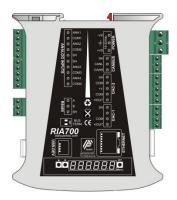
PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions



How to... Connect and setup the RIA700 and FLEX 2100



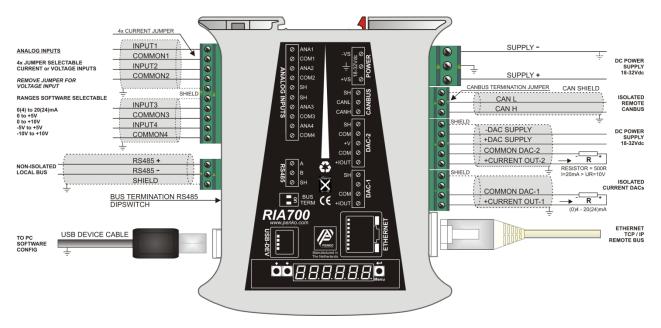
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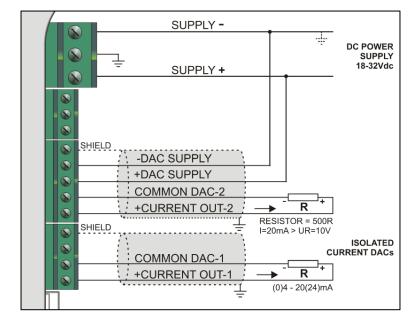


General information

If you only connect the USB-Cable to power the RIA700, the communication ports and analog in- and outputs will not work. The power supply via the USB-Cable is for changing parameter only.



Note: make sure that you connect the DAC power supply otherwise the DAC outputs will not work.



Using the device power supply:

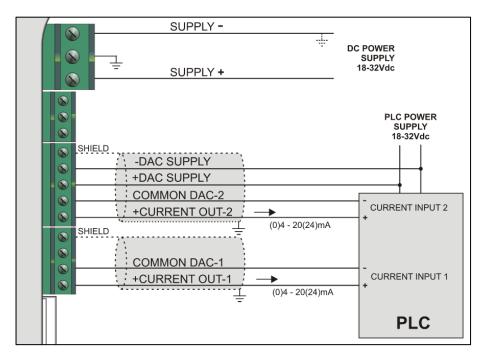




COMMON DAC-1 and COMMON DAC-2 are internally connected to the -DAC SUPPLY. When using the device power supply for the DAC, the current loop will include the SUPPLY- of the device power supply.

	SHELD -DAC SUPPLY +DAC SUPPLY COMMON DAC-2 +CURRENT OUT-2
	SHIELD COMMON DAC-1 +CURRENT OUT-1

Using an external power supply:



In this example the current loop is isolated from the device power supply.



Connecting the RIA700 to a FLEX 2100 with CAN bus

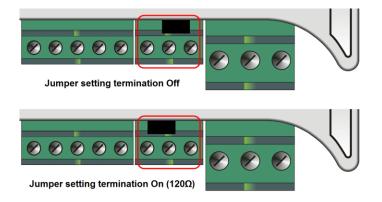
First of all you will need to connect the RIA700 to the FLEX, this can be done by connecting a cable with two wires and a shield parallel (**CanH** goes to **CanH**, **CanL** goes to **CanL** and **Shield** goes to **Shield**). Place a resistor of 120 Ω between **CanH** and **CanL** on the connector side of the FLEX.

Connect the RIA700 to a FLEX 2100

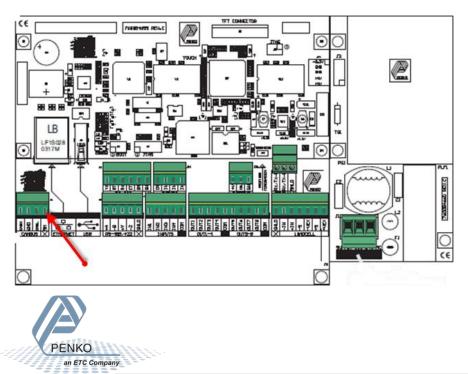
FLEX 2100		RIA700
CanH	Connect to	CanH
CanL	Connect to	CanL
Shield	Connect to	Shield

Set the jumper on the RIA700 in the termination "ON" position. This will terminate the bus. The jumper is located above the CAN bus connector.

