PENKO FLEX™ Controller and Indicator

SPECIFICATIONS

Wiring	Full Wheatstone bridge with sense connections (6 wire system).
Sense system	Active sense system, suitable for safety barriers.
Minimum bridge resistance	87.5 Ohm @ 10V exc.
Number of load cells	1 - 4 Load cells 350 Ohm @ 10V exc. (approved scales) 1 - 12 Load cells 1100 Ohm @10V exc. (approved scales)
Sensitivity	0.8 µV minimum voltage for verification scale @ 10Vexc. for approved scales.(= similar to 0.4µV @ 5V exc). 0.08 µV @ 10V exc. for non-approved scales.
A/D Conversion Speed	50 - **1600** samples per second. (selectable)
Internal Resolution	24 Bits (16.777.216 parts).
A/D Converter type	Sigma-Delta, ratio metric, isolated from digital.
Display Resolution	10 000 (approved scales) 100 000 divisions max. (non-approved scales)
Display Step	x1, x2, x5, x10, x50.
Decimal Comma	Selectable between any digits of the weight display.
Full Scale Range	-0.25 to +2.5mV/V (-2.5mV to +25mV).
Excitation voltage	10 VDC. (+5V and – 5V with respect to the internal ground).
Linearity	< 0,001 % of full scale.
Offset Drift	< +/- 2 ppm/℃.
Span Drift	< +/- 2 ppm/℃.
Digital Filter	Static filter 1-10 Hz Dynamic filter 1-10 Hz Overall filter 0 to -50 dB.
Calibration Methods	Dead load and Span with up to 8 point linearization, millivolt calibration G- Cal calibration (Geographical calibration) Calibration of 4 analog inputs and 4 analog outputs with individual coefficients.
Weighing Functions	Automatic zero tracking, motion detection, zero, tare, preset tare, net mode. Peak hold, Valley hold, Bar graphs Multi range, Multi interval

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

Memory Allocation	Calibration data Flash, Dynamic data in SRAM with battery backup.
Piece Counting Mode	Yes. (pending)
Real-Time Clock	Standard with NiMh battery backup.

ENVIRONMENTAL

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

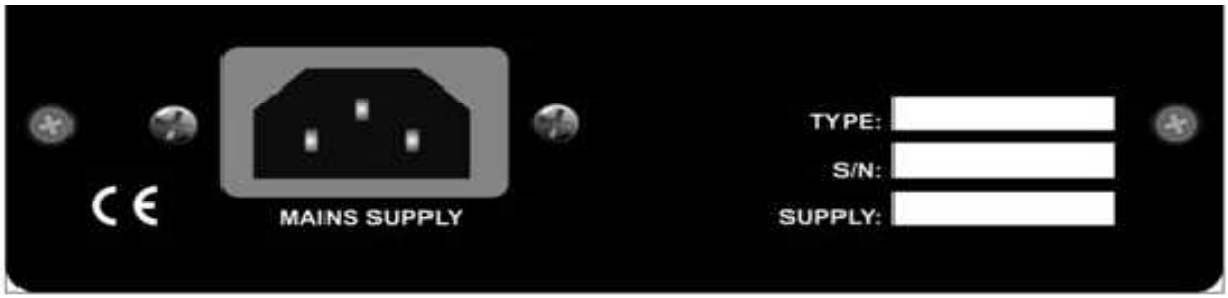
APPROVALS

OIML R76	10 000d single or multi interval at ≥0,8 µV scale interval.
MID certified	
OIML R51	Automatic catch weigher
OIML R61	Automatic gravimetric filling instrument
OIML R106	Automatic rail weigh bridge
OIML R107	Discontinuous totalizer
EU-type approval no	TC7753 on 9200714

TOUCH SCREEN

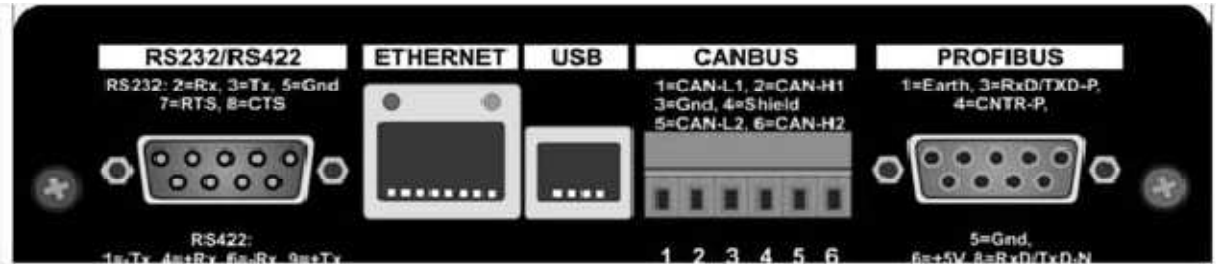
Display type	High resolution TFT LCD 640 x 480 pixels, 256 colors, High brightness 500 cd/m2. High Contrast 350:1
Display functions	Completely menu driven with graphical user interface
Display Rate	Selectable 1,2,3,5,10 or 25 updates/s
Display Filter	0, -6, -12, -18, -24, -30, -36, -42 and – 50 dB
Display 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 three interfaces 1- Front panel, (Touch screen) 2- RS232 3- Ethernet
Touch screen	Glass screen, 2 mm of resistive type
Display size	5,7 inch, (145 mm)
Display material	Front foil PET 175 u

