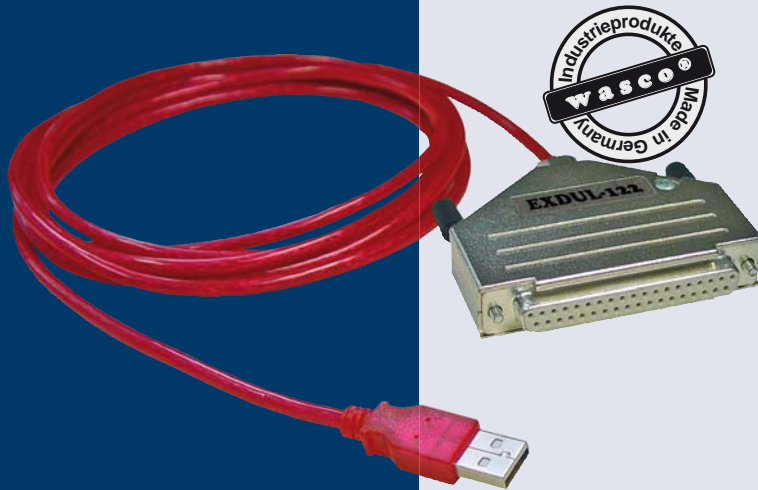# wasco®

EXDUL-122

USB Multifunctional Adapter with Eight Analog Inputs, Two Analog Outputs, 24 Digital Inputs/Outputs by TTL

8 A/D inputs 12-bit
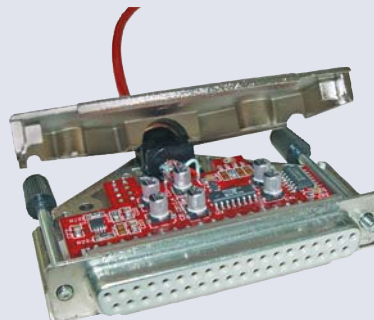4 A/D inputs differential or
8 A/D inputs single-ended

2 D/A outputs 12-bit

24 TTL inputs/outputs

The multifunctional measuring and control adapter EXDUL-122 provides eight ground-referenced or four pseudo-differential input channels with a 12-bit resolution and an input voltage range of 0 - 2,5 Volt. The two analog 12-bit output channels are adjusted to a voltage range of 0 - 2,5 Volt, the maximum output current is 1 mA. 24 digital input/output channels of TTL level and programmable in groups of eight or four channels to be input or output serve for other control tasks. The compact and absolutely robust metal casing integrates the entire control logic as well as the 37-pin Sub-D socket to connect to peripheral devices. Connection to a PC is made easily and conveniently Plug-and-Play via a USB interface also used for the required voltage supply.

SPECIFICATIONS

Measuring and control logic
The absolutely robust and compactly designed metal housing contains the entire technology and all features for measuring and control tasks

A/D Inputs
Channels: 8 inputs single-ended or
4 inputs pseudo-differential
Resolution: 12 bit
Voltage range: 0...2,5 V
Input impedance: > 10 MΩ
A/D converter with Sample & Hold

Accuracy:	typ.	+/-2 LSB
	max.	+/-12 LSB
Offset:	typ.	+/-1,25 LSB
	max.	+/-3 LSB
Gain:	typ.	+/-1,25 LSB
	max.	+/-5 LSB

Sampling rate: max. 1 kS/s (system specific)

Analog Outputs
Channels: 2 Outputs
Resolution: 12 bit

Accuracy:	typ.	+/- 2 LSB
	max.	+/-12 LSB
Offset:	typ.	+/- 0,02 % FSR
	max.	1 % FSR
Gain:	typ.	- 0,10 % FSR
	max.	1 % FSR

Voltage range: 0...2,5 V
Output current: max. 1 mA

Digital Inputs/Outputs
24 channel, TTL compatible
grouped in three ports with each eight channels, one of the ports programmable in two groups with four channels to be input or output

| Logic level: | Low | 0...1 V |
| | High | 4...5 V |

Output Current:
max. 5 mA (per each digital output)
max. 20 mA (all digital outputs summarized)

