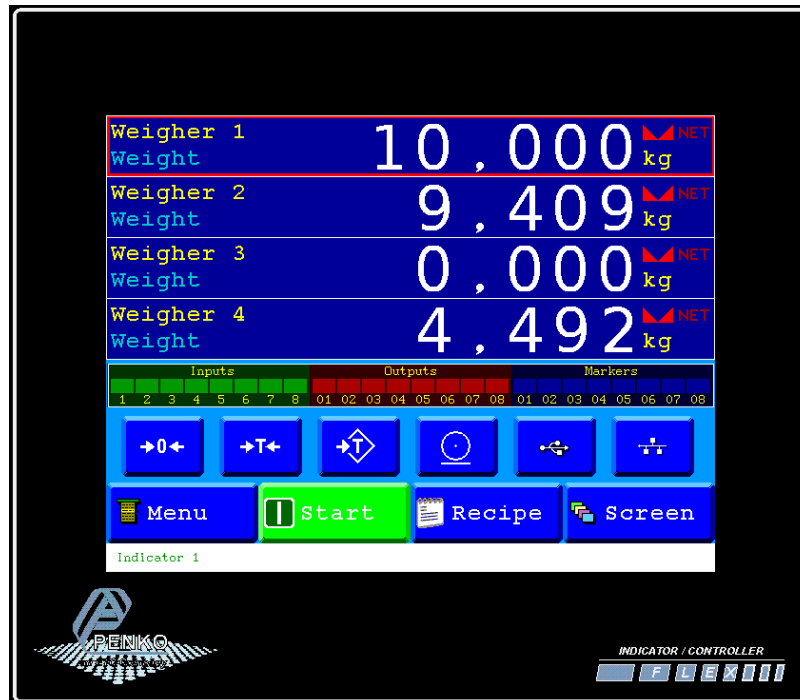


PENKO

FLEX™ 4 channel



4 channel FLEX

SPECIFICATIONS

Specification for each individual weighing channel (Channel 1-4):

Wiring	Full Wheatstone bridge with passive connections (6-wire system).
Sense system	Passive sense system
Minimum bridge resistance	87.5 Ohm @ 5V exc.
Number of load cells	1 channel 1 - 4 Load cells 350 Ohm @ 5V exc. 1 - 8 Load cells 1100 Ohm @ 5V exc.
Sensitivity	0.1 – 0.5 μ V minimum voltage for verification scale Certified with 0.4 μ V per part / 10000 parts
A/D Conversion Speed	1600 measurements per second
Internal Resolution	24 Bits (16,777,216 parts)
A/D Converter type	Sigma-Delta, ratio metric, isolated from digital
Display Resolution	100,000 divisions max.
Display Step	x1, x2, x5, x10,x 20 x50, x100, x200.
Decimal Comma	Selectable between any digits of the display value
Full Scale Range	-2.5 mV to +11.25 mV (-0.5mV/V to +2.25mV/V)
Excitation voltage	5 VDC
Non Linearity	< 0.005 % of reading
Offset Drift	< +/- 2 ppm/°C
Span Drift	< +/- 2 ppm/°C
Digital Filters	High performance digital filters 1-10 Hz
Overall Filter	0 to -50 dB
Calibration Methods	Dead load and Span with up to 8 point linearization, Millivolt calibration

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

Web ■www.penko.COM ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

PENKO

FLEX™ 4 channel

	G - CAL (Gravity correction) Calibration of 4 analog inputs and 4 analog outputs with individual coefficients.
Measurement Functions	Automatic zero tracking, motion detection, zero, tare, preset tare, net mode, peak hold, valley hold, bar graphs multi range, multi interval
Memory Allocation	Calibration data Flash, dynamic data in SRAM with battery backup.
Real-Time Clock	Standard with NiMh battery backup.
Display methods	Each channel separate Total weight of selected channels

ENVIRONMENTAL

Operating Temp	-10°C to +40°C [14°F to 104°F]
Storage Temp	-20°C to +70°C [-4°F to 158°F]
Relative Humidity	40 – 90% non-condensing.

