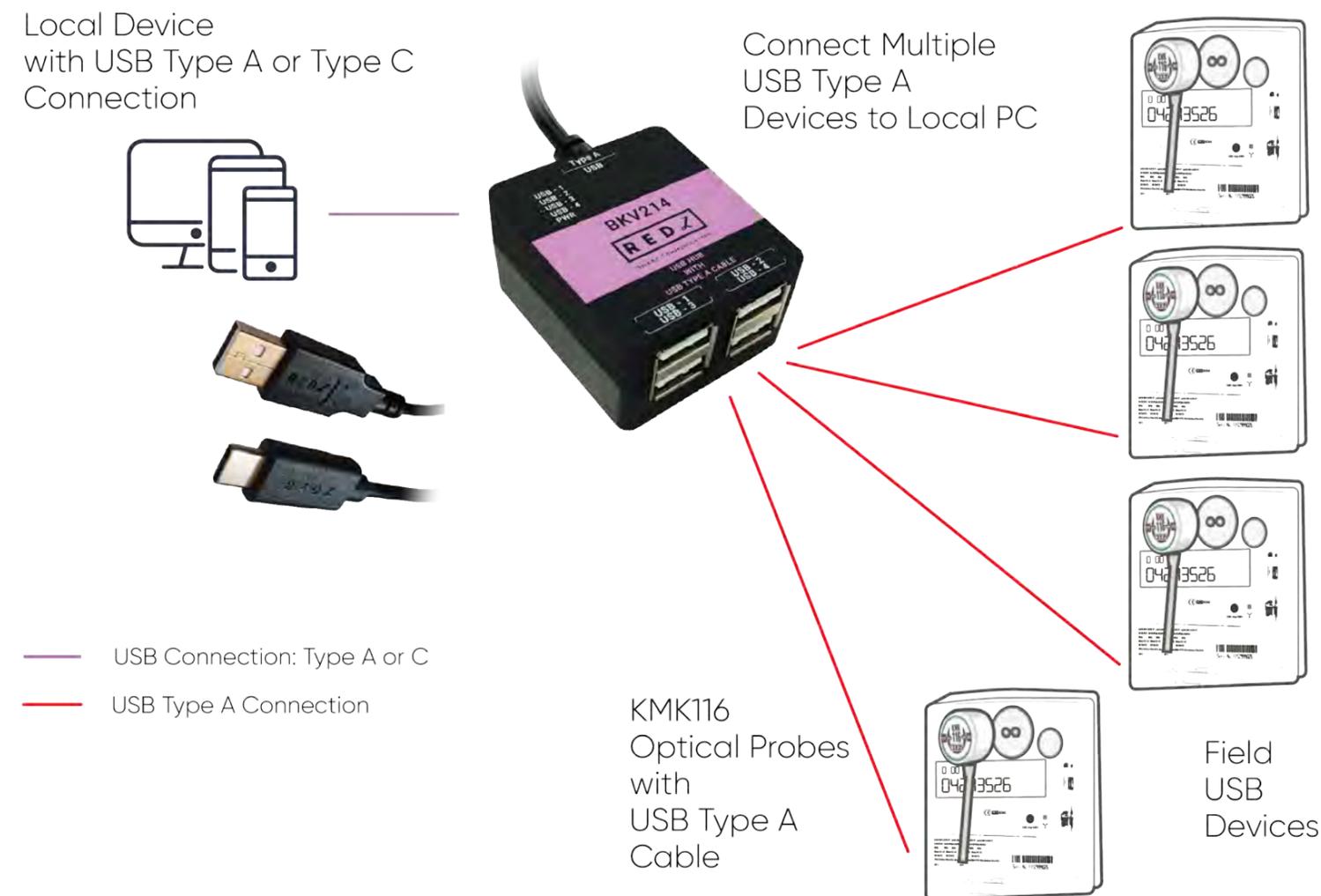RS232 Probe
Also Gets
Power From BKV

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BKV Series USB 2.0 - 4 Port USB Type A Hub helps users to easily extend USB connectivity for multiple USB devices like KMK116 series

4 Port USB 2.0 USB Type A Female Connectors

Fully compliant with Universal Serial Bus Specification Revision 2.0 (USB 2.0)

Compliant with Universal Charging Solution, and USB Battery Charging Specification 1.1/1.2

Following LEDs are available to show the device status.

