# PENKO Engineering B.V.

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## How to... 1020 Parameters explanation



PENKO How to... 1020 Parameters explanation

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#### What are the parameters and what do they do?

To set the parameters, connect the Indicator to the PC via a USB-cable. Open Pi Mach II and go to Environment. Click on Communication and set it to USB. Click Ok and it should load the device.

🕂 Indicator 1020, Device Version: 01.03, Build: 03, Serial: 13100008, Module Version: 00.00, Build: 00, Project: C:\Pi test					
File Project Environment View Tools Help					
📔 💕 On-Line 🛛 🛞 Eirmware Update Manager 🗜 Program Builder 🧠 Flex Builder 💷 💆	atches 🚽 Exit				
💷 Display 🕨 Control 🍏 Tasks 🤚 1/0 🚎 Indicator & Registers 📼 Labels 🧮 Results 🔛 Printer Layout 🛲 Printer Ticket 🛛 O Clock 🗠 Scope					
□ Penko 1020 - 1.1 Name = - 1.2 Start Quick setup	Class: Penko 1020 Path: 1				
- 1.3 Enable Full setup : Live : Indicator	Name				
⊕- Digital outputs ⊕- Analog output	Start Quick setup				
B- Counters ⊡- Totals	Enable Full setup				
⊖ System B Info					
⊡- Control ⊡- Indicator					
	Discover Import Properties (CSV)				
ACTIVE Ethernet Address: 192.168.151.62 UDP open	Alive: Min: 3 - Time-up: Min: 3 - Resets: 0				

Click in the right window on the button **Enable Full setup**.

Double click on **Indicator** and double click on **Parameters**. Fill in the TAC code. The TAC (Traceable Access Code) code is the number of times the parameters has been accessed. Click on **Apply**.

💕 On-Line 🛛 🛞 Eirmware Update Manager 🚡 Program Builder 🥞 Flex Builder 🗐 Watches 🛛 🧕 Exit					
🛛 Display 📔 🕨 Control 🌰 Tasks 🛛 🏪 1/0 📪 Indicator & Registe	rs 🗩 Labels 🔡 R <u>e</u> sults	👬 Pri <u>n</u> ter Layout	inter Ticket 🛛 🕒 🖸	ck 🗠 <u>S</u> cope 🏾 🐉 Manage	
Penko 1020 1.1 Name =	^ Cl	ass: Penko 1020.Syst ath: 1.3.2.1	em Setup.Indica	tor.Parameters	
- 1.2 Start Quick setup		1011 1151211			
1.3 Enable Full setup					
	TAC		[0045] 🚄		
E Digital niputs	Ente	TAC		0	
Counters     Counters	E				
⊡. Info					
🖻 System Setup					
⊕. Service					
⊡ Indicator					
□ Parameters					
-1.3.2.1.1 TAC = [0045]					
- 1.3.2.1.2 Enter TAC					
Digital inputs					
Digital outputs		1			
	- 0	iscover Import	Properties (CSV)		Apply
CTIVE Ethernet Address: 192 168 151 62		Alive: Min: 5 - Tim	e-up: Min: 5 - Reset	s: 0	



When the correct TAC code is entered all Parameters are visible. The Parameters are categorized in: Weigher, Format, Stable ,Zero Tracking, Range/Interval, Filter and Display.

W	eigher			
	E Counters	*	Class: Penko 1020.System S	etup.Indicator.Parameters.Weigher
_	i⊡- Totals		Path: 1.3.2.1.1	
	r System ⊨⊡nfo			
Ē	System Setup		Name	
	🕮 Service		nume	
			Maxload	1100,00 kg
			Operation mode	Technologi
	- 1.3.2.1.2 Enter TAC		operation mode	
	🕒 Weigher		Sample rate	1600/s
	- 1.3.2.1.1.1 Name =	Ξ		
	-1.3.2.1.1.4 Sample rate = 1600/s			
	🗄 - Format			
	E Stable			
	Zero tracking     Range/Interval			
	H-Filter			
	⊡ Display			
	. Calibration			

Name: give the Indicator a name.