APPROVALS (PENDING)

OIML R76 *10 000d single or multi interval at $\geq 0,4 \mu\text{V}$ scale interval.*

MID certified

OIML R51

OIML R61

OIML R106

OIML R107

EU-type approval no

Automatic catch weigher

Automatic gravimetric filling instrument

Automatic rail weigh bridge

Discontinuous totalizer

TOUCH SCREEN

Display type	High resolution TFT LCD 640 x 480 pixels, 256 colors, High brightness 500 cd/m ² . High Contrast 350:1
Display functions	Completely menu driven with graphical user interface
Display Rate	Selectable 1,2,3,5,10 or 25 updates/s
Display Filter	0, -6, -12, -18, -24, -30, -36, -42 and – 50 dB
Display Filter range	Selectable in any range of the weight display
Display suppression	Selectable in any range of the weight display
Status enunciators	Zero, No Motion.
Weight Digits	6 digits with leading zero suppression, selectable height = 18mm or 9 mm.
Display operation	Operate, configure and calibrate via four interfaces 1- Front panel, (Touch screen) 2- RS232 3- Ethernet 4- USB
Touch screen	Glass screen, 2 mm of resistive type
Display size	5,7 inch, (145 mm)
Display material	Front foil PET 175 u

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

Web ■www.penko.com ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

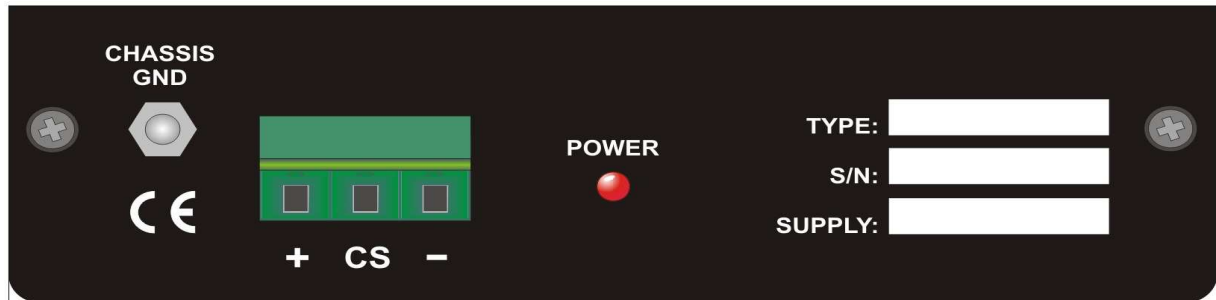
PENKO

FLEX™ 4 channel

ELECTRICAL



AC Power Supply 100 – 240 VAC 50/60 Hz, 20W max.



24 V DC Power Supply 10,8 – 31,2 V DC, 20W max

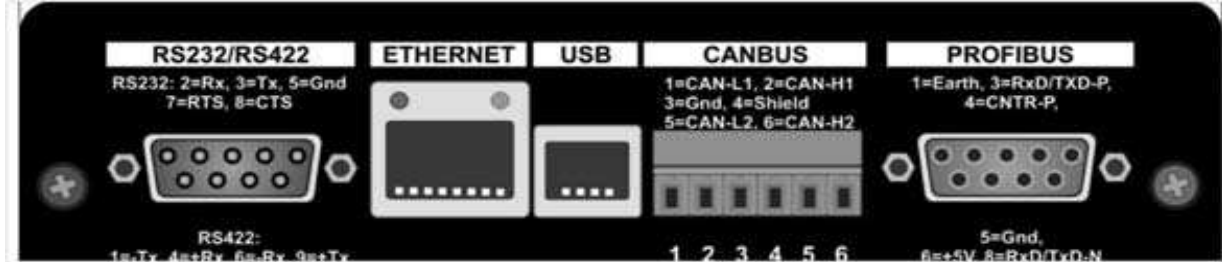
PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