Operating Voltage
+5 V (supplied by the PC's USB socket)

Power Consumption
max. 100 mA

Connectors
1 * 37-pin Sub-D female socket
1 * USB plug Type A

USB Interface
USB 2.0 compatible

Dimensions
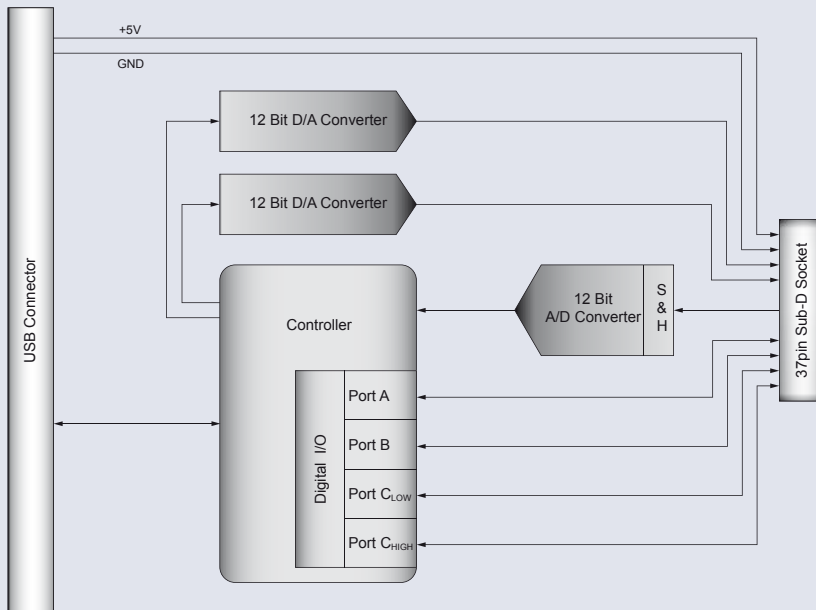Metal housing with Sub-D socket:
72 mm x 58 mm x 15 mm
USB cable incl. plug: ca. 2.5 m

Casing
Compact EMV ful metal casing made of zinc die-cast with silver surface and knurled screws for tightening, extremely robust and mechanically durable
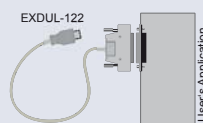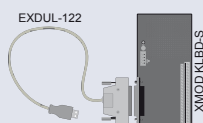
Block Diagram

Pin Assignment

Eight analog inputs, two analog outputs and 24 programmable digital inputs/outputs are fed to the 37pin Sub-D female socket CN1. The PC's ground (GND) and the internal power supply are also fed to the Sub-D socket CN1 via the USB interface for other control tasks. Please pay attention to the maximum permissable current load of the USB port.

Sub-D Socket CN1

Left pin	Pin #	Pin #	Right pin
DIOA00	1	20	DIOA01
DIOA02	2	21	DIOA03
DIOA04	3	22	DIOA05
DIOA06	4	23	DIOA07
DIOB00	5	24	DIOB01
DIOB02	6	25	DIOB03
DIOB04	7	26	DIOB05
DIOB06	8	27	DIOB07
$DIOC_{LOW}00$ / DIOC00	9	28	DIOC01 / $DIOC_{LOW}01$
$DIOC_{LOW}02$ / DIOC02	10	29	DIOC03 / $DIOC_{LOW}03$
$DIOC_{HIGH}00$ / DIOC04	11	30	DIOC05 / $DIOC_{HIGH}01$
$DIOC_{HIGH}02$ / DIOC06	12	31	DIOC07 / $DIOC_{HIGH}03$
GND	13	32	AIN00
AIN01	14	33	AIN02
AIN03	15	34	AIN04
AIN05	16	35	AIN06
AIN07	17	36	GND
AOUT1	18	37	AOUT2
Vcc	19		

Assembly and Application Options

EXDUL-122 — XMOD KLBD-S

EXDUL-122 — User's Application