Fluidea

Remote controls & control electronics 03.03

Electric Proportional Pedals Series PEP

03.PEP - 0911

Index of content:

Description:

The PEP series electric proportional foot pedals are used to remotely control, via cable, electro-hydraulic pressure reducing valves typically used for fine positioning of directional control valve's spools, or servo-controls of variable displacement pumps and motors.

Supply voltage of 12 or 24 VDC to be stabilized at a constant value of 5 (option 05) or 12 (option 12) Volt upstream the joystick's input connection.

The PEP foot pedal, available in single & dual service options, is built to perform under the worse possible conditions. The unique design places Hall sensors and electronics behind a solid plastic diaphragm that separates the top and bottom halves of the front pedal, sealing the electronics in an IP68 rated enclosure. The bottom half of the pedal utilizes the same proven non contacting analogue output Hall technology used in the Joystick and is available in J1939 and CAN Open formats.

It provides 8 analogue input channels, 13 digital input channels, 2 digital output channels and I/O extension for up to 40 digital input cannels and 8 analogue input channels by means of I2C interface. It will withstand operating temperature extremes of -40 °C to +85 °C is sealed to IP68 immersion requirements and passes EMI/RFI immunity testing to 100 Volts/ meter. The PEP foot pedal provides a life expectance of over 9 million cycles. The pedals pivot point itself is also sealed against large debris.

Customer specified features such as pre-travel (dead band) and over travel along with a minimum and maximum output are programmable. The sensor programming is completed in automated fixtures during assembly ensuring tight output tolerances.

This technical catalogue is referred to the foot pedal with analogue and PWM output signal options, for other output format configurations please contact our technical department.

Features:

- Heavy gauge, corrosion resistant metal
- Pedal pivot point sealed against large debris
- Proven contactless analogue output Hall technology
- Hall sensors and electronics behind a solid plastic diaphragm that separates the top and bottom halves of the foot pedal
- Life expectancy of over 9 million cycles
- Electronics sealed to IP68S
- Programmable pre-travel (dead band) and over-travel along with minimum and maximum output
- Sensor programming is completed in automated fixtures during assembly ensuring tight output tolerances
- Analogue, PWM, CANbus and USB output signal options
- EMI/RFI shielding up to 100V/M
- Reverse polarity protection available
- Conforming with RoHS & WEEE

Technical data:

Electrical:

	MIN	TYP	MAX
Electrical life	9.000.000 cycles		
Supply current Vcc=5 Volt, Io=0 (mA)	N/A	N/A	100
Output resistance (@ Io ≤ -2 mA) (Ω)	N/A	100	N/A
Analog supply voltage, option 05 (VDC)	4,50	5,00	5,50
Analog supply voltage, option 12 (VDC)	8,00	12,00	18,00
Tolerance on output signal at center position (VDC)	-0,15	N/A	+0,15
Tolerance on output signal at full travel (VDC)	-0,15	N/A	+0,15
Limit switch supply voltage(VDC)	5,00	N/A	30,00
Limit switch actuation angle (°)	1	2	3

Mechanical:

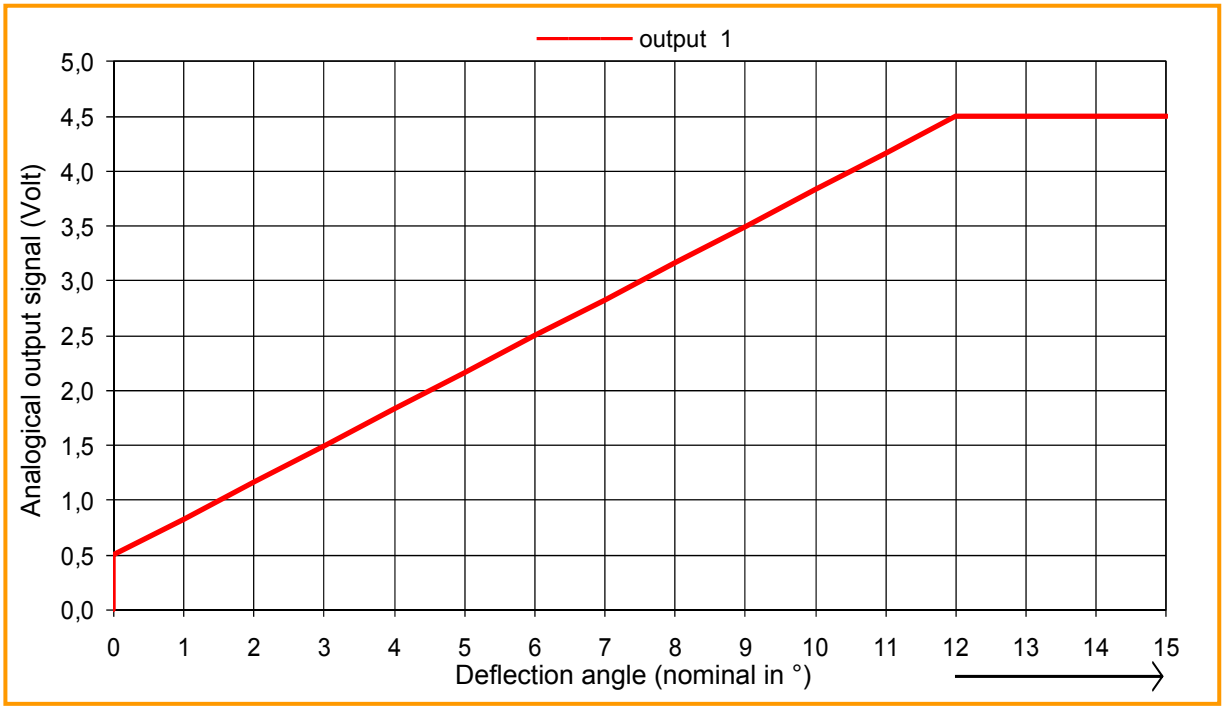
	MIN	TYP	MAX
Mechanical life	9.000.000 cycles		
Nominal deflection angle, dual design configuration (°)	13 BW	26	13 FW
Nominal deflection angle, single design configuration (°)	13	15	16
Analog output pre-travel angle (°)	0,5	1,0	1,5
Analog output over-travel angle (°)	0,5	1,0	1,5
Operating force at -40÷85°C on I/A @ α 6,5° (N)	15,6	20,0	24,4