PWR LED: Turns ON if the device is powered properly

USB 1-2-3-4 LEDS: Turns ON if the relevant port is used

Local Device
with USB Type A or Type C
Connection

Connect Multiple
USB Type A
Devices to Local PC

KMK116
Optical Probes
with
USB Type A
Cable

Field
USB
Devices

───── USB Connection: Type A or C

───── USB Type A Connection

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BKV Series USB to 2 Port Ethernet switch helps users to easily connect field devices such as STG-LKM-CKL... series over existing LAN and/or direct connection.
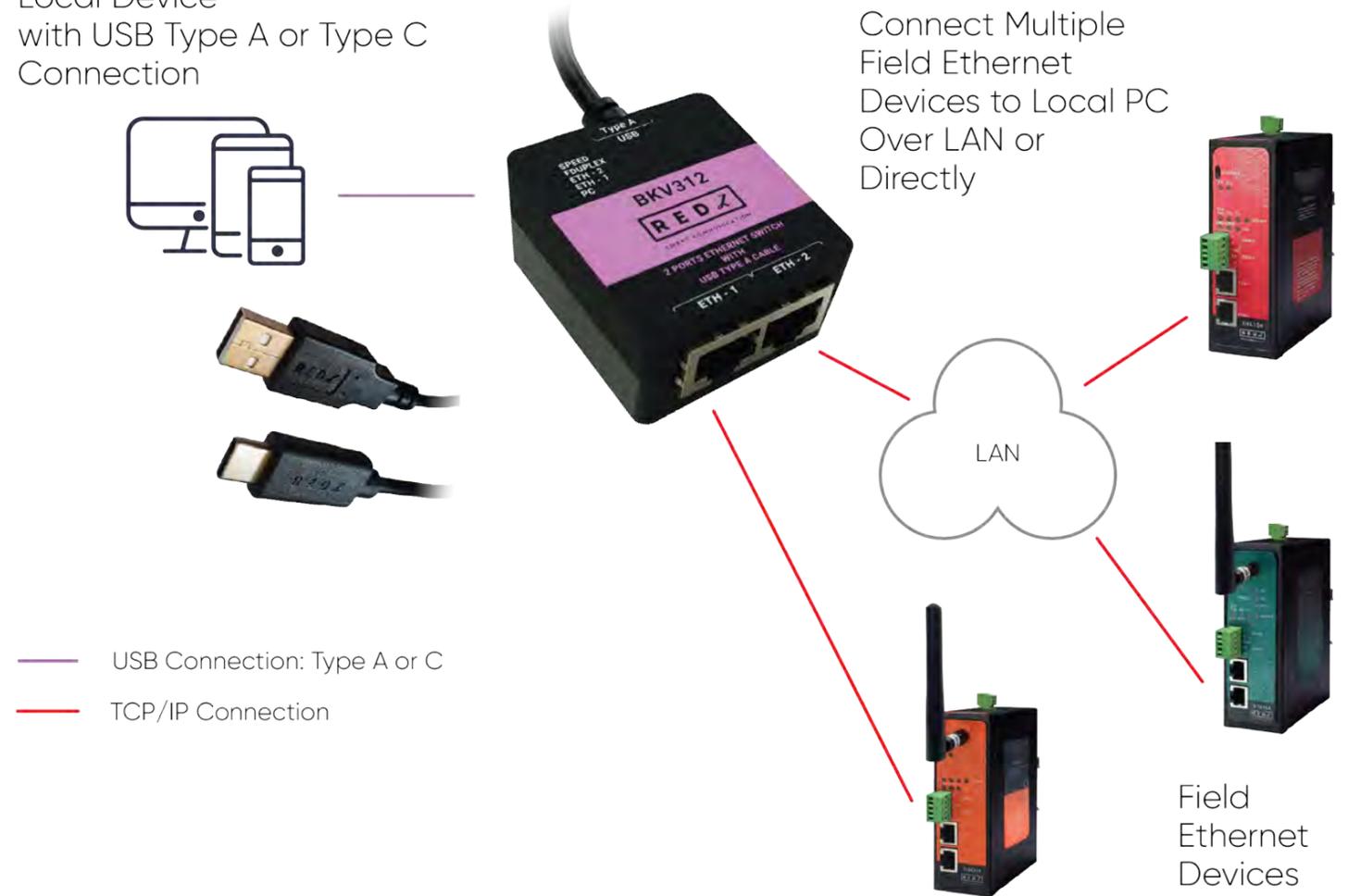
2 ports 10/100 Ethernet with Full-Duplex Support

