Quick Start Guide

Tek-Cor 1100A

796 Tek Drive, Crystal Lake, IL 60014 USA +1 847 857 6076 | +1 847 655 7428 +1 847 655 6147 www.tek-trol.com

Quick Start Guide

1. Before You Begin

This guide provides basic guidelines to assist you in quickly getting started.

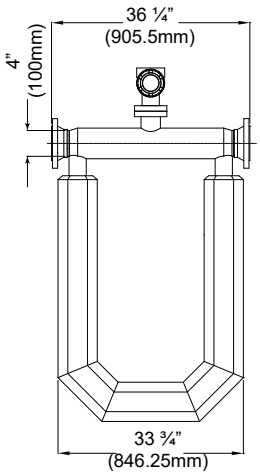
Installation of the transmitter in an explosive environment must be undertaken in accordance with the appropriate local, national, and international standards, codes, and practices. Review the approvals section of the Tek-Cor 1100A reference manual for any restrictions associated with a safe installation.

2. Unpack

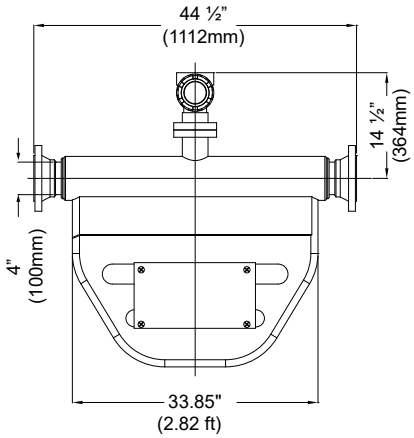
Tek-Cor 1100A Coriolis Mass Flow meter x 1

3. Dimensional View

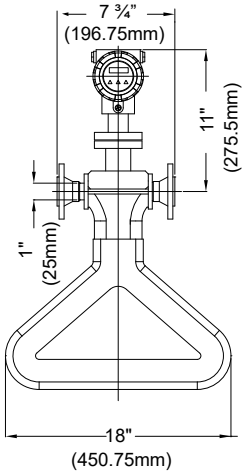
Note: For additional dimensions refer to the detailed manual.