Environmental:

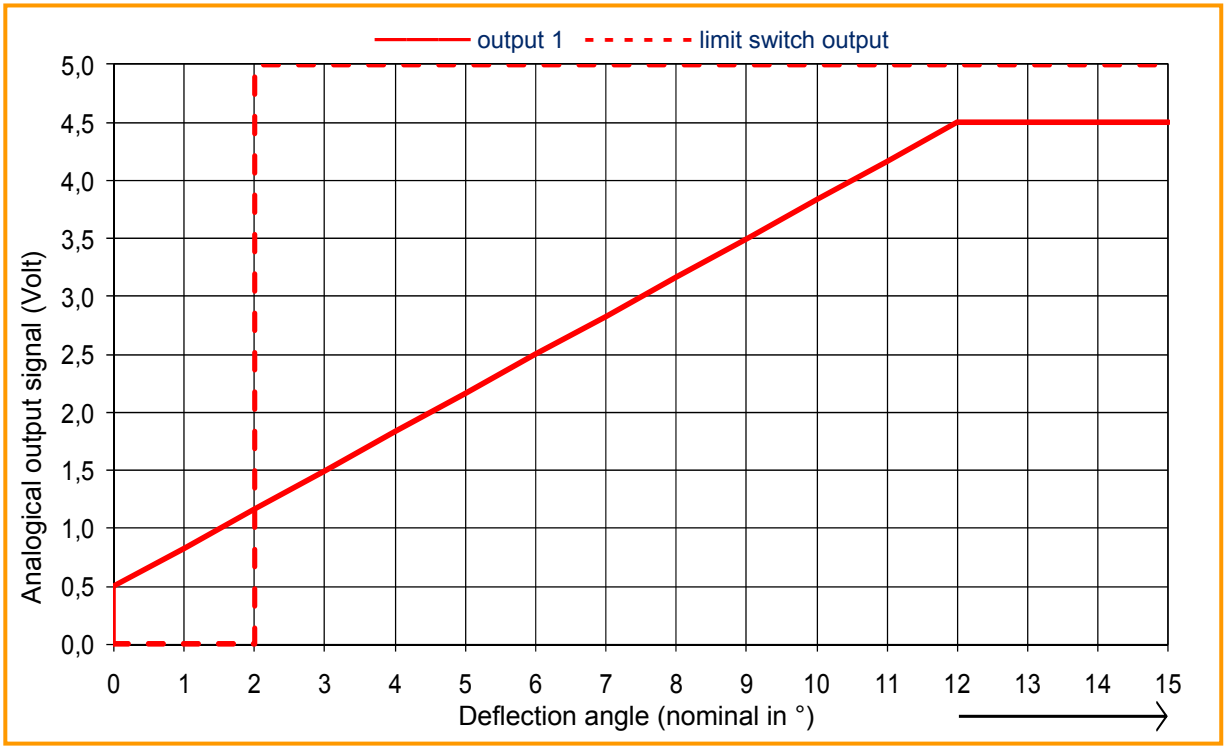
	MIN	TYP	MAX
Operating temperature (°C)	-40	20	85
Storage temperature (°C)	-65	20	105
Humidity	96% RH @ 70 °C, 96 hrs		
Vibration	10g, 10 Hz ÷ 2kHz swept synusoidal		
Electronic seal integrity	IP68		
RFI withstand	100V/M, 14 kHz to 1 GHz		
EMI withstand	MIL-STD-461D/SAE J1113-22		

