



HNS SMUX-4

HNS USBMUX-1, USBMUX-4 and USBMUX-8

Digimatic Interfaces

Communication Protocol

Programmer's Reference



The USBMUX interfaces can be accessed using the virtual COM ports are appeared after installation of interfaces. Download and run this FTDI CDM installation file to install the USB device: http://www.hns.eu/spce/MUX/CDM_Setup.exe.

The interface can be used as a simple serial line device. You can use the Windows API functions or yours RS232C communication library to send your commands to and receive answers from the interface.

Channels

Interface	Number of channels (connectable Digimatic gauges)	Channel ID's
HNS USBMUX-1	1	0
HNS SMUX-4 and USBMUX-4	4	0..3
HNS USBMUX-8	8	0..7

Attention!

The channels have fixed priority.

Channel 0 has the highest and the channel 3 or the channel 7 has the lowest priority.

Communication

The displayed value of the gauge can be read sending the read command with channel ID to the interface using standard COM port or the virtual COM port of the USB device.

Interface automatically sending a message (including the measured value) to the PC, when the DATA button of gauge or cable is pressed. Interface automatically sending a message to the PC also, when the foot pedal is pressed.

COM Settings

Baud rate: 9600bps, Data Bits: 7, Parity: none, Stop bits: 1

Messages

Query the channel

PC → Interface

'?' # Cr

Receiving measured value from the channel

Interface → PC

+/- Measured value Cr

Signal of foot switch

Interface → PC

'*' Cr

Error message

Interface → PC

Error code Cr

Query the interface ID

PC → Interface

! Cr

Receiving interface ID

Interface → PC

Channels Serial number Cr

Where

#: channel ID (USBMUX-4: '0'..'3'; USBMUX-8: '0'..'7')

Channels: number of channels (USBMUX-4: '4'; USBMUX-8: '8')

Measured value: always 7 characters (see below).

Measured value	Characters of measured value at the message
15.36	+0015.36
-8.76	-0008.76

Error code:

Code	Error	Reason
'0'	Time out (gauge did not answer).	Gauge is not connected to the channel or the gauge is not turned on.
'1'	Interface received an invalid message from the gauge.	Data transmitting failure between the gauge and the interface is failed. It can be caused by damaged data cable or by incorrect connection.
'2'	Invalid channel ID.	The channel ID is invalid at the query command sent by the application.

The interface does not answer if the format of the message from the application is invalid (first character of the message is not '?' or '!'), these messages are skipped by the interface.

The interface sends answer for valid messages within 2 seconds. The interface is not connected properly or the USB device installation is failed if no answer received by the application.