The CAN bus termination is done with a jumper:



FLEX 2100 CAN bus connector



Setup the FLEX

Go to System setting \rightarrow System Setup \rightarrow Port Setup \rightarrow CAN1 Port. Set Protocol on "Buslink", Baudrate on "250 kbs", Buslink Address on "1" and Buslink Subaddr on "1". Press OK to save settings. Press Home to return to the main screen.



Setup the RIA700

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Open Pi Mach II and double click on **RIA700**, then double click on **System Setup**, then double click on **Communication**, then double click on **CAN Buslink**. Set **Protocol** on **"Buslink"**, **Buslink Address** on **"1"**, **Buslink Sub address** on **"2"** and the **Baudrate** on **"250K"**. Click on **Apply** to save settings.

🕂 IdCode: 0628, Device Version: 01.02, Build: 05, Serial: 14070006, 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 💷 🕁a	tches 🧔 E <u>x</u> it				
📙 🖳 Display 🛛 🕨 Control 🌰 Tasks 🛛 🌯 1/0 🗰 Indigator & Registers 📼 Labels 🚆 F	Results 🛛 🌐 Printer Layout 🕭 Printer Ticket 🛛 🜑 Clock 🗠 Scope 🛛 🎦 Manage				
⊡- Penko ⊟- Device root ⊟- RIA700 Analog	Class: Penko.Device root.RIA700 Analog.System Setup.Communication.CAN Buslink Path: 1.1.1.3.2.5				
- 1.1.1.1 Name = RIA700 4 inputs, 2 outputs ⊕ Live ⊕ System	Protocol Busink				
⊡- System Setup ⊡- Service	Buslink Address 1				
E- Communication	Buslink Subaddress 2				
 ⊕ Ethernet ⊕ Ethernet BusLink ⊕ CAN BusInk ↓ 1.1.1.3.2.5.1 Protocol = Buslink ↓ 1.1.1.3.2.5.2 Buslink Address = 1 ↓ 1.1.1.3.2.5.3 Buslink Subaddress = 2 ↓ 1.1.3.2.5.4 Baudrate = 250k ⊕ Output Control ⊕ Analog input ⊕ Analog output ⊕ Factory recall 	Baudrate 250k				
	Discover Import Properties (CSV)				
ACTIVE USB USB open					

Double click on **Output Control** and set **Address** to "**1**", **Sub address** to "**1**" and set **Enable On**. Click on **Apply** to save settings.

n ² IdCode: 0628, Device Version: 01.02, Build: 05, Serial: 14070006, 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 🗔 过 atches 🛛 🖏 Egit					
📃 🖳 Display 🕨 Control 🌒 Tasks 🛛 💾 1/0 📪 Indigator & Registers 🖚 Labels 📰 Results 🛛 🏭 Prigter Layout 🅭 Printer Ticket 🖉 Olock 🗠 Scope 👔 Manage					
⊡-Penko ⊟-Device root ⊡ RIA700 Analog	Class: Penko.Device Path: 1.1.1.3.2.6	root.RIA700 Analog.System Setup.Communication.Ou	itput Control		
- 1.1.1.1 Name = RIA700 4 inputs, 2 outputs ⊕- Live ⊕- System	Address	1			
i⊟- System Setup ⊞- Service	Sub address	1			
Communication RS485 Ethernet	Enable	On 💌			
Analog output Factory recall					
	Discover Imp	ort Properties (CSV)	Apply		
ACTIVE USB USB open					

Analog inputs

Double click on **Analog input**, then double click on **Input 1** and double click on **Configuration**. Here you can set the **Range**. The **Range** must be set to **4 – 20mA**. Click on **Apply** to save the changes.