Web ■www.penko.COM ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

PENKO

FLEX™ 4 channel

STANDARD COMMUNICATION PORTS

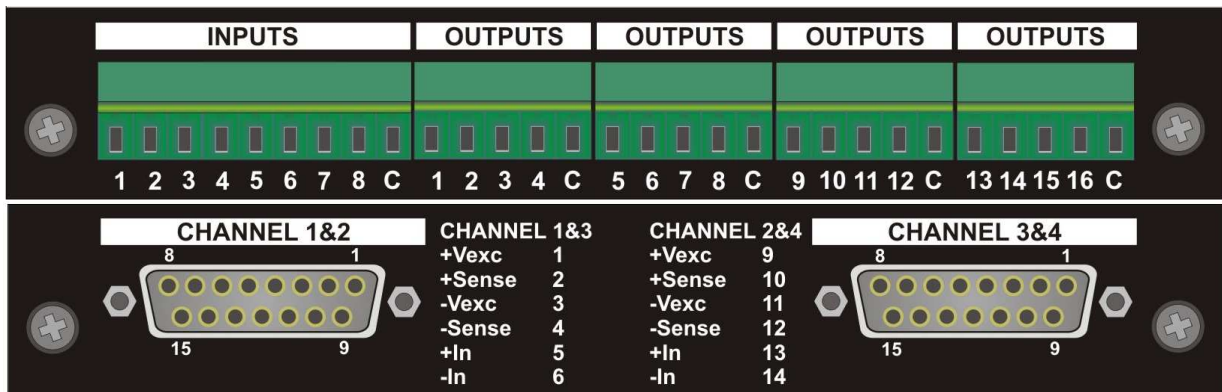


RS 232	Printer, ASCII, TP slave, TP Master, NPV Slave, NPV Master, AMI Master, Hostlink Viewteq, Hostlink PLC
RS 422/RS485	Printer, ASCII, TP slave, TP Master, NPV Slave, NPV Master, AMI Master, Hostlink Viewteq, Hostlink PLC
Ethernet	TCP/IP, UDP layer with PENKO TP protocol
USB	Reporter, ASCII and TP slave FLEX II has USB HOST or Device HOST = USB Stick (FAT 16) HID class keyboard or mouse
CANBUS	Buslink
-CAN1 port	
-CAN2 port	
OPTIONAL COMMUNICATION	PROFIBUS, DP-slave

COMMUNICATION SOFTWARE

Profibus GSD File
Penko Two Phase Protocol
Printer protocol

STANDARD Digital Inputs (DI) and Digital Outputs (DO) and load cell strain gauge amplifier PCB



8 Digital Inputs	8 DI, optical isolated, 1 common, 18-36 VDC, PNP or NPN. Input 1 normal or counter input max. 8kHz.
16 Digital Outputs (level cont.)	4 x 4 DO isolated PhotoMOS outputs, 1 common max. 36 VDC or AC, max 0.5A. Nominal, 1 A Surge (thermal fuse 0.5A), PNP or NPN.

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

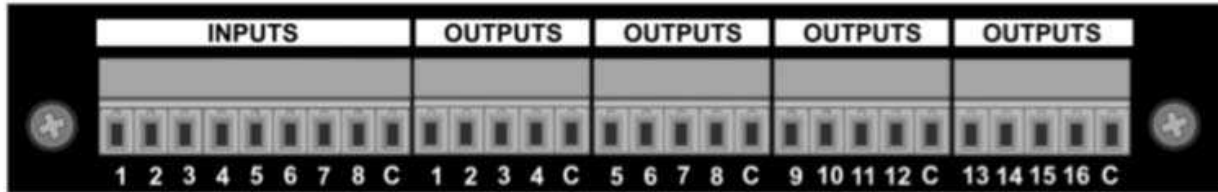
Web ■www.penko.COM ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