ELECTRICAL



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

STANDARD COMMUNICATION PORTS

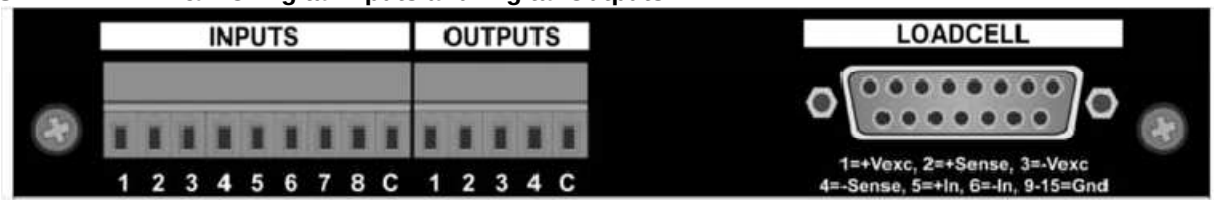


RS 232	Printer, ASCII, TP slave, TP Master, NPV Slave, NPV Master, AMI Master, Hostlink Viewteq, Hostlink PLC
RS 422/RS485	Printer, ASCII,TP slave, TP Master, NPV Slave, NPV Master, AMI Master, Hostlink Viewteq, Hostlink PLC
Ethernet	TCP/IP, UDP layer with PENKO TP protocol
USB	Printer, ASCII and TP slave
CANBUS	Buslink
-CAN1 port	
-CAN2 port	

OPTIONAL COMMUNICATION PROFIBUS, DP-slave

COMMUNICATION SOFTWARE
Profibus GSD File
Penko Two Phase Protocol
Printer protocol

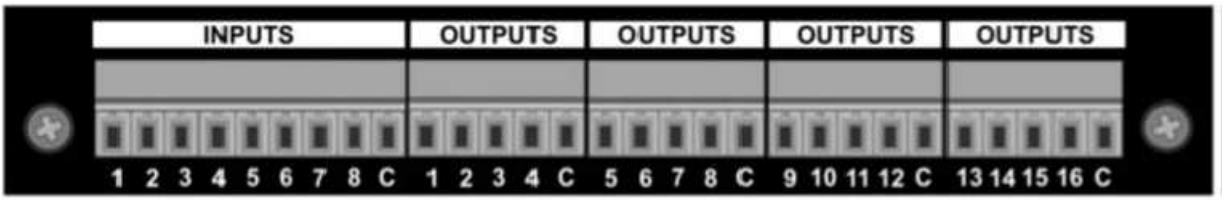
STANDARD DI & DO Digital Inputs and Digital Outputs



8 Digital Inputs	8 DI, optical isolated, 1common, 18-36 VDC, PNP or NPN. Input 1 normal or counter input max. 8kHz.
4 Digital Outputs (level cont.)	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.

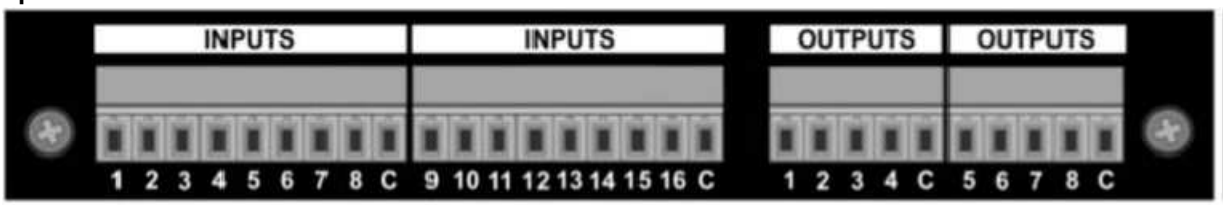
OPTION BOARDS for 2 available slots

Option 1: FLEX 8I16O



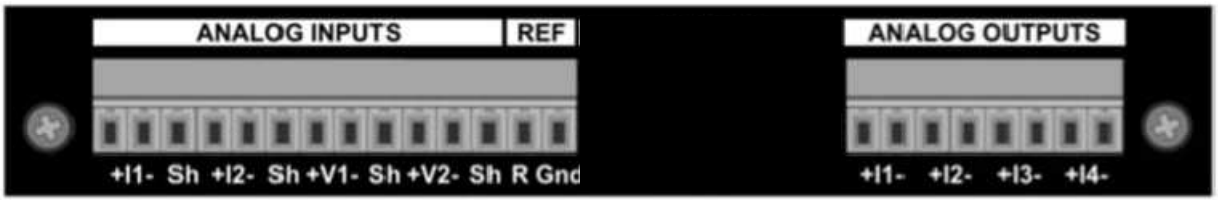
8 Digital Inputs	8 DI optical isolated, 1common, 18-36 VDC, PNP or NPN. Input 1 to 4 normal or counter inputs.
16 Digital Outputs	16 DO isolated PhotoMOS outputs, 4 commons max. 36 VDC or AC, max 0.5A. Nominal, 1 A Surge. (thermal fuse 0.5A), PNP or NPN.