Maxload: fill in the weight the Indicator shows as the maximum load.

For example: if you are weighing 1000kg and the maximum amount you want to be show is 1005. Fill in 1005, above this amount the Indicator will show ======.

Operation mode: choose between Certified of Industrial.

Certified : sets parameters shuts as Zero tracking to certified settings.

Industrial: sets parameters shuts as Zero tracking to industrial settings.

**Sample rate:** the amount of samples the Indicator takes per second. The minimal setting is 20 samples per second, the maximum is 1600 samples per second.



Format			
Counters     E- Totals     System	*	Class: Penko 1020.System Se Path: 1.3.2.1.1.1	etup.Indicator.Parameters.Weigher.Format
⊕ Info			
⊡ System Setup ⊞- Service		Step	STEP 100 💌
- Indicator		Decimal point	0000.00
		Unit	kg
Weigher	Ξ		

Step: select the step size the Indicator makes while weighing.

For example: if you set step size to 1 the weigher weighs 10.1 - 10.2 - 10.3 etcetera. If you set the step size to 5 the weigher weighs 10.0 - 10.5 - 11.0 etcetera.

**Decimal point:** select the place for the decimal point.

**Unit:** fill in the weighing unit, for example: g, kg, ton, lbs. or liter.

Sta	able		
	Counters	*	Class: Penko 1020.System Setup.Indicator.Parameters.Stable
			Path: 1.3.2.1.2
-	System		
P	System Setup		Stable range 0,05 kg
			Stable time 0,70 s
	1.3.2.1.1 TAC = [0045]		
	1.3.2.1.2 Enter TAC		
	1.3.2.1.2.1 Stable range = 0,05 kg	Ξ	
	Tare tracking		
	E Dance (Tetacial		
	E Communication		
	E Digital inputs		
	🖽 Digital outputs		

**Stable range / Stable time:** in this case the Stable range is set to 0,2 kg. This means that if the actual weight is within 0,2 kg of the targeted amount for more than 1 second (Stable time), the indicator will readout stable.



#### **Zero tracking** ⊕ Counters ⊕ Totals Class: Penko 1020.System Setup.Indicator.Parameters.Zero tracking Path: 1.3.2.1.3 System i Info System Setup 0,00 kg Tracking range . Service - Indicator Tracking step 0,00 kg - Parameters - 1.3.2.1.1 TAC = [0045] 0.00 s Tracking time 1.3.2.1.2 Enter TAC 🕀 Weigher Stable Ė. 1.3.2.1.3.1 Tracking range = 0,00 kg 1.3.2.1.3.2 Tracking step = 0,00 kg 1.3.2.1.3.3 Tracking time = 0,00 s E Range/Interval ⊕ Filter 🗄 Display Calibration + Communication Digital inputs

**Tracking range / Tracking step / Tracking time:** these 3 parameters work together and are best explained via an example. The settings above means that if the actual weight is between 0 and 5 kg, every second 0,5 kg is deducted from the weight until the weight reaches zero.

For example you can use these parameters for a manual weighing platform to rule out small bits of dirt.

Range/Interval					
⊕-Counters ▲ ⊕-Totals ⊖-System	Class: Penko 1020.System Path: 1.3.2.1.4	Setup.Indicator.Parameters.Range/Interval			
⊕-Info ⊖-System Setup ⊕-Service	Range	0 parts			
⊡- Indicator ⊡- Parameters	MaxStep	STEP 1			
- 1.3.2.1.1 TAC = [0045] - 1.3.2.1.2 Enter TAC	Mode	MULTI-RANGE 💌			
B Stable B Zero tracking =					
Range/Interval					
- 1.3.2.1.4.2 MaxStep = STEP 1 - 1.3.2.1.4.3 Mode = MULTI-RANGE B- Filter					
⊕ Display     ⊕ Calibration     ⊕ Communication					
Digital inputs					

**Range:** If the Decimal point is set to 0000.0 and the Range is 500 parts. The step size will increase as can be seen in the table below (Range \* Step size).