Fully compliant with Hi-Speed Universal Serial Bus Specification Revision 2.0

Supports HS (480 Mbps) and FS (12 Mbps) modes

High-Performance 10/100 Ethernet Controller

Fully compliant with IEEE802.3/802.3u

10BASE-T and 100BASE-TX support

Full- and half-duplex support

Following LEDs are available to show the device status.

SPEED LED: Ethernet link 100Mbps when LED is ON and 10Mbps when LED is OFF

FDUPLEX LED: Ethernet link is Full Duplex when LED is ON and half duplex when LED is OFF

ETH 1-2 LEDS: Turns ON if the relevant port is used and there is data activity

PC LED: Turns ON when device connected via USB cable and powered up

Local Device with USB Type A or Type C Connection

Connect Multiple Field Ethernet Devices to Local PC Over LAN or Directly

LAN

Field Ethernet Devices

—— USB Connection: Type A or C

—— TCP/IP Connection

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USB to P1 Companion Protocol Meter Interface Converter

BKV416: with Type A Cable
BKV426: with Type C Cable

BKV Series USB to P1 Companion Protocol Meter Interface Converter helps users to easily get P1 Electricity meters data directly to local device such as PC.

P1 Terminal Connector for 3 wire P1 connection (Data, Data Request, GND) on Meter Side

ESD Protection on P1 Interface

– 2000 V Human-Body Model (A114-B, Class II)

– 200 V Machine Model (A115-A)

– 1000 V Charged-Device Model (C101)

RJ12 cable connection to meter must be prepared for meter connection based on desired length.

Check manual for cable pins.

Following LEDs are available to show the device status.

PWR LED: Turns ON if the device is powered properly

Rx and Tx LEDs turn ON during data transfer according to data activity

Local Device with USB Type A or Type C Connection

Connect P1 Companion Protocol Meter Interface Directly to Local Device
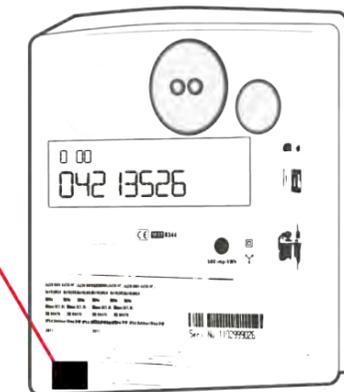
P1 Companion Protocol Meter

— USB Connection: Type A or C

— P1 Companion Interface Connection

Terminal Connector for 3 wire P1 connection Data, Data Request, GND) on P1 Meter Side RJ12 cable connection to meter must be prepared for meter connection based on desired length.

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USB to 868MHz WMBus (Wireless MBus) Converter

BKV511: with Type A Cable
BKV521: with Type C Cable

BKV Series USB to 868MHZ Wireless MBus Converter helps users to easily get WMBus messages from local WMBus devices directly to local PC

868MHz Wireless MBus (WMBus) Radio Frequency (RF) Communication

1 Standard SMA female Antenna interface, 50 ohm

Unlimited Numbers of WMbus device data can be listened over air and AES Decryption of Received Frames for up to 128 Devices available

AES Encryption of Transmitted frames is also available Link Modes Configurable (S - Mode, T - Mode, C - Mode, C/T - Mode together)

Supported CI Values: 53h, 5Bh, 60h, 6Ch, 6Dh, 6Eh, 6Fh, 72h, 74h ,75h, 78h, 7Ah, 7Ch, 7Dh, 80h, 8Ah, 8Bh, 8Ch, 8Dh, 8Eh, 8Fh, C3h, C4h, C5h

Following LEDs are available to show the device status.