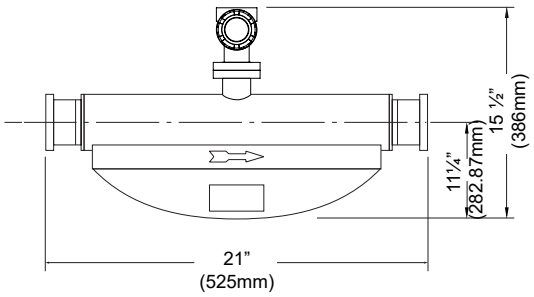
U-Tube



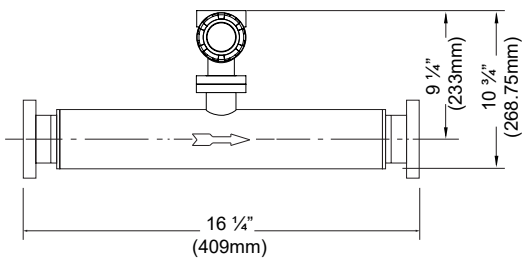
Standard



Nano



Super Bend

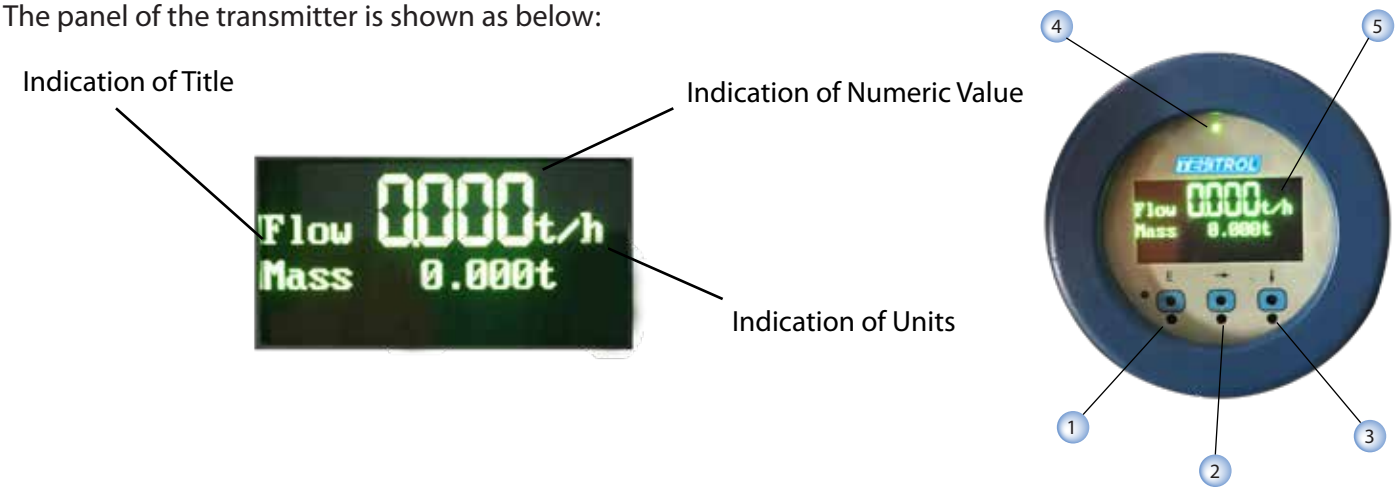


Straight

4. Display

Please use the operation panel of the transmitter to set the configuration, such as basic configuration parameters, zero calibration, and cut-off value of low flow and output range of current frequency.

The panel of the transmitter is shown as below:



No.	Notes
1	E key : Enter
2	→ Key : Move Cursor or Return
3	↓ Key : Page Down
4	Light for Working Status
5	Two Line LED

5. Key Functions

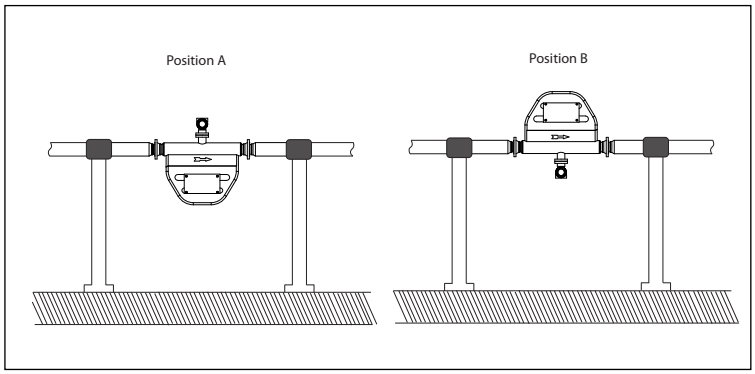
Key	Measurement State	Menu State	Function State	Date State
↓	Show the Measurement Result and State on Page 1/2/3 of the Display. Page Down to Menu State.	Next Menu	Next Function	Change Number Change Unit Change Character
→	Return to the Last Screen	Return to the Upper-Level Menu, Press the Key Several Times to Return to the Measurement State	Select Function	Move the Cursor Right
E	-	Enter the Menu	Confirm and Save the Function	Save the Input Select Yes or No then Back to Function Menu

⚠ Operation point of Photoelectric Key is located right behind the glass panel. It is better to operate the Photoelectric Key in a vertical direction, not a horizontal direction.

