

2-wire 4-20mA Signal Generator Loop Simulator

BRT 420LGPM

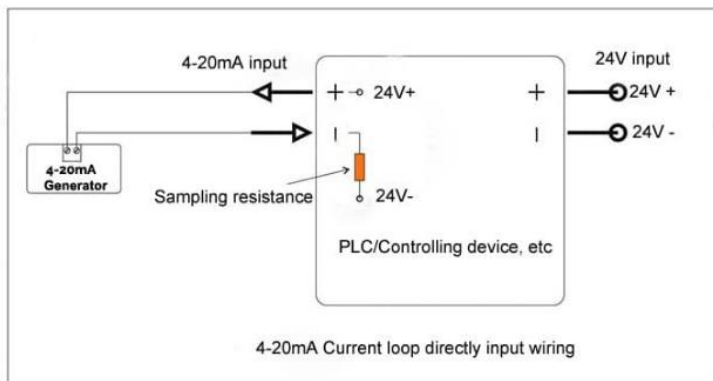
General technical parameters

Output current	4mA---20mA
Max. output range	3mA---21mA, settable through knob
Operating power supply voltage	15V---30V
Sampling resistor	10 Ω ---500 Ω
Display precision	0.05mA
Output precision	±0.5%
LCD display mode	4-20mA current value, 0-100% percentage, 0-50Hz, programmable and settable
Physical size (front)	79.5X42mm (±1mm error)
Install panel /Panel cut-out size	77X40mm (±1mm error)
Wiring mode	Two wire pluggable wiring terminal block
Operating temperature range	-10 to +55 °C
Storage temperature range	-20 to +60 °C
Humidity	85% R.H. non-condensation

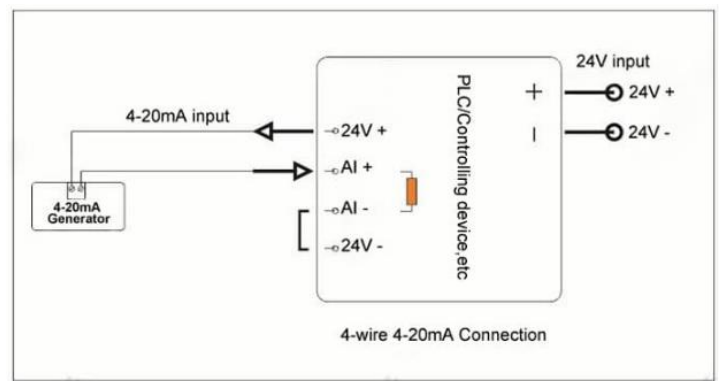
Note:

1. Please note that there is no need to distinguish the positive side or the negative side of this two-wire signal generator when you wiring. The sign on the diagram is just for you to understand more easily.
2. If more information required, please visit <https://www.brightwinelectronics.com> to get details.

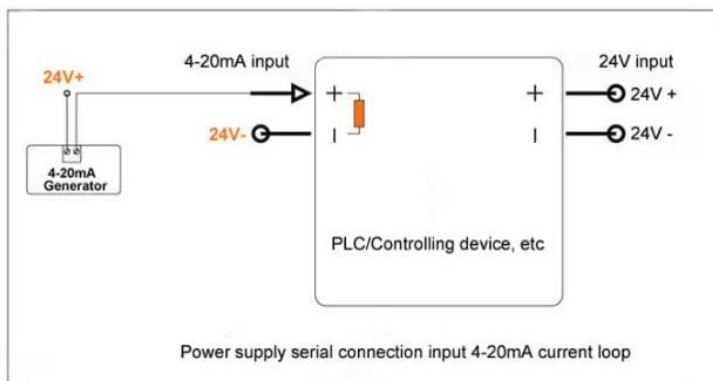
Referential Applications:



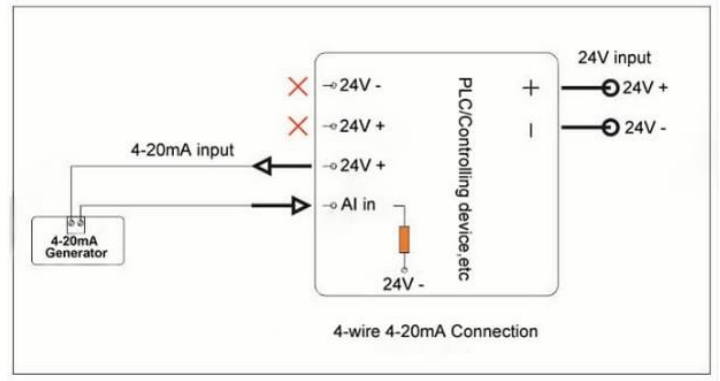
Wiring Circuit for 4-20mA Loop Simulator