PC Tx and RX LEDs turn ON and OFF based on data transmission on USB connection side

Status LED blinks during normal operation

RF Tx and RX LEDs turn ON and OFF based on data transmission on WMBus side

Local Device
with USB Type A or Type C
Connection

Connect Field
Wiress MBus
Devices to Local PC

Wireless Mbus
Network

Meters
Sending
WMBus
packages

—— USB Connection: Type A or C

(((Wiress MBus Connection

X numbers of meters

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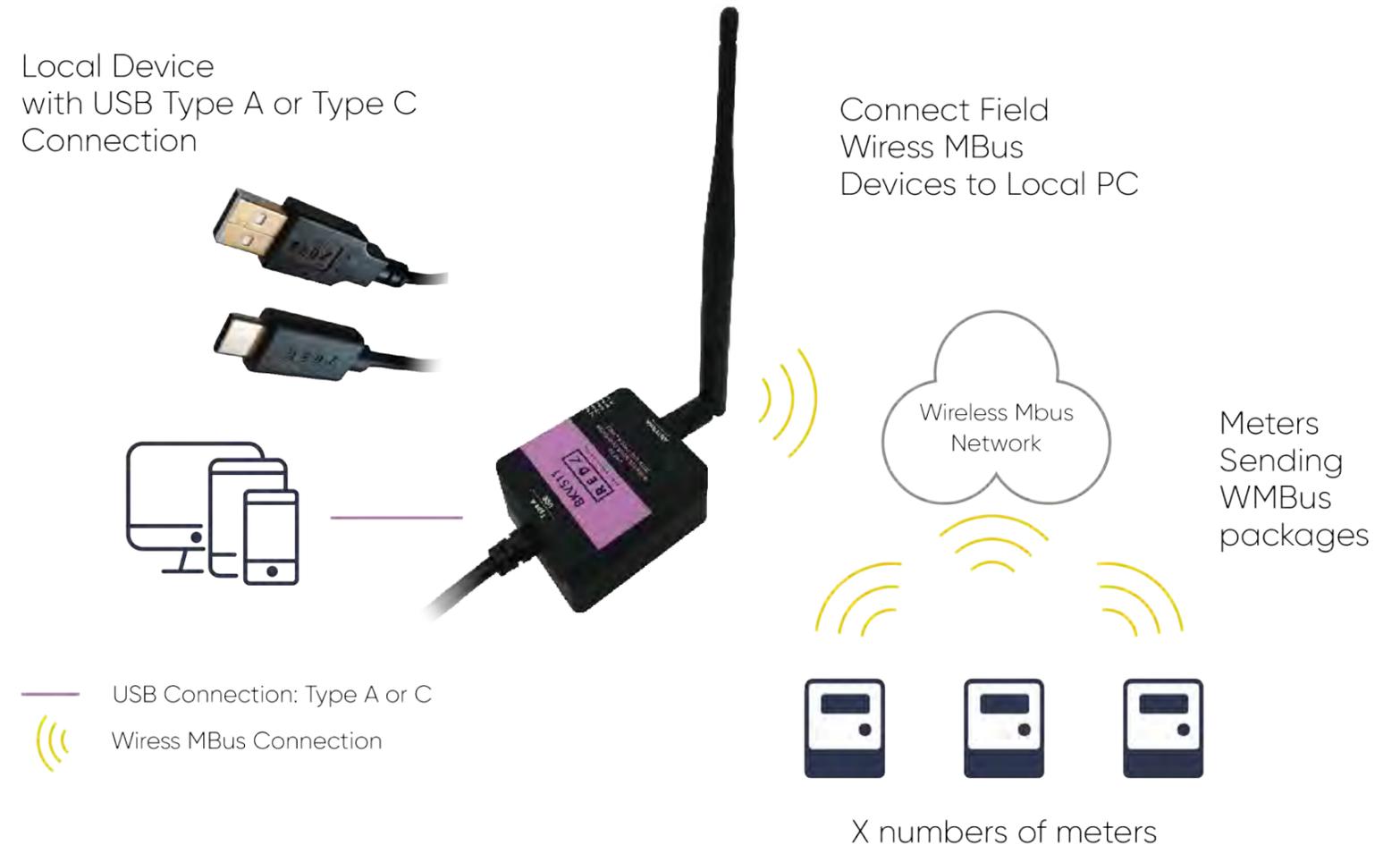
USB/RS232/RS485 to MBus Converter

BKV512: USB to MBus Converter with Type A Cable

BKV522: USB to MBus Converter with Type C Cable

BKV532: RS232 to MBus Converter

BKV542: RS485 to MBus Converter

BKV Series USB/RS232/RS485 to MBus Converters help users to easily connect up to 20 field MBus Slave devices locally (over USB/RS232/RS485 connection) or remotely (over RS232 or RS485 and a TCP to Serial Gateway like CKL Series). It enables data transmission between field MBus devices and control/monitoring software.