Output metering curves:

A Single design foot pedal (zero - max.) 1 output

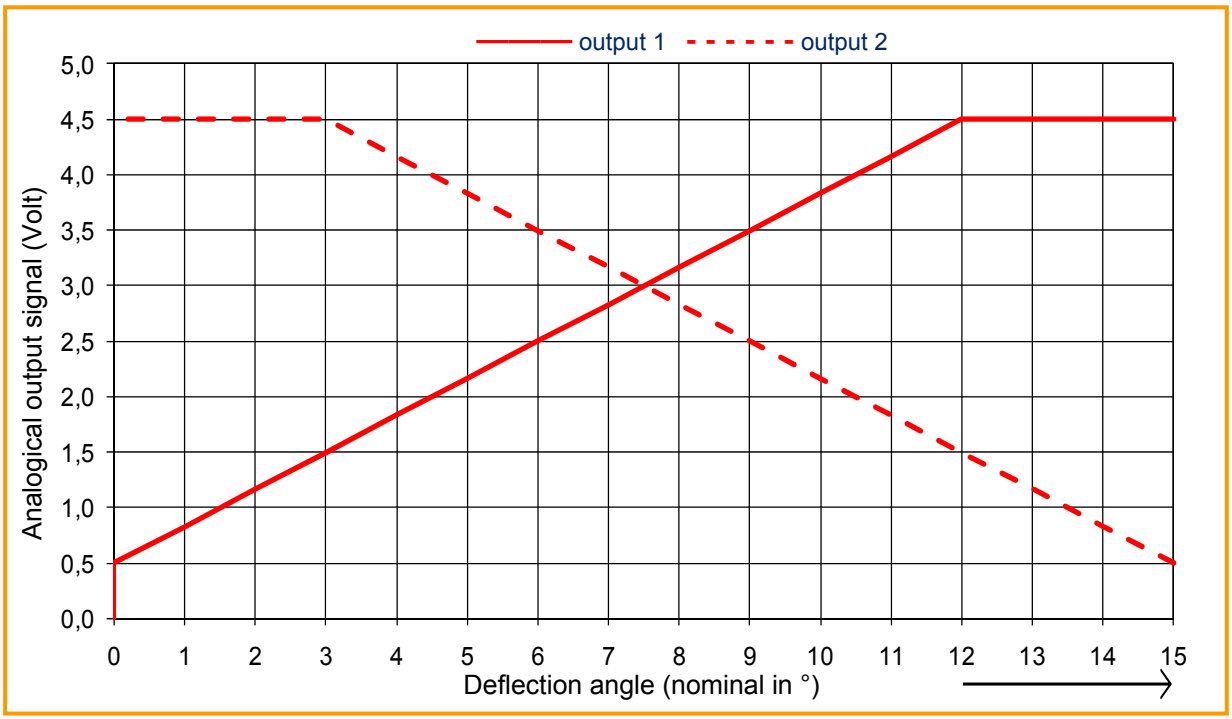


B Single design foot pedal (zero - max.) 1 output + limit switch

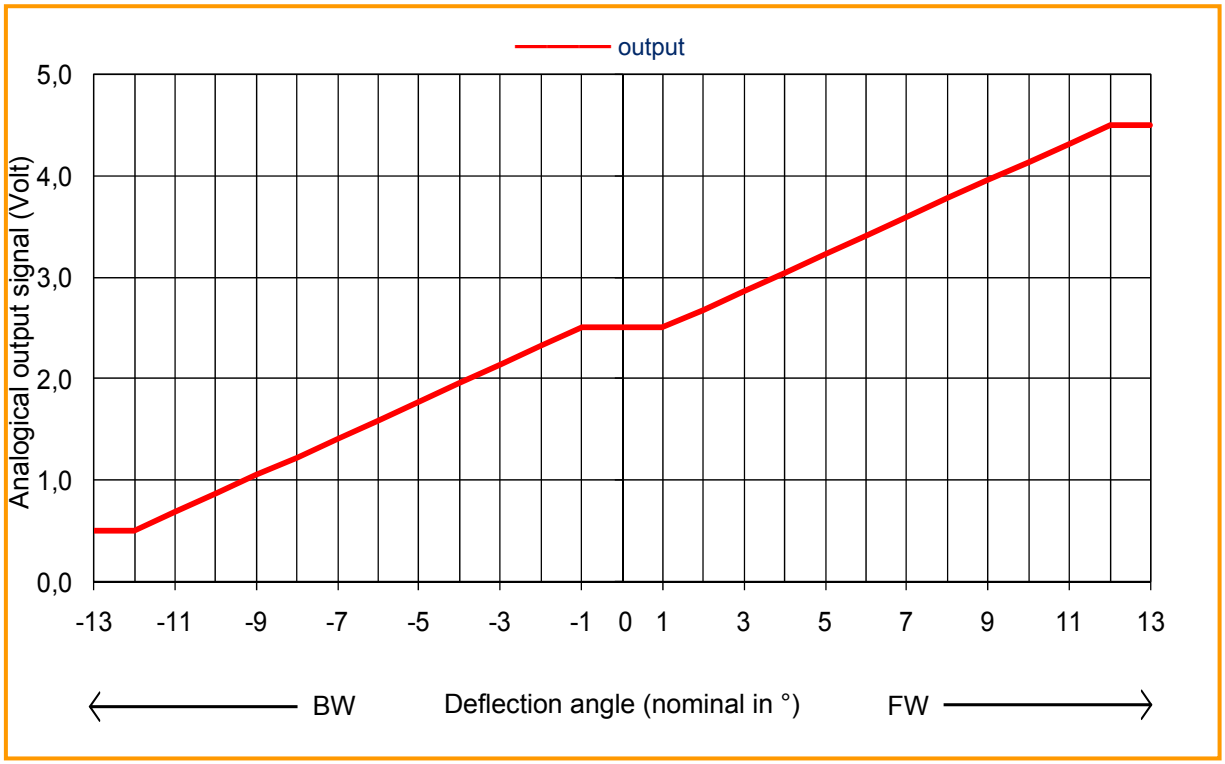


Output metering curves:

C Single design foot pedal (zero - max.) 2 outputs

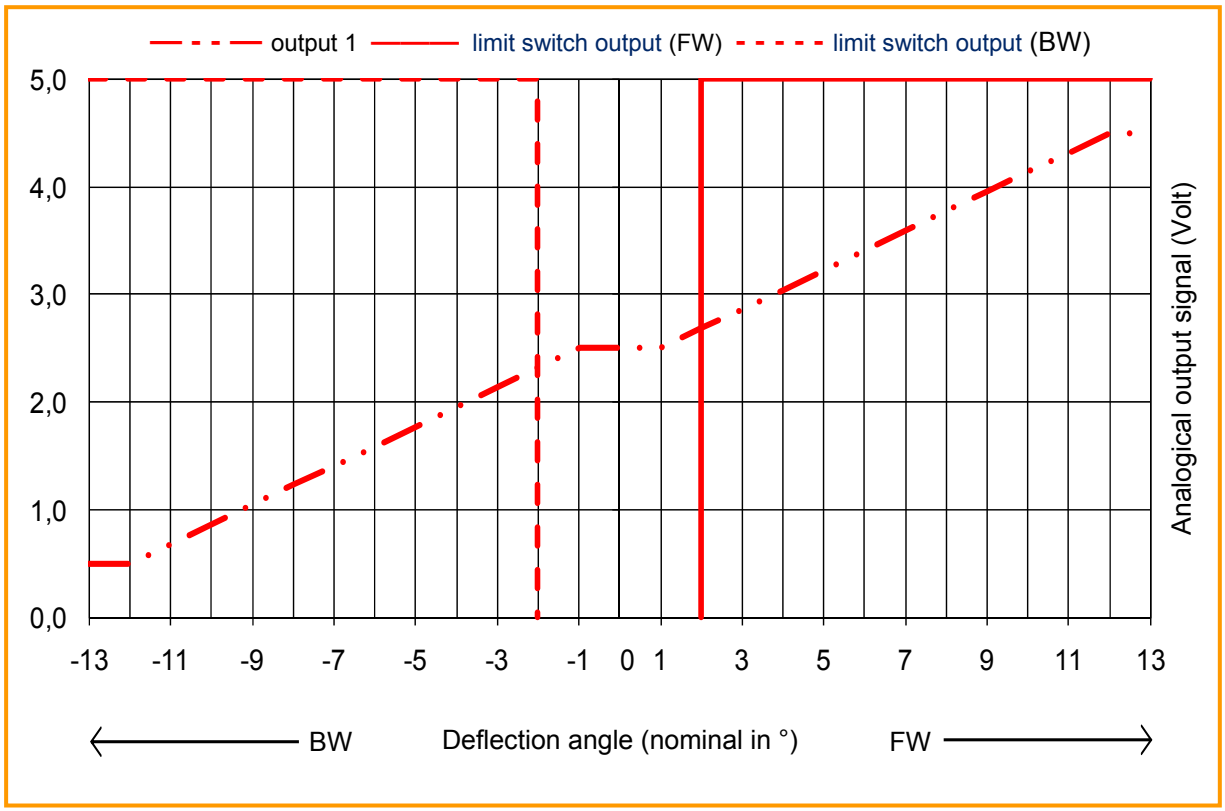


D Dual design foot pedal (BW - zero - FW) 1 output

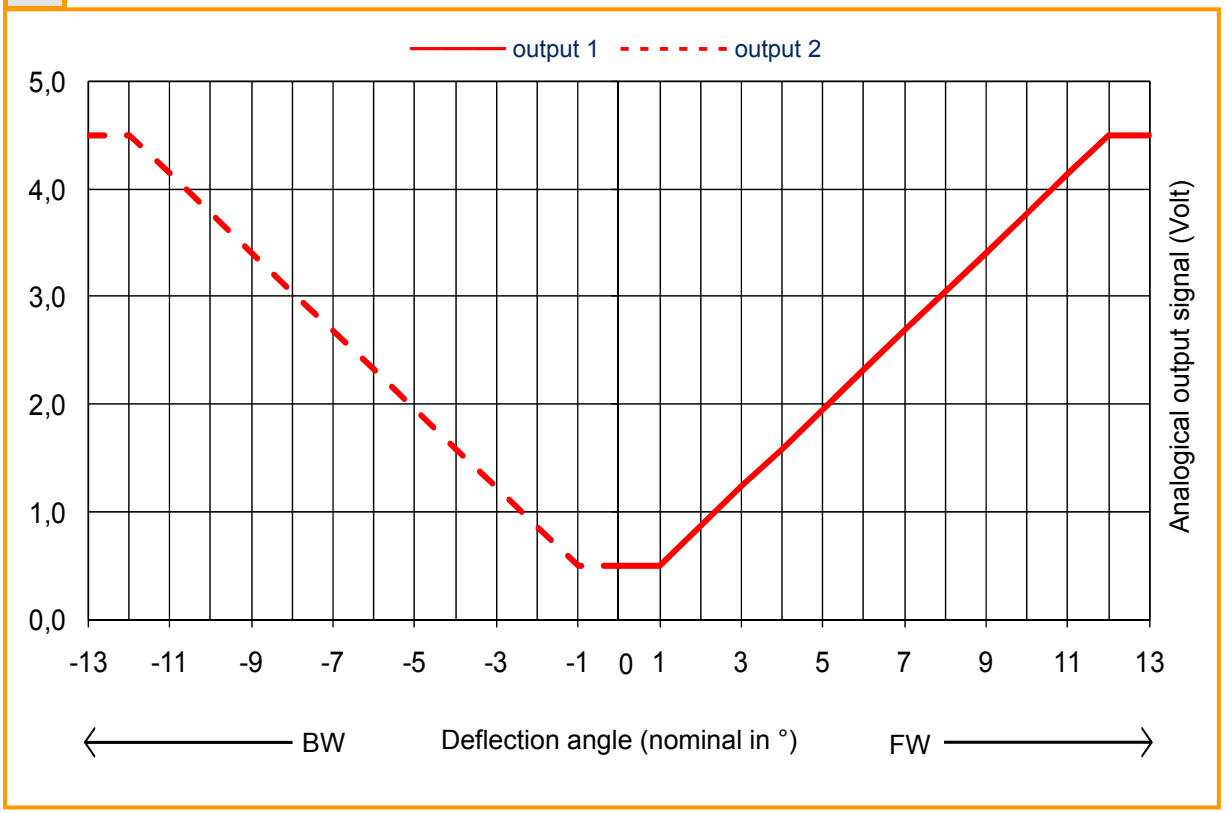


Output metering curves:

E Dual design foot pedal (BW - zero - FW) + 2 limit switches FW & BW

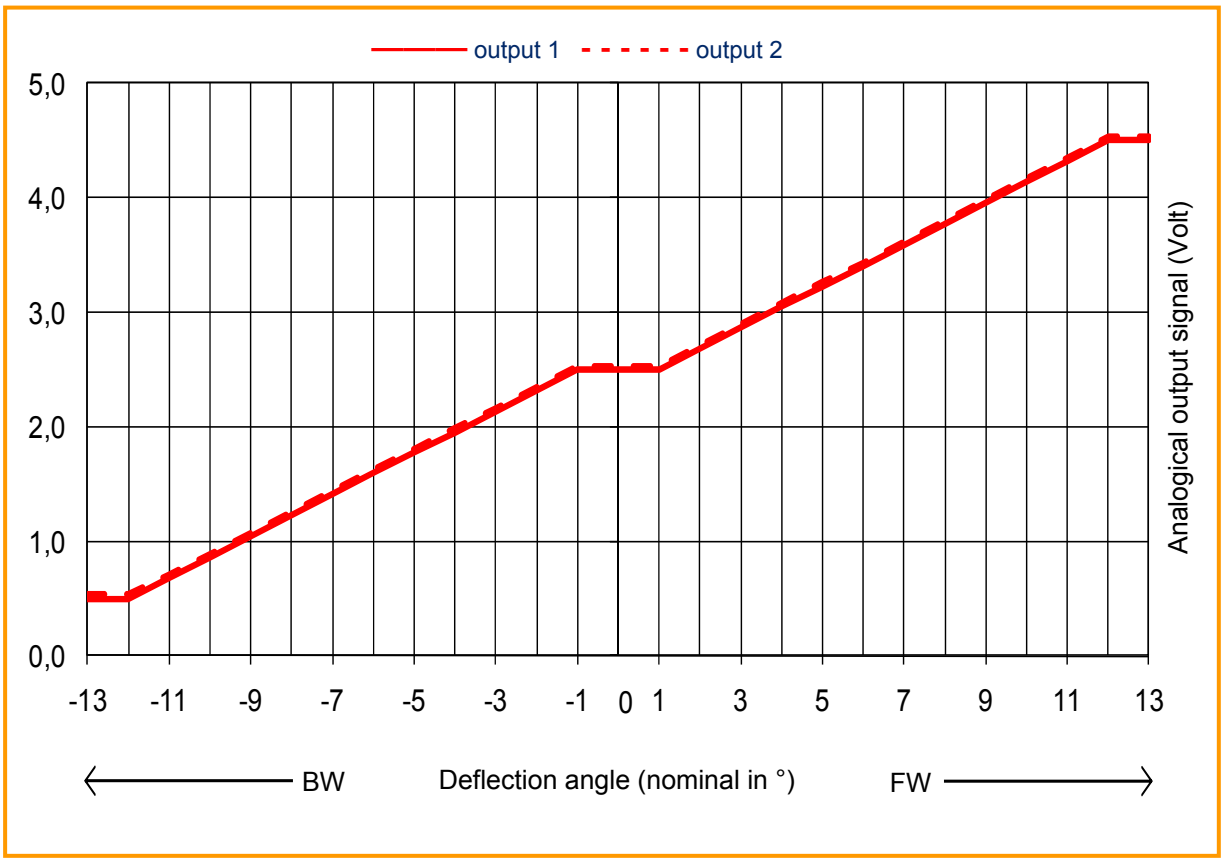


F Dual design foot pedal (BW - zero - FW) 2 outputs

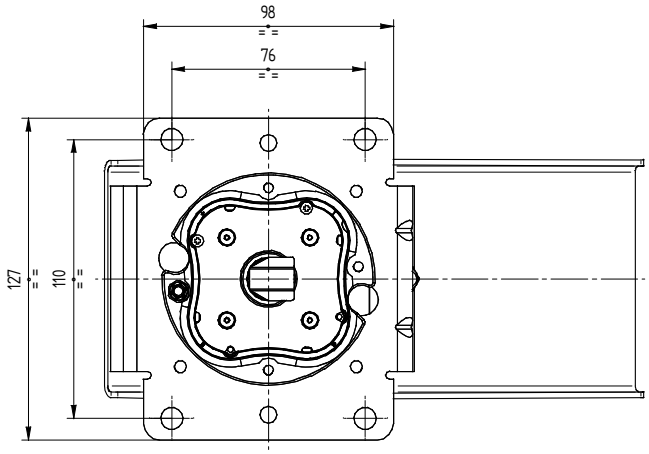