PENKO

FLEX™ 4 channel

OPTION BOARDS (for one available slot)

Option 1: FLEX 8I16O



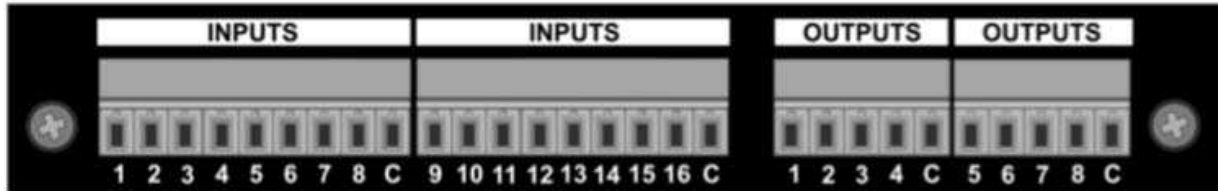
8 Digital Inputs

8 DI optical isolated, 1 common, 18-36 VDC, PNP or NPN.
Input 1 to 4 normal or counter inputs.

16 Digital Outputs

16 DO isolated PhotoMOS outputs, 4 commons max. 36 VDC or AC, max 0.5A. Nominal, 1 A Surge. (thermal fuse 0.5A), PNP or NPN.

Option 2: FLEX 16I8O



16 Digital Inputs

16 DI optical isolated, 2 commons, 18-36 V
Input 1 to 4 normal or counter inputs.

8 Digital Outputs

8 DO isolated PhotoMOS outputs, 2 commons max. 36 VDC or AC, max 0.5A. Nominal, 1 A Surge (thermal fuse 0.5A), PNP or NPN.

Option 3 ANALOG INPUTS / OUTPUTS



4 Analog In

2 AI isolated voltage inputs, 16 Bits, 0 – 10VDC

4 Analog Out

2 AI isolated current inputs, 16 Bits, 0/4 - 20/24mA

4 AO isolated current outputs, 16 Bits, 0/4 - 20/24mA.

Option 4 PT100/DI/DO/USB

2 PT100 input

2 x PT100 inputs

8 Digital Inputs

8 DI optical isolated, 1common, 18-36 VDC, PNP or NPN.

8 Digital Outputs

8 DO isolated PhotoMOS outputs, 2 commons max. 36 VDC or AC, max 0.5A. Nominal, 1 A Surge (thermal fuse 0.5A), PNP or NPN.

1 x USB port

Printer, ASCII and host functions

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

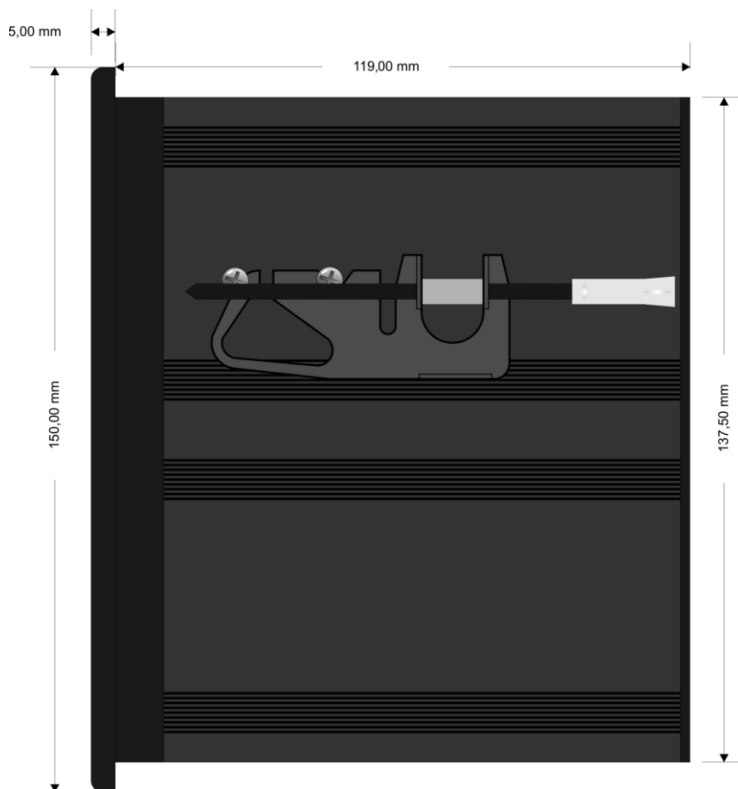
Web ■www.penko.COM ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