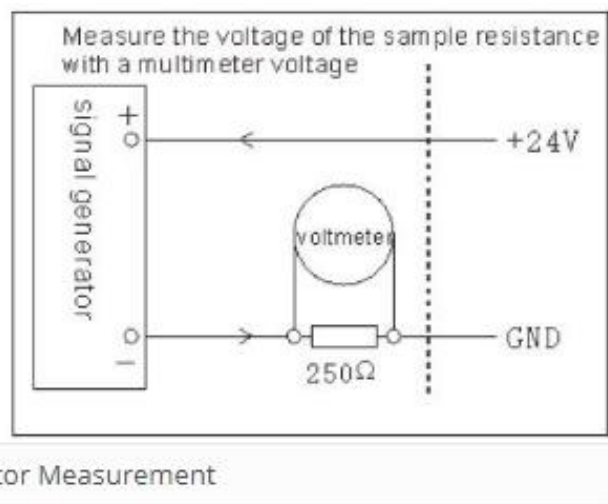
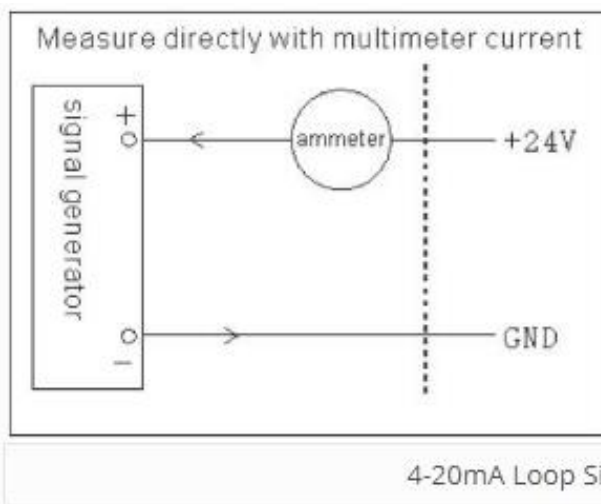
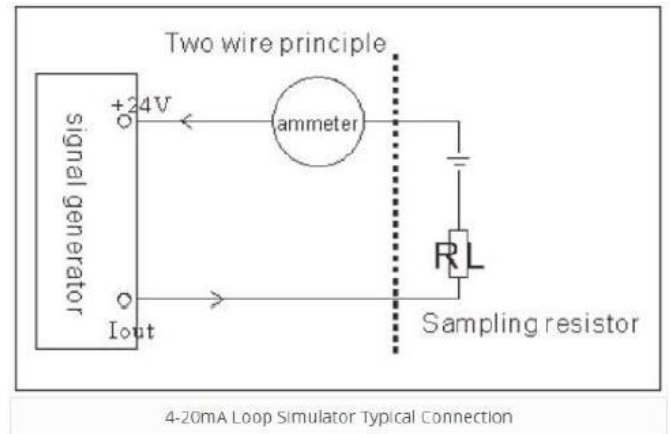
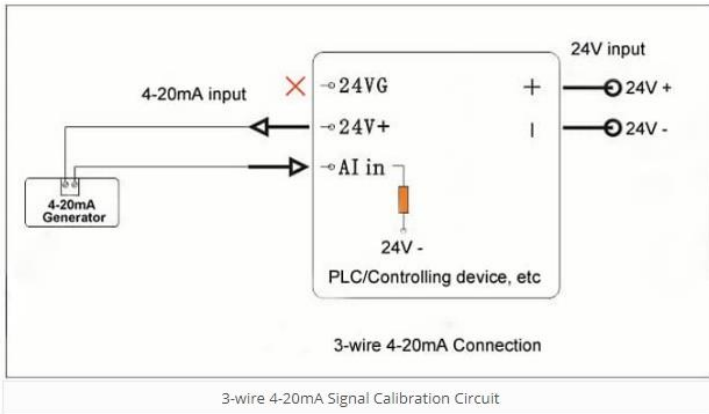
4-20mA Simulator 4-wire Application



