

PENKO Engineering B.V.

Your Partner for Fully Engineered Factory Solutions



How to...
Connect a FLEX 2100, FLEX or Flex 2ch. -
4ch to an external display



PENKO

an ETC Company

Table of Contents

RS232.....	3
Hardware connection.....	3
Settings.....	4
RS422.....	6
Hardware connection.....	6
Settings.....	7

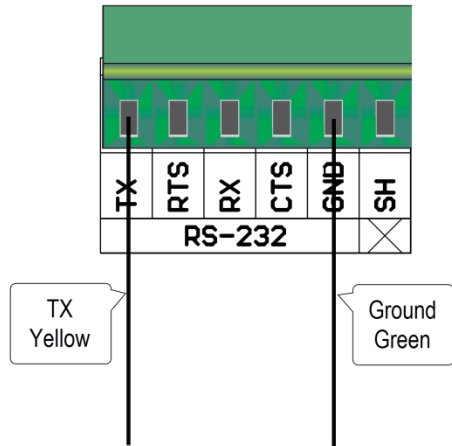
RS232

Hardware connection

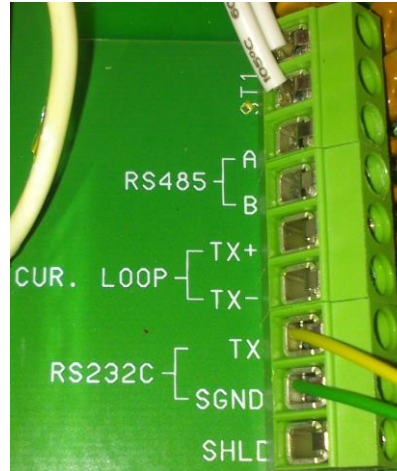
In the example we use a Vishay RD10-S-2-E display.

Connect **TX** of the FLEX 2100 connector to **RS232 TX** on the display, and connect **GND** of the FLEX 2100 connector to **RS232-SGND** on the display.

RS232 FLEX 2100

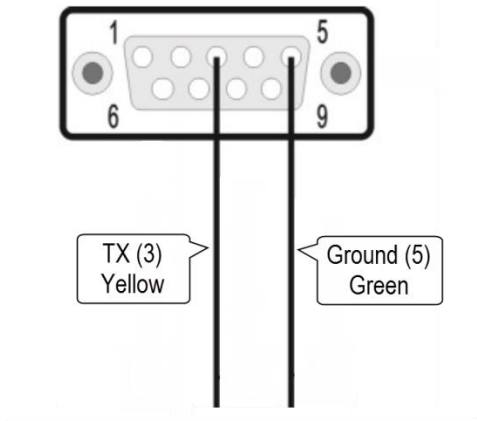


RS232 external display

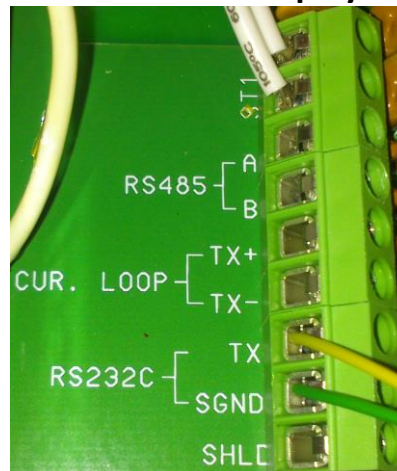


Connect **pin 3** of the FLEX or FLEX 2ch. - 4ch. sub-D connector to **RS232 TX** on the display, and connect **pin 5** of the FLEX or FLEX 2ch. - 4ch. sub-D connector to **RS232-SGND** on the display.

RS232 FLEX/FLEX 2ch. - 4ch.