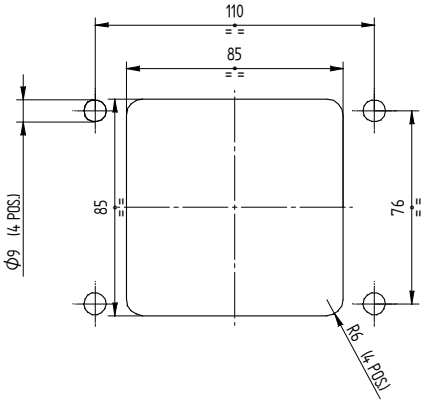
Output metering curves:

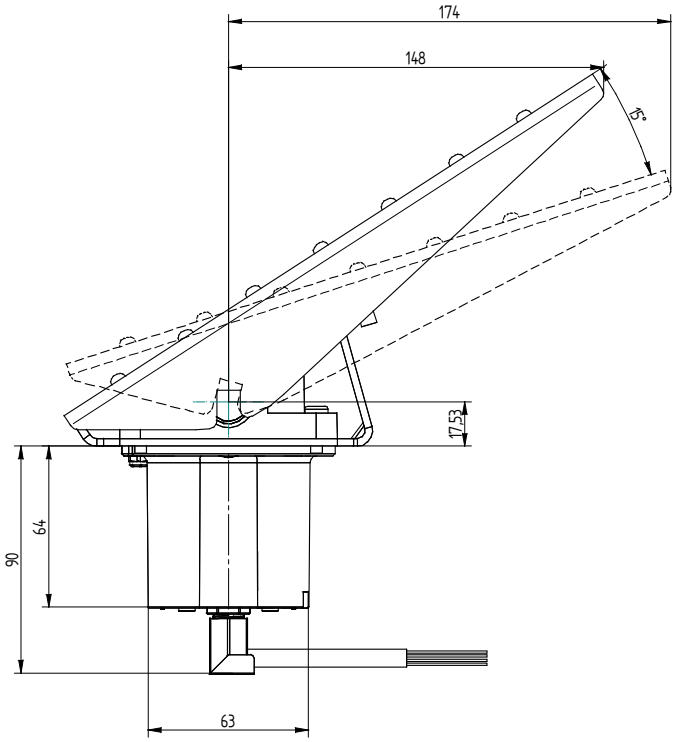
G Dual design foot pedal (BW - zero - FW) 2 outputs

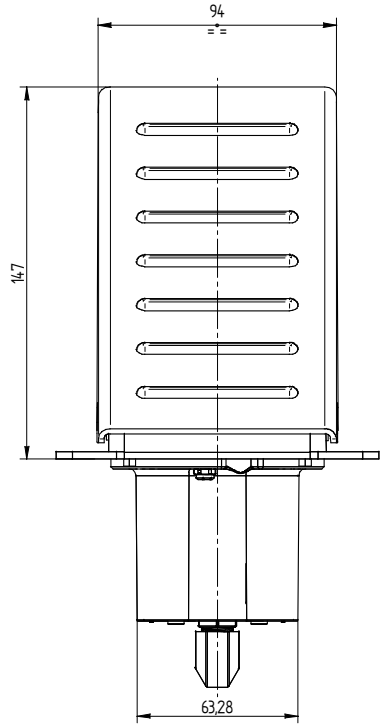


Dimensional data:



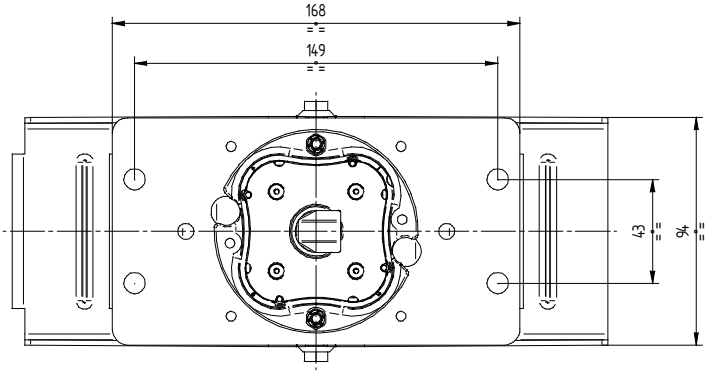


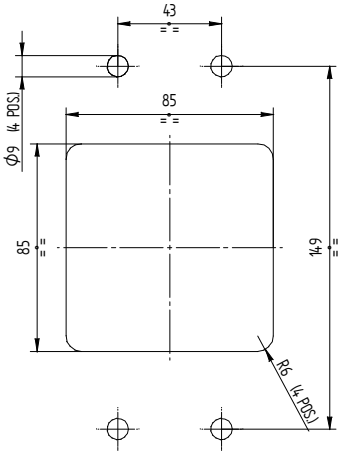


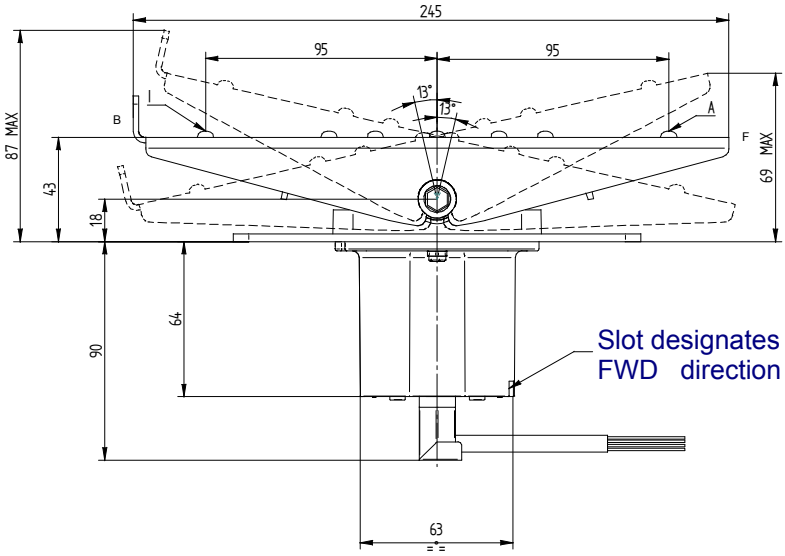


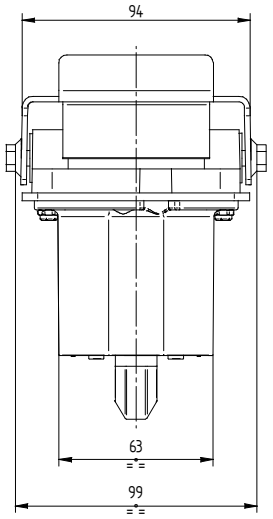
PEPA1 foot pedal, single design configuration

Dimensional data:









PEPA2 foot pedal, dual design configuration

Ordering key:

PEP	A	2	D	1	05

Input signal:

- **05** = Input signal 5 Volt DC stabilized, without reverse polarity protection system
- **12** = Input signal 12 Volt DC stabilized, with reverse polarity protection system

Sealing:

- **1** = Fully sealed, standard
  For other options please contact us

Output metering curves (pages 5-6-7-8):

- **A** = Single design pedal (zero-max) 1 output 0,5 to 4,5 VDC
- **B** = Single design pedal (zero-max) 1 output 0,5 to 4,5 VDC and 1 limit switch
- **C** = Single design pedal (zero-max) 2 outputs 0,5 to 4,5 VDC & 4,5-0,5 VDC
- **D** = Dual design pedal (FW-0-BW) 1 output 0,5-2,5-4,5 VDC
- **E** = Dual design pedal (FW-0-BW) 1 output 0,5-2,5-4,5 VDC and 2 limit switches
- **F** = Dual design pedal (FW-0-BW) 1 output 4,5-0,5-4,5 VDC
- **G** = Dual design pedal (FW-0-BW) 2 outputs 0,5-2,5-4,5 VDC

Foot pedal design:

- **1** = Single design foot pedal with a deflection angle of 15°
- **2** = Dual design foot pedak with a deflection angle of 26° (13° FW - 13° BW)

Ouput signal format:

- **A** = Analogic
- **P** = PWM
- **C** = CANbus (*)
- **U** = USB (*)

(*) Code to be assigned by Fluidea's Technical Office

Design series:

- **PEP** = Electric proportional pedal

excellence in hydraulic & electronic systems with competence

& innovative ideas

The range

● Hydraulics pumps & motors ● Directional control valves ● Remote controls & electronics equipment ● Filters & contamination control ● Heat exchangers & cooling systems ● Fluid monitoring instruments ● Mechanical couplings & accessories ● Design and supply of hydraulic components and customized systems

Via Poggio, 14 I-41014 Castelvetro di Modena - Italia
Tel.+39 059 741007-Fax.+39 059 741652
info@fluidea.net www.fluidea.net