2-wire 4-20mA Loop Simulator (can be applied for Siemens PLC)



4-20mA Simulator 4-wire Application



System Setting Steps

Knob rotation function

- **Clockwise rotation once:** or increase value
- **Anti-clockwise rotation once:** or subtract value
- **Press down the knob:** Confirmation

1. Rough Adjustment/Fine Adjustment Switching: Long pressing the knob for 2 seconds, the meter enters into parameters setting status and displays " F001 ", then press down the knob to enter into rough/fine adjustment status, rotate the knob to change the value: **0:** rough adjustment, **1:** fine adjustment (refer to table 1 below); next press down the knob to confirm and save the setting.

2. Display Mode/Output Range/ F002....F007 Setting Steps

Long pressing the knob for 2 seconds, the meter enters into parameters setting status and displays " **F001** ", then rotate the knob to enter the password: + - - + (refer to knob rotation function above), next press down the knob to confirm and enter into **F002** signal output range setting status: **0:** 4-20mA, **1:** 3-21mA (refer to table 1 below), next press down the knob to confirm and save the setting. After that user can rotate the knob to enter into **F003.... F007** setting.

Rotate the knob till **FEnd** displays, then press down the knob to exit parameters setting status or no actions taken, the meter will return back to normally operation status.

Code	Function	Value available	Default
F001	Output mode	0 : Coarse tuning mode. (*"F004" set how many turns to rotate.) 1 : Fine tuning mode. (*"F005" set how many turns to rotate.) 2 : Quick output (For fast validation of some value and quickly test) 3 : Automatic curve output (For products aging test.) (* When setting 2, 3 above, user must set parameters "F100" "F200" > 0 firstly, F100, F200 refer to table 2, table 3 below.)	0
F002	Output range	0 :4-20mA 1 :3-21mA	0
F003	Display mode	0 : Real Current 1 : 0-100.0% 2 : 0-50.0Hz	0
F004	Add and sub value for coarse tuning mode	1-50 : Increasing and subtracting value per pulse, no decimal point (1-50)×10	1
F005	Add and sub value for fine tuning mode	1-50 : Increasing and subtracting value per pulse, no decimal point (1-50)	1
F006	Output value automatic save	0 : No automatically save function (Need to press down knob to save) 1 : Automatic save	0
F007	Output calibration	-100 -- +100 (be cautious in calibration, about 20mA±4mA)	

*F007 output calibration is not recommended to use.

Table 1 System setting code table (User needs to enter password: + - - +)

3. Fast Output Setting

Long pressing the knob for 2 seconds, the meter enters into parameters setting status and displays " **F001** ", then rotate the knob to enter the password: + - - (refer to knob rotation function above), next press down the knob to confirm and enter into **F100** signal fast output setting status: **0**: no fast output, **2...9**: 2 to 9 fast output points (refer to table 2 below). Then if user need 4 fast output point, please rotate the knob to change the value into 4, next press down the knob to enter into **F101, F102, F103, F104** (4 output points) setting status (refer to table 2 below) and press down to save parameter setting before exit.

After all the parameters setting is completed, user can rotate the knob till **FEnd** displays, then press down the knob to exit parameters setting status or no actions taken, the meter will return back to normally operation status.

Code	Function	Value available	default
F100	How many fast output point	0 : No fast output; 2...9 : amount of fast output point	0
F101 ...109	Output value of 2...9 points	Range: 3.00-21.00mA. * Must be "F100" > 0	

Table 2 Fast output setting code table (User needs to enter password: + - -)

4. Auto Curves Output Setting

Long pressing the knob for 2 seconds, the meter enters into parameters setting status and displays " **F001** ", then rotate the knob to enter the password: - + - + (refer to knob rotation function above), next press down the knob to confirm and enter into **F200** automatic curves output setting status: **0**: no curves output; **1...9**: 1 to 9 segments of curve output. Then if user need 4 segments of curve output, please rotate the knob to change the value into 4, next press down the knob to enter into each curve parameters setting: **Ft01, FA01, Fb01; Ft02, FA02, Fb02.... Ft04, FA04, Fb04** (refer to table 3 below) and press down to save parameter setting before exit.

After all the parameters setting is completed, user can rotate the knob till **FEnd** displays, then press down the knob to exit parameters setting status or no actions taken, the meter will return back to normally operation status.