n ² IdCode: 0628, Device Version: 01.02, Build: 05, Serial: 14070006, 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 💿 Watches 🛛 🥥 Egit						
📃 🛄 Display 🗼 Control 🌒 Tasks 🛛 🏪 1/0 🚎 Indigator & Registers 🖚 Labels 🚆 Results 🛛 🎬 Printer Layout 🅭 Printer Ticket 🛛 🌑 Glock 🖂 Scope 🛛 🍞 Manage						
Penko	Class: Penko.Device root.RIA700 Analog.System Setup.Analog input.Input 1.Configuration	on				
습· Device root 는· RIA700 Analog	Path: 1.1.1.3.3.1.1					
- 1.1.1.1 Name = RIA700 4 inputs, 2 outputs						
e Live B System	Range 4-20mA jumper					
⊡ System Setup						
⊞- Service ⊟- Communication						
E RS485						
Ethernet Therest Destine						
⊕- Ethernet BusLink ⊕- CAN Buslink						
Output Control						
⊟- Analog input ⊟- Input 1						
- Configuration						
⊡ Input 3						
⊕- Input 4 ⊕- Analog output						
E - Factory recall	Discuss I Francisco (CDA)					
	Discover Import Properties (CSV)	μγ.				
ACTIVE USB USB open						



Analog outputs

Double click on **Analog output**, then double click on **Output 1** and double click on **Configuration**. Here you can set the **Parameters**.

🕂 IdCode: 0628, Device Version: 01.02, Build: 05, Serial: 14070006, 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 💿 Watches 🛛 🥥 Egit						
🔲 🖳 Display 🕨 Control 🌰 Tasks 💾 1/0 🚎 Indicator & Registers 🐡 Labels 🧱 Results 🛛 🏭 Printer Layout 🛎 Printer Ticket 🛛 🌑 Clock 🗠 Scope 🛛 👔 Manage						
Class: Penko.Device root.RIA700 Analog.System Setup.Analog output.Output 1.Configuration						
i⊟- Device root i⊟- RIA700 Analog	Path: 1.1.1.3.4.1.2					
- 1.1.1.1 Name = RIA700 4 inputs, 2 outputs						
⊕- Live	Indicator 6					
⊟- System Setup	Minimum Level 0					
□- Communication	Maximum Level 10000					
⊡ RS485						
Ethernet	Range 4-20mA 💌					
⊕ CAN Buslink						
Output Control						
⊕-Analog input ⊟-Analog output						
- Manual						
⊡- Configuration □- 1.1.1.3.4.1.2.1 Indicator = 6						
1.1.1.3.4.1.2.1 Indicator = 6						
- 1.1.1.3.4.1.2.4 Range = 4-20mA						
⊕-Output 2 ⊕-Factory recall	Discover Import Properties (CSV)					
ACTIVE Ethernet Address: 192.168.151.62 UDP open						

Indicator: Set Indicator to 6.

Minimum Level: Set Minimum Level to 0 (Level of Indicator 6).

Maximum Level: Set Maximum Level to 10000 (Level of Indicator 6).

Range: Set Range to 4 – 20mA.

Click on **Apply** to save the changes.



Control the DAC outputs manually

It is possible to control the DAC outputs manually. Double click on **System Setup**, double click on **Analog output**, then double click on **Output 1** and double click on **Manual**.

m² IdCode: 0628, Device Version: 01.02, Build: 05, Serial: 14070006, 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 🗐 Watches 🚽 Exit						
📃 🖳 Display 🕨 Control 🌒 Tasks 🛛 🏪 1/0 📪 Indigator & Registers 🗩 Labels 📰 Results 🛛 🏭 Printer Layout 🎩 Printer Ticket 🖉 Glock 🗠 Scope 🛛 👔 Manage						
⊡- Penko ⊟- Device root ⊡- RIA700 Analog	Class: Penko.Device root.RIA700 Analog.System Sett Path: 1.1.1.3.4.1.1	ıp.Analog output.Output 1.Manual				
-1.1.1.1 Name = RIA700 4 inputs, 2 outputs E Live E System	Manual output level 0,00 %					
i System Setup i Service	Manual control					
⊡- Communication ⊡- RS485	Manual 0.00%					
Ethernet Ethernet BusLink	Manual 100.00%					
⊡- CAN Buslink ⊡- Output Control	Manual off					
Analog input Analog output Output 1 Origuration Output 2 Factory recall						
	Discover Import Properties (CSV)	Apply				
ACTIVE USB USB open						

Manual output level: here you can set the DAC output manually in a percentage.