RS232 external display



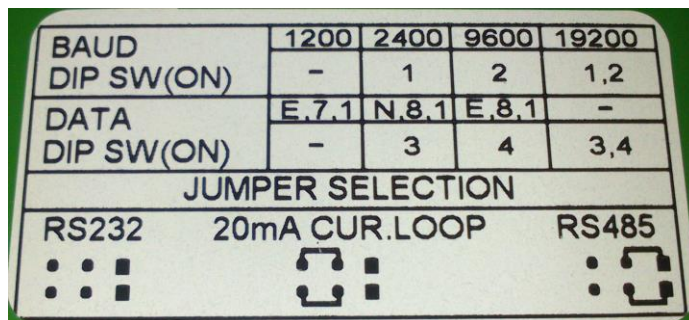
Settings

RS232	FLEX 2100, FLEX or FLEX 2ch. - 4ch. Settings	Display settings
Baudrate*	1200	1200
Protocol**	ASCII	
CoAdress	255	
Stopbits	1	1
Data bits		8
Parity	None	None
Indicator	1	

*The Baudrate must be the same on the FLEX 2100, FLEX or FLEX 2ch. - 4ch. side and on the display side, otherwise the communication won't work.

**Make sure that only RS232 is set to ASCII, the RS232 and RS422 cannot be both set to ASCII at the same time.

Check if the settings on the display are correct. In this case dipswitch 1 and 2 must be set in the "Off" position to get the Baudrate of 1200 and dipswitch 3 must be set in the "On" position for the correct data settings. And the jumpers must be set in the "RS232" position.



If you want a different value to be shown select the indicator number below that you want.

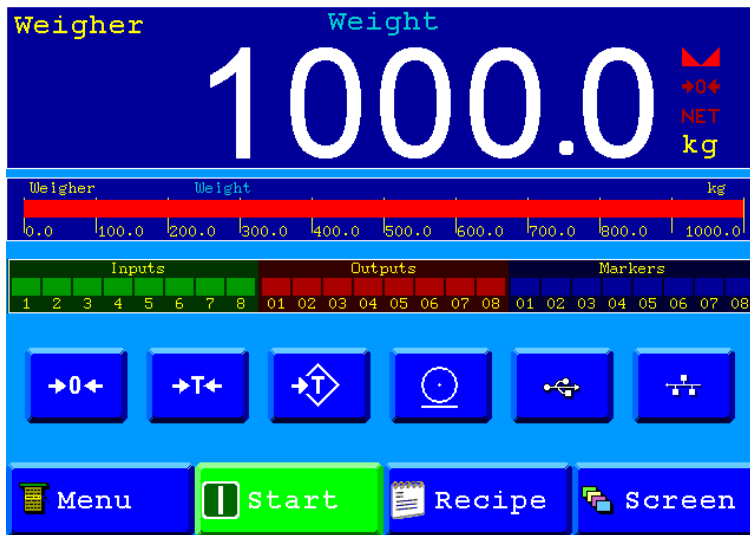
Indicator number	Function	Description
1	Weigher	The actual weight of the Indicator.
2	Fast Gross	The weight without filtering and Tare.
3	Fast Net	The weight without filtering and Tare deducted.
4	Display Gross	The weight with Display filtering and without Tare.
5	Display Net	The weight with Display filtering and Tare deducted.
6	Tare	The weight of an empty container. Gross – Tare = Net.
7	Peak	The highest point weighted on the Indicator.
8	Valley	The lowest point weighted on the Indicator.

PENKO How to...

Connect a FLEX 2100, FLEX or Flex 2ch. - 4ch to an external display

Indicator number	Function	Description
9	Weigher x10	The actual weight of the Indicator with 1 extra decimal point for more accuracy.
10	Fast Gross x10	The weight without filtering and Tare with 1 extra decimal point for more accuracy.
11	Fast Net x10	The weight without filtering and Tare deducted with 1 extra decimal point for more accuracy.
12	Display Gross x10	The weight with Display filtering and without Tare with 1 extra decimal point for more accuracy.
13	Display Net x10	The weight with Display filtering and Tare deducted with 1 extra decimal point for more accuracy.
14	Tare x10	The weight of an empty container. Gross – Tare = Net with 1 extra decimal point for more accuracy.
15	Peak x10	The highest point weighted on the Indicator with 1 extra decimal point for more accuracy.
16	Valley x10	The lowest point weighted on the Indicator with 1 extra decimal point for more accuracy.
17	Sample	The actual sample of the load cell(s) in mV.