Code	Function	Value available	Default
F200	Number of curves	0: No curve output 1....9: amount of curve segment	0
Ft01	Segment # 1 Curve running time	0-999 sec. * Must be "F200" >0	
FA01	Segment # 1 Curve Start current value	3.00-21.00mA	
Fb01	Segment # 1 Curve ending current value	3.00-21.00mA	
Ft02	Segment # 2 Curve running time	0-999 sec.	
...	
Fb09	Segment # 9 Curve ending current value	3.00-21.00mA	

Table 3 Auto curves output setting code table (User needs to enter password: - + - +)

"FtXX" running time; "FAXX" starting current; "FbXX" ending current,

a) Each curve has three parameters setting: "FtXX" running time /"FAXX" starting current value /"FbXX" ending current value, so after entering the first curve setting, screen display "FtXX," rotate encoder knob to adjust the value of the XX, time adjusting range 1-999 seconds.

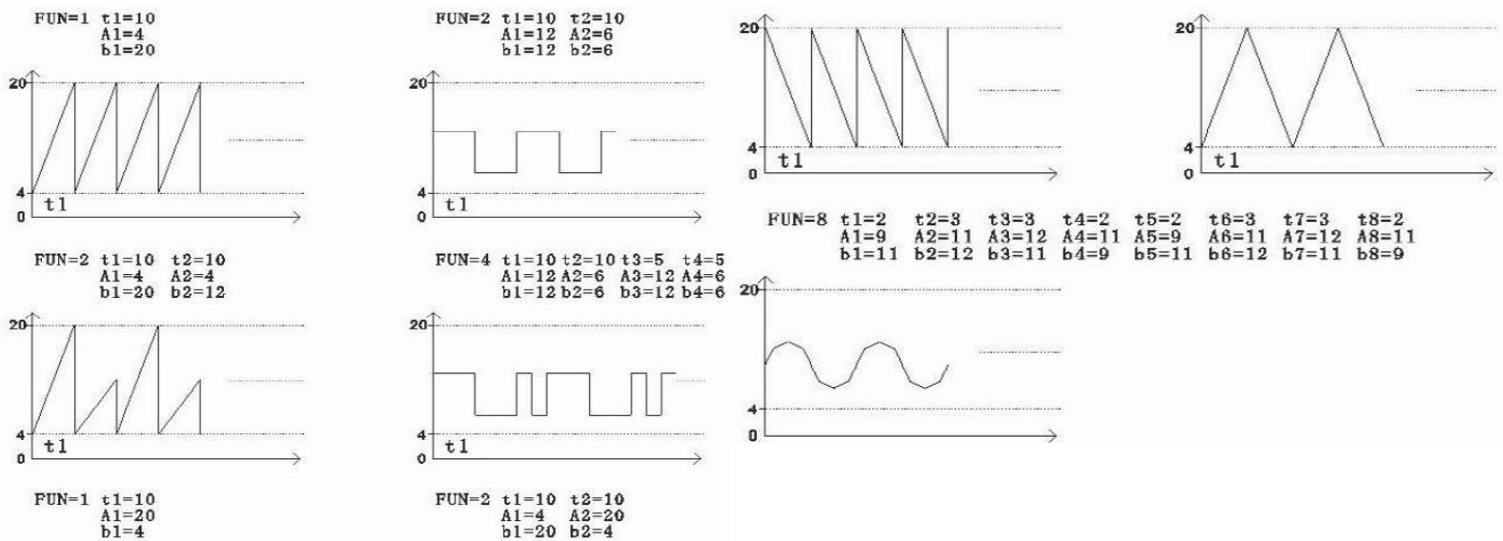
b) Press down the encoder knob to enter the "starting current value" setting of the first curve. The screen displays "FAXX" and the current setting range is 3-21 mA.

c) Then press down the encoder knob to enter the "ending current value" setting of the first curve. The screen displays "FbXX" and the current setting range is 3-21 mA.

d) The setting method of second curve is the same to that step above, until you complete all the parameters of curve settings, and then press down knob to save or no actions, it automatically exits the setting state.

After all the parameters setting is completed, user can rotate the knob till FEnd displays, then press down the knob to exit parameters setting status or no actions taken, the meter will return back to normally operation status.

f) Examples of the parameters of various curves:



* The specification is subject to change without notice.

* For technical support, pls send email to brightwinelectronics@hotmail.com