Manual control: click on Manual control to set the DAC output with an percentage you have set in the Manual output level.

Manual 0.00%: click on this button the set the DAC output to 0.00%

Manual 100.00%: click on this button the set the DAC output to 100.00%

Manual off: click on this button to stop the manual output, the output will now look at the selected Indicator.



Checking the connection

To check if the connection works, use the FLEX and go to **Menu** \rightarrow **Status** \rightarrow **Indicators** \rightarrow **Device**. Now you should see the 4 analog inputs from 116 to 119 if they are switched on.

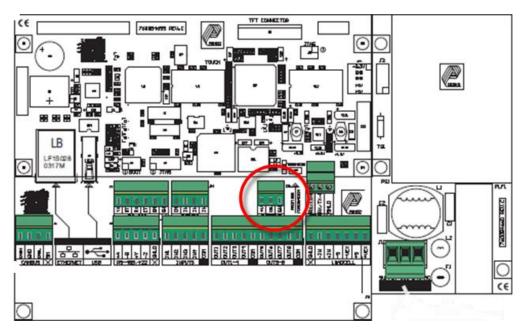
The2 analog output is shown at 106.

		Indica	tors	TAC:00000031 CAL:00000015
Device 1				
101: 0.411	121:	141:	161:	181:
102: 0.401	122:	142:	162:	182:
103: 1.000	123:	143:	163:	183:
104: 0.4012	124:	144:	164:	184:
105: 10.000	125:	145:	165:	185:
106: 1.440	126:	146:	166:	186:
107: 2.000	127:	147:	167:	187:
108:	128:	148:	168:	188:
109:	129:	149:	169:	189:
110:	130:	150:	170:	190:
111:	131:	151:	171:	191:
112:	132:	152:	172:	192:
113:	133:	153:	173:	193:
114:	134:	154:	174:	194:
115:	135:	155:	175:	195:
116: 20.00	136:	156:	176:	196:
117: 0.00	137:	157:	177:	197:
118: 0.00	138:	158:	178:	198:
119: 0.00 120:	139: 140:	159: 160:	179:	199:
120.	140.	180.	180:	200:
Dev	ice		*	Back
Dev	ice		*	Back

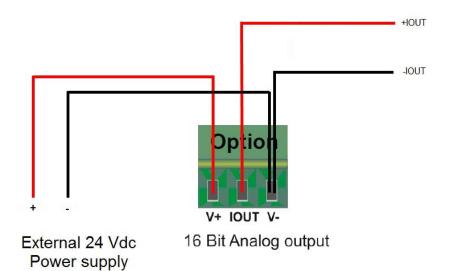


Connect the FLEX 2100 analog output

Location of the analog output



The analog output is an passive output therefore the analog output must have an external 24Vdc power supply.





Analog output

In/Outputs Inputs DAC Setup DAC Calibrate Collector / controller

Go to System setting \rightarrow System Setup \rightarrow In/Output \rightarrow DAC Setup.

Set the Extended Register to 31 and Mode to 4 – 20mA.

Anal	log Outpu	t Setup	TAC:00000031 CAL:00000015
Extended Regis	ter	31	EDIT
Mode	-	4-20mA	+
X Cancel		🖌 Ok	
A A A A A A A A A A A A A A A A A A A			NDICATOR / CONTROLLER

Press OK to save the settings and press Home to return to FLEX BLT "Menu"





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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

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http://penko.com/nl/publications_certificates.html

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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

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