Weighing range	Step size	Weighing step
0,0 – 50,0	1	0,1-0,2
50,0 - 100,0	2	50,2 - 50,4
100,0 – 250,0	5	100,5 - 101,0
250,0 – 500,0	10	251,0 - 252,0
500,0 - 1000,0	20	502,0 - 504,0
1000,0 - 2500,0	50	1005,0 - 1010,0

**Max Step:** set the maximum step size the indicator can increase, if the maximum step size you want is 1 kg. Set Max Step to Step 10 and the indicator weight will increase as can be seen in the table below.

Weighing range	Step size	Weighing step
0,0 – 50,0	1	0,1-0,2
50,0 - 100,0	2	50,2 - 50,4
100,0 – 250,0	5	100,5 - 101,0
250,0 – above	10	251,0 - 252,0

Mode: there are two settings, you can choose between Multi-Range and Multi-Interval.

Multi-Range: the Indicator will decrease in weight using the last used step size.

For example, If the Indicator is filling up to 250kg and the weight is increasing with 0,5kg (seen in the table below), the Indicator will use this step size (5) to decrease back to zero.

Weighing range	Step size	Weighing step
0,0 – 50,0	1	0,1-0,2
50,0 - 100,0	2	50,2 - 50,4
100,0 – 250,0	5	100,5 - 101,0
250 ,0- 0,0	5	250,0 - 249,5

Multi-Interval: the Indicator will decrease weight using the same step sizes as it used increasing weight.

For example, If the Indicator is filling up to 250kg and the weight is increasing with 0,5kg (seen in the table below), the Indicator will use the same steps to decrease to zero.

Weighing range	Step size	Weighing step
0,0, - 50,0	1	0,1-0,2
50,0 - 100,0	2	50,2 - 50,4
100,0 – 250,0	5	100,5 - 101,0
250,0 – 100,0	5	250,0 - 249,5
100,0 - 50,0	2	99,8 – 99,6
50,0 - 0,0	1	49,9 – 49,8



#### PENKO How to... 1020 Parameters explanation

Filter		
⊕- Counters ⊕- Totals ⊖- System	Class: Penko 1020.5 Path: 1.3.2.1.5	ystem Setup.Indicator.Parameters.Filter
i Info ⊖-System Setup ⊕-Service	Overall filter	0 dB
ia- Indicator ia- Parameters	Filter type	Dynamic
- 1.3.2.1.1 TAC = [0045] - 1.3.2.1.2 Enter TAC	Cut Off	2,5 Hz
e⊢ Weigher e⊢ Stable	Moving Average	1 Hz
Zero tracking     Range/Interval     Filter     I.3.2.1.5.1 Overall filter = 0 dB     I.3.2.1.5.2 Filter type = Dynamic     I.3.2.1.5.3 Cut Off = 2,5 Hz     I.3.2.1.5.4 Moving Average = 1 Hz     Display     Calibration     Communication		

**Overall filter:** set the overall filter to effect all indicator signals used in the device. 0dB means no effect and –42dB is the strongest damping.

Filter type: choose between None, Dynamic filter or Static filter.

None: choose None if you don't want a filter

Dynamic filter: choose Dynamic filter when the weighing signal is changing fast.

Static filter: choose Static filter when the weighing signal is slowly changing.

**Cut Off:** any frequency (that can interfere with the weighing signal) above the selected value will be filtered out.

**Moving Average:** if you have frequencies from outside the weighing unit that interfere with the weighing signal, you can filter these frequencies out by using the Moving Average filter. You can see these frequencies by using the scope function in Pi.