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



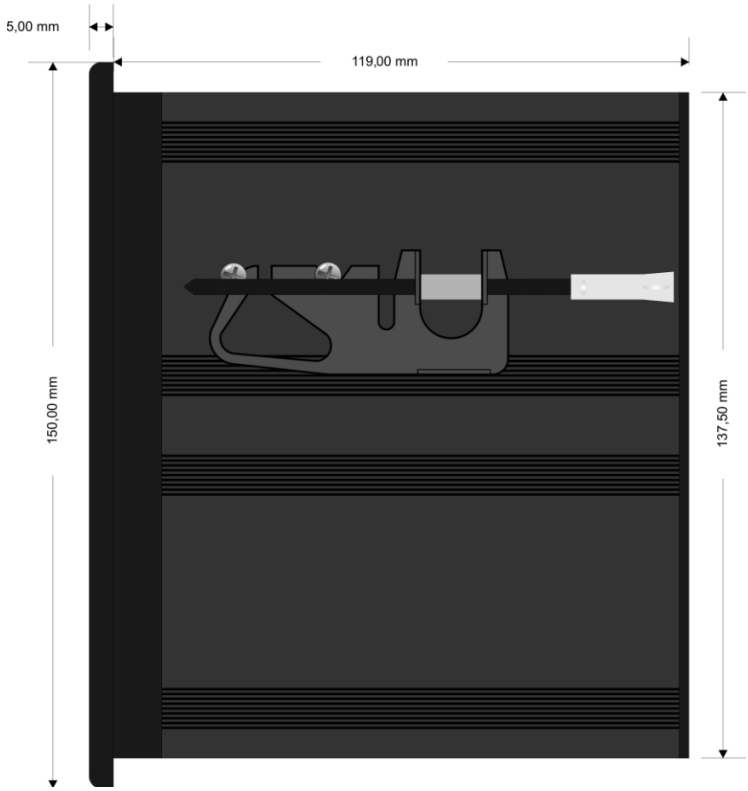
4 Analog In	2 AI isolated voltage inputs, 16 Bits, 0 – 10VDC 2 AI isolated current inputs, 16 Bits, 0/4 - 20/24mA
4 Analog Out	4 AO isolated current outputs, 16 Bits, 0/4 - 20/24mA.

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

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

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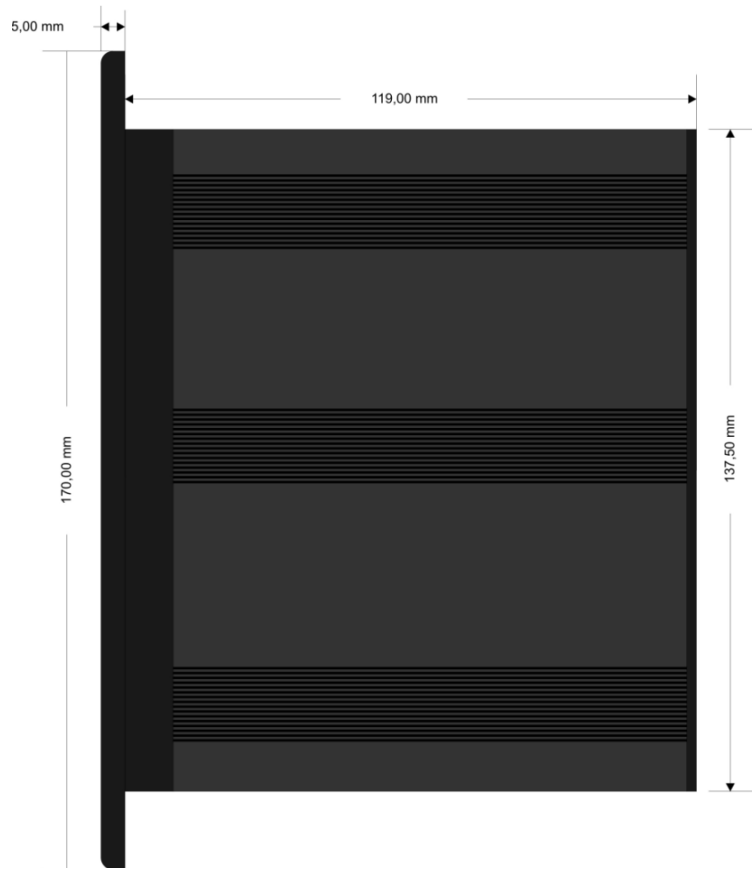

Bottom /Top view