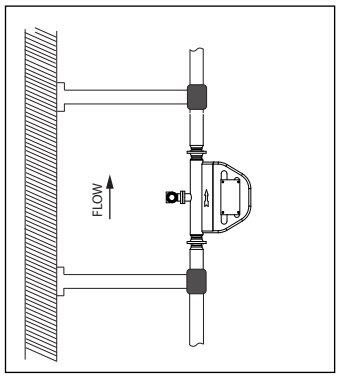
Quick Start Guide

6. Sensor Mounting

Micro-Bend Sensor Mounting

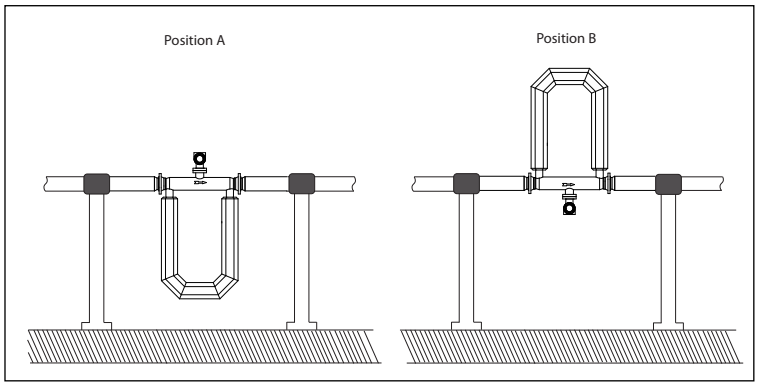


Recommended Horizontal Installation

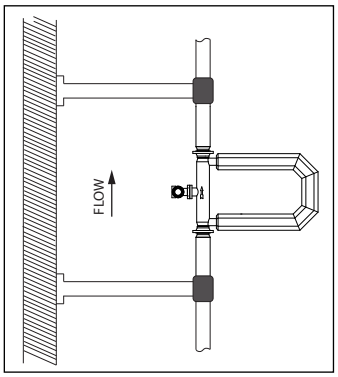


Vertical Mounting

U-Shaped Sensor Mounting



Recommended Horizontal Installation



Vertical Mounting

If the medium contains solid particles, mount the meter as shown in position "A", and in all other cases mount the meter as shown in position "B". Vertical Mounting is recommended, if the medium contains gas bubbles and solid particles.

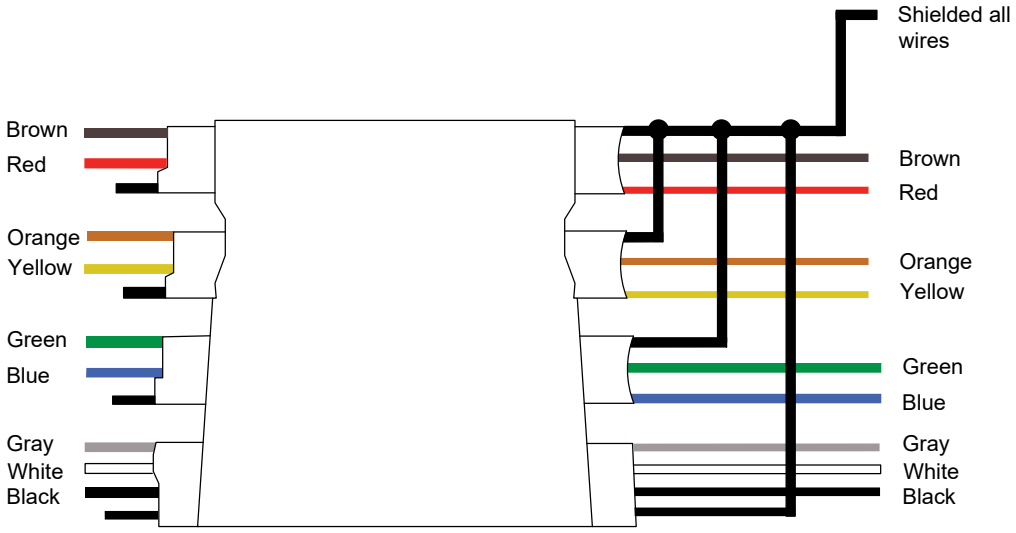
7. Transmitter Mounting

Integral Mount

Install the sensor and the transmitter on the pipeline. The transmitter can be mounted with 90 ° revolutions depending on the requirement of sensor installation.

Remote Mount

When Tek-Cor 1100A is mounted separately, the sensor and the transmitter should be connected through special 9-core cable.



Note: In case of remote mounting, the sensor and the transmitter should be respectively matched with junction box for connecting the special 9-core cable.

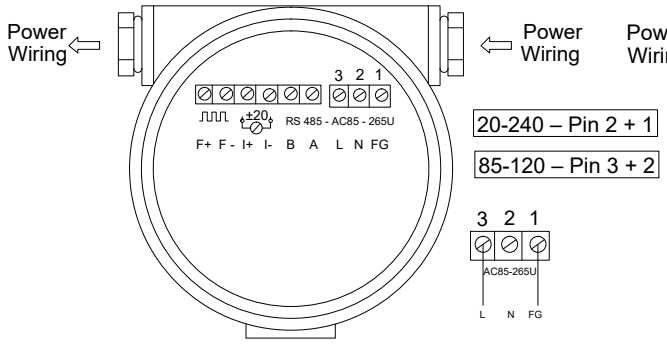
Line No.	Line Color	Function
1	Brown	The Left Coil +
2	Red	The Left Coil -
3	Orange	The Left Coil +
4	Yellow	The Left Coil -
5	Green	Driving Coil +
6	Blue	Driving Coil -
7	Grey	Temperature +
8	White	Temperature -
9	Black	Temperature Compensation

Cut off power before connecting cables. The power voltage must match that indicated in the junction box of the transmitter and the earth connector must be well connected with the earth wire to ensure its correct safety performance.