Now the display will show the same weight as the FLEX 2100, FLEX or FLEX 2ch. - 4ch..



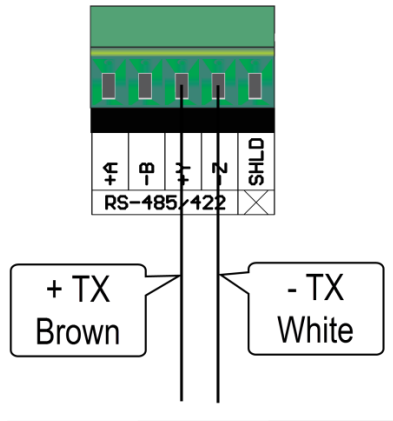
RS422

Hardware connection

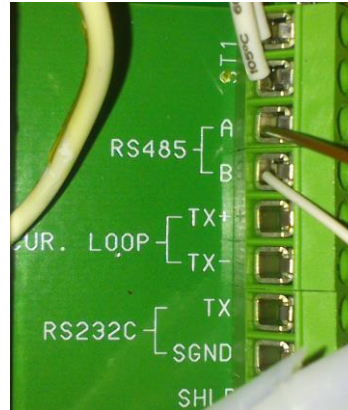
In the example we use a Vishay RD10-S-2-E display.

Connect **+Y** of the FLEX 2100 connector to **RS485-A** on the display, and connect **-Z** of the FLEX 2100 connector to **RS485-B** on the display.

RS422 FLEX 2100

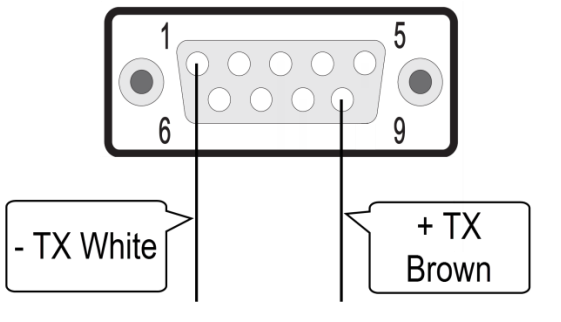


RS485 Display

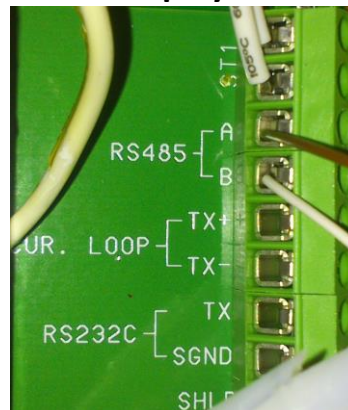


Connect **pin 1** of the FLEX or FLEX 2ch. - 4ch. sub-D connector to **RS485-B** on the display, and connect **pin 9** of the FLEX or FLEX 2ch. - 4ch. sub-D connector to **RS485-A** on the display.

RS422 FLEX/FLEX 2ch. – 4ch.



RS485 Display



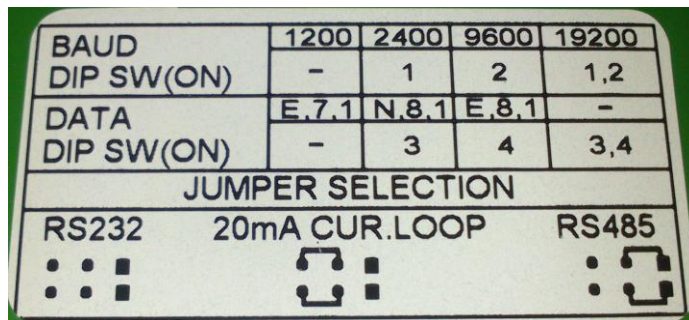
Settings

RS422	FLEX 2100, FLEX or FLEX 2ch. - 4ch. Settings	Display settings
Baudrate*	1200	1200
Protocol**	ASCII	
Adress	255	
Stopbits	1	1
Data bits		8
Parity	None	None
Indicator	1	