*For example, if there are three frequencies that need to be filtered out, and those frequencies are 70Hz, 35Hz and 10Hz. Select the highest frequency that can be divided 70Hz, 35Hz and 10Hz, which is 5Hz.* 

5Hz is 200msec, if the Sample rate is selected to 1600 sample per sec. It means that during the 200msec it will measure 320 samples. From these 320 samples the Indicator will calculate the average and this will be the average weighing signal.

The higher the Moving Average is, the faster the Indicator is weighing.



Display			
⊕ Counters ⊕ Totals ⊖- System	*	Class: Penko 1020.System S Path: 1.3.2.1.6	etup.Indicator.Parameters.Display
⊕-Info ⊖-System Setup ⊕-Service		Rate	25/s 💌
- Indicator  - Parameters  - Control The Football	Ш	Display Net/Gross:Filter range	0,00 kg
- 1.3.2.1.1 FAC = [0045] - 1.3.2.1.2 Enter TAC		Display Net/Gross:Filter damping	
E Stable		Display Net/Gross:Zero suppress	U,UU, Kg
<ul> <li>1.3.2.1.6.2 Display Net/Gross:Filter range = 0,00 kg</li> <li>1.3.2.1.6.3 Display Net/Gross:Filter damping = 0 dB</li> <li>1.3.2.1.6.4 Display Net/Gross:Zero suppress = 0,00 kg</li> </ul>			
B- Calibration B- Communication			

Rate: the refresh rate of the display in times per second.

**Display Net/Gross: Filter range:** this filter works together with the Filter damping. If the entered value is 10kg, and the actual value is between +10 or -10 kg of the total Net or gross. The Display Net/Gross: Filter damping will be active.

**Display Net/Gross: Filter damping:** this filter works together with the Filter range. If the entered value is 10kg, and the actual value is between +10 or -10 kg of the total Net or gross. The Display Net/Gross: Filter damping will be active. 0dB is no damping and -42dB is the strongest damping.

**Display Net/Gross: Zero suppress:** zero suppress means that any weight below the filled in value will be forced to zero.

For example, if the filled in weight is 5kg and the actual weight is 3kg, the Indicator will set itself to zero.

Indicator: select which value you want the Indicator to show on the display.





#### About PENKO

Our design expertise include systems for manufacturing plants, bulk weighing, check weighing, force measuring and process control. For over 35 years, PENKO Engineering B.V. has been at the forefront of development and production of high-accuracy, high-speed weighing systems and our solutions continue to help cut costs, increase ROI and drive profits for some of the largest global brands, such as Cargill, Sara Lee, Heinz, Kraft Foods and Unilever to name but a few.

Whether you are looking for a simple stand-alone weighing system or a high-speed weighing and dosing controller for a complex automated production line, PENKO has a comprehensive range of standard solutions you can rely on.

#### Certifications

PENKO sets high standards for its products and product performance which are tested, certified and approved by independent expert and government organizations to ensure they meet – and even – exceed metrology industry guidelines. A library of testing certificates is available for reference on:

http://penko.com/nl/publications\_certificates.html

#### **PENKO Professional Services**

PENKO is committed to ensuring every system is installed, tested, programmed, commissioned and operational to client specifications. Our engineers, at our weighing center in Ede, Netherlands, as well as our distributors around the world, strive to solve most weighing-system issues within the same day. On a monthly basis PENKO offers free training classes to anyone interested in exploring modern, high-speed weighing instruments and solutions. A schedule of training sessions is found on: www.penko.com/training

#### **PENKO Alliances**

PENKO's worldwide network: Australia, Belgium, Brazil, China, Denmark, Germany, Egypt, Finland, France, India, Italy, Netherlands, Norway, Poland, Portugal, Slovakia, Spain, Syria, Turkey, United Kingdom, South Africa, Slovakia Sweden, Switzerland and Singapore. A complete overview you will find on: www.penko.com/dealers