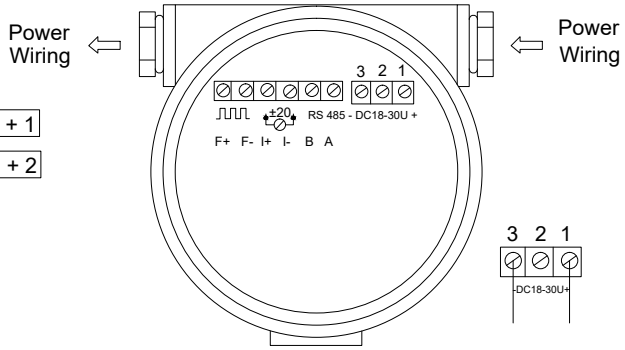
Quick Start Guide

8. Power Supply and Signal Output Wiring

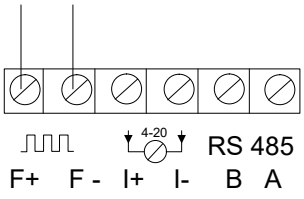
The transmitter can be connected to 85 to 220 VAC or 18 to 28 VDC power supply.



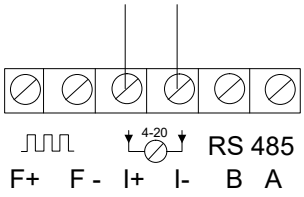
AC Power Wiring



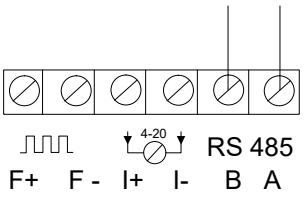
DC Power Wiring



Pulse Output Wiring



Current Output Wiring



RS485 Output Wiring

Before powering up the flow meter in a dangerous area, please confirm that the flow meter's explosion-proof class is consistent with the environmental requirements in order to avoid potential danger. Make sure that the power is shut off to avoid electric shock when installing the transmitter. Follow the installation and operation instruction manual to ensure safe operation.

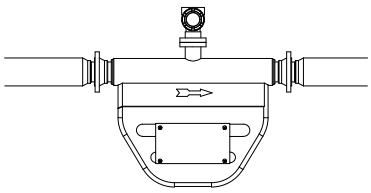
9. Grounding

Both the sensor and the transmitter have to be grounded correctly; failure to do so may cause a measurement error and the sensor may not work. If the pipeline is connected with the ground, the transmitter can be grounded through the pipeline; if the pipeline is not connected with the ground, the transmitter should be grounded independently.