Max. Number of Slaves: Up to 20 Standard Unit Loads (1.5 mA each)
M-Bus Voltage (Mark / Space): ~36V DC / ~24V DC
Maximum Bus Current: 55.6 mA
Baud Rate: 300 to 9600 bps
Max. Capacitive Load: 1000 μF (Excellent for long M-Bus cable runs)
Galvanic Isolation: 1500V DC (High-reliability opto-isolation)
Short Circuit Protection: Continuous short-circuit protection with auto-recovery
Overvoltage Protection: TVS/Zener diode protected M-Bus inputs

USB Models:
Plug and Play. USB bus-powered. No external power supply is required for the MBus line.
Integrated High-Efficiency (88%) 2W Isolated DC-DC Converter.
RS232 and RS485 Models:
±15kV ESD Protection on RS232 pins and RS485 pins.
Externally Powered by 12V DC. Generates required MBus voltage internally (no extra MBus power supply needed).
Integrated High-Efficiency (90%) 2W Isolated DC-DC Converter.

Following LEDs are available to show the device status.
PWR LED: Indicates the device is properly powered.
Tx / Rx LEDs: Indicate active data transmission on the USB/RS232/RS485 side.

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Local Device
with USB Type A or Type C
Connection

Connect Field
MBus Devices to
Local Software

Up to 20 MBus Slave devices

— USB Connection: Type A or C
— MBus Connection

Remote Server
with MBus Software

WAN/LAN

Connect Field
MBus Devices to
Local or Remote Software

Local Device
with RS232 or RS485
Connection

Up to 20 MBus Slave devices

— Serial Connection: RS232 or RS485
— MBus Connection
— TCP / IP Connection

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Ordering Information

BKV111: USB to RS232 Converter With USB Type A Cable and 5V Isolated Power Output

BKV114: USB to RS485 Converter With USB Type A Cable and 5V Isolated Power Output

BKV121: USB to RS232 Converter With USB Type C Cable and 5V Isolated Power Output

BKV124: USB to RS485 Converter With USB Type C Cable and 5V Isolated Power Output

BKV214: 4 Port USB 2.0 Type A Hub With USB Type A Cable

BKV224: 4 Port USB 2.0 Type A Hub With USB Type C Cable

BKV312: USB to 2 Port Ethernet Switch With USB Type A Cable

BKV322: USB to 2 Port Ethernet Switch With USB Type C Cable

BKV416: USB to P1 Companion Protocol Meter Interface Converter With USB Type A Cable

BKV426: USB to P1 Companion Protocol Meter Interface Converter With USB Type C Cable

BKV511: USB to 868MHz WMBus (Wireless MBus) Converter With USB Type A Cable

BKV521: USB to 868MHz WMBus (Wireless MBus) Converter With USB Type C Cable

BKV512: USB to MBus Converter With USB Type A Cable

BKV522: USB to MBus Converter With USB Type C Cable

BKV532: RS232 to MBus Converter

BKV542: RS485 to MBus Converter

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Product Selection

Model	USB Type A Cable for PC Connection	USB Type C Cable for PC Connection	RS485 Connection	RS232 Connection	5V Isolated Power Output	4 Port USB 2.0 Type A Hub	2 x 10/100 T(x) ETH ports	P1 Companion Meter Interface	868MHz Wiress MBus (WMBus)	MBus Interface
BKV111	●			●	●					
BKV114	●		●		●					
BKV121		●		●	●					
BKV124		●	●		●					
BKV214	●					●				
BKV224		●				●				
BKV312	●						●			
BKV322		●					●			
BKV416	●							●		
BKV426		●						●		
BKV511	●								●	
BKV521		●							●	
BKV512	●									●
BKV522		●								●
BKV532				●						●
BKV542			●							●

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