*The Baudrate must be the same on the FLEX 2100, FLEX or FLEX 2ch. - 4ch. side and on the display side, otherwise the communication won't work.

**Make sure that only RS422 is set to ASCII, the RS232 and RS422 cannot be both set to ASCII at the same time.

Check if the settings on the display are correct. In this case dipswitch 1 and 2 must be set in the "Off" position to get the Baudrate of 1200 and dipswitch 3 must be set in the "On" position for the correct data settings. And the jumpers must be set in the "RS485" position.



If you want a different value to be shown select the indicator number below that you want.

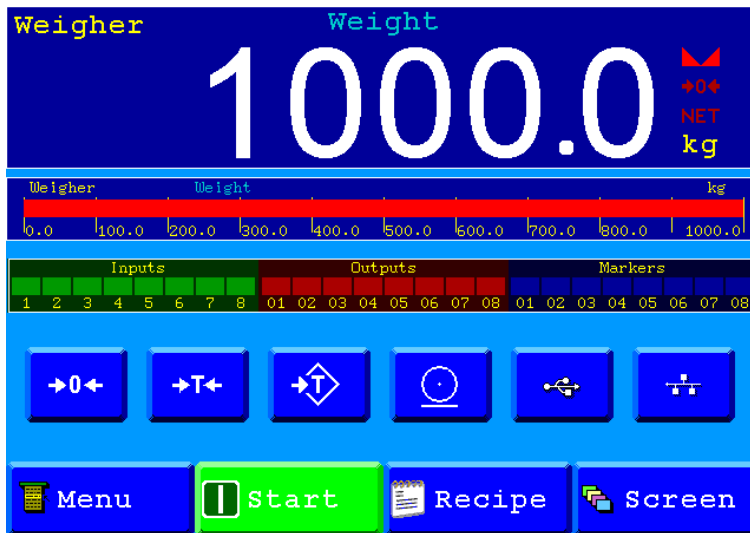
Indicator number	Function	Description
1	Weigher	The actual weight of the Indicator.
2	Fast Gross	The weight without filtering and Tare.
3	Fast Net	The weight without filtering and Tare deducted.
4	Display Gross	The weight with Display filtering and without Tare.
5	Display Net	The weight with Display filtering and Tare deducted.
6	Tare	The weight of an empty container. Gross – Tare = Net.
7	Peak	The highest point weighted on the Indicator.
8	Valley	The lowest point weighted on the Indicator.
9	Weigher x10	The actual weight of the Indicator with 1 extra decimal point for more accuracy.

PENKO How to...

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Indicator number	Function	Description
10	Fast Gross x10	The weight without filtering and Tare with 1 extra decimal point for more accuracy.
11	Fast Net x10	The weight without filtering and Tare deducted with 1 extra decimal point for more accuracy.
12	Display Gross x10	The weight with Display filtering and without Tare with 1 extra decimal point for more accuracy.
13	Display Net x10	The weight with Display filtering and Tare deducted with 1 extra decimal point for more accuracy.
14	Tare x10	The weight of an empty container. Gross – Tare = Net with 1 extra decimal point for more accuracy.
15	Peak x10	The highest point weighted on the Indicator with 1 extra decimal point for more accuracy.
16	Valley x10	The lowest point weighted on the Indicator with 1 extra decimal point for more accuracy.
17	Sample	The actual sample of the load cell(s) in mV.

Now the display will show the same weight as the FLEX 2100, FLEX or FLEX 2ch. - 4ch..





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