PENKO

FLEX™ 4 channel

HOUSING

Material	Housing extruded aluminum, black powder coating Front machined aluminum, black anodized.
Dimensions Front: W x H x D	170 x 150 x 5 mm. depth
Dimensions Housing: W x H x D	137,5 x 137,5 x 119 mm. (depth without connectors).
Dimensions Panel cut out	138,5 x 138,5
Weight without options	appr. 1700 g.
Option board weight	appr. 120 g. (4 AI, 4 AO I/O board)
Option board weight	appr. 75 g. (8 DI, 16 DO)
Option board weight	appr. 75 g. (16 DI, 8 DO)
Mounting clips	2 mounting clips
Rubber seal	O-ring of mosrubber
Built in cabinet	IP 45
If build in a cabinet (Front)	IP 65



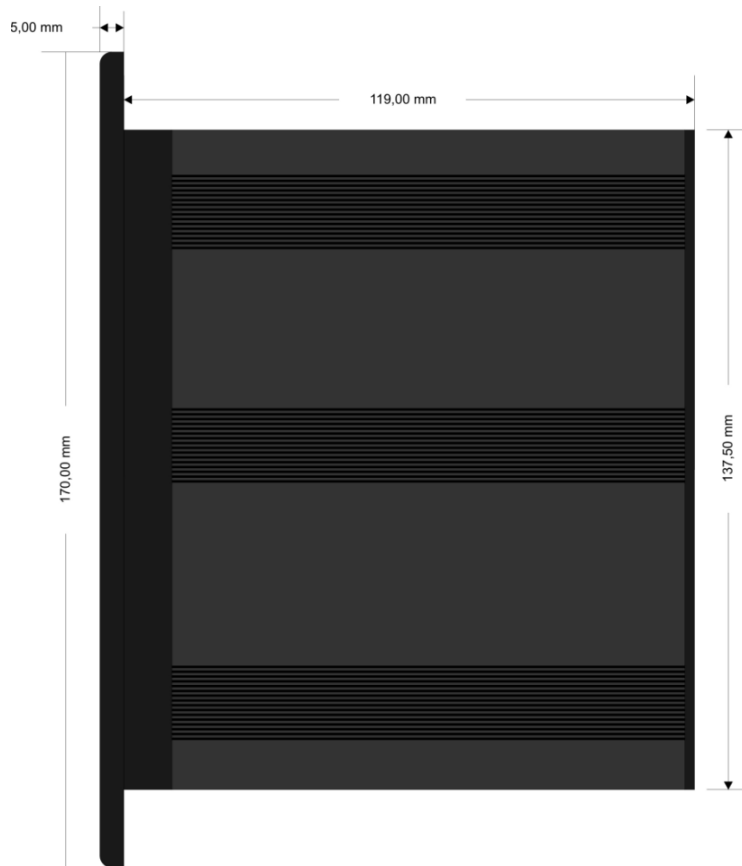
Side view

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

Web ■www.penko.com ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11

PENKO

FLEX™ 4 channel



Bottom /top View

PENKO Engineering B.V. ■Tel +31 (0)318 525630 ■Fax +031 (0)318 529715 ■info@penko.com

Web ■www.penko.com ■Copyright © 2011 ETC. All Rights Reserved. All product information and specifications subject to change. Rev. A Printed 06/11