10. Installation

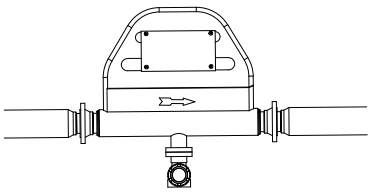
Standard Installation

Picture-1



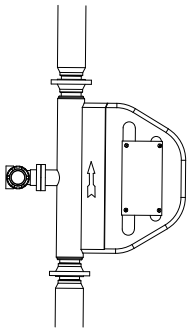
For Liquid

Picture-2



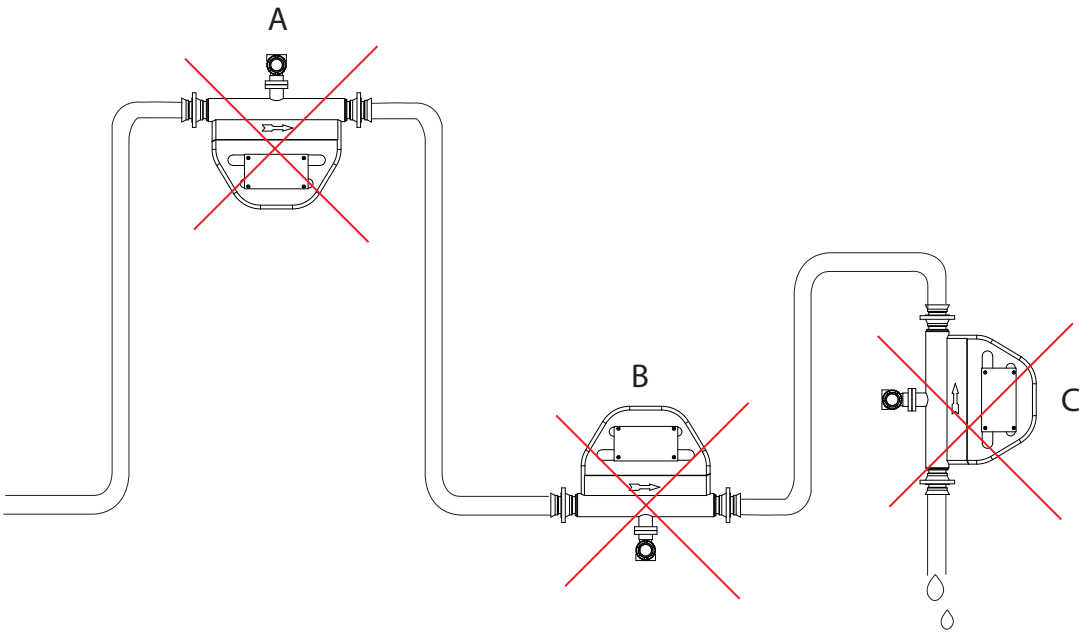
For Gas

Picture-3



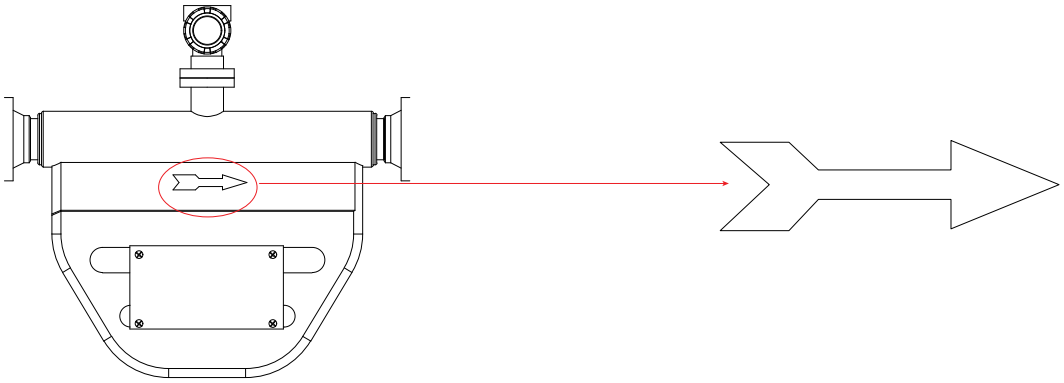
For or Slurry

For the horizontal installation, the measuring tube should be installed on the downside of the pipeline when the process medium is liquid or slurry (shown in Picture 1); on the upside of the pipeline when the process medium is gas (shown in Picture 2). For vertical installation, the measuring tube should be installed alongside the pipeline when the process medium is liquid, slurry, or gas (shown in Picture 3).



The meters must not be mounted at the highest point of the tubing (A), if gas bubbles are expected.
If solid particles expected, then it should not be installed at the lowest point (B).
The meters must not be mounted in a drop line near the open end (C), as this may cause the meter to run empty.

11. Flow Direction



There is a flow arrow which indicates the flow direction in front of the sensor; install the Tek-Cor 1100A accordingly; failure to do may result in the transmitter not displaying the mass flow correctly. If the process medium is liquid or slurry, the flow direction is down-up; if the process medium is gas, the flow direction can be either down-up or up-down.

Note: It is recommended that sensor of Tek-Cor 1100A is supported using a rubber connector as the buffer.

12. Configuration Parameter

Review or set the configuration parameters according to the following indications
(Press to ↓ go to the next page and press → to move the position of cursor)

WARNING

If you forget your password, you must call a Tek-Trol engineer to reset it.

Measuring Unit

Configuration ▶ E ▶ PassWord? (Default password is 000000) ▶ ↓ ▶ Output Config ▶ ↓

▶ Unit Config ▶ E ▶ Mass Unit or Mass Flow Unit or Volume Unit or Volume Flow Unit or Density Unit

▶ Density Unit ▶ E (Set the units)

Reset Totalizer

Before performing the Total Reset activity change the Dip switch settings in the right side of the display after opening the protective glass cover as the 1 to 8 - OFF.
This will allow you to reset the mass totalizer.
After Reset make Dip switch as 1- ON & 2to 8- OFF state. This will prevent any unauthorized user to Reset the total.

Configuration ▶ E ▶ PassWord? (Default password is 000000) ▶ Flow Config ▶ E ▶

Zero Calibration ▶ ↓ ▶ Low Flow Cutoff ▶ → ▶ Reset Totalizer ▶ → ▶ Yes

▶ E (Reset the mass total to zero)

Video link demonstrating Tek-Cor 1100A Coriolis Flow Meter Reset Totalizer:
https://www.youtube.com/watch?v=lRueSyxhd9A

Low Flow Cut-off

Configuration ▶ E ▶ PassWord? (Default password is 000000) ▶ Flow Config ▶ E ▶

Zero Calibration ▶ ↓ ▶ Low Flow Cutoff ▶ → ▶ ↓ (The number can be set from 0 to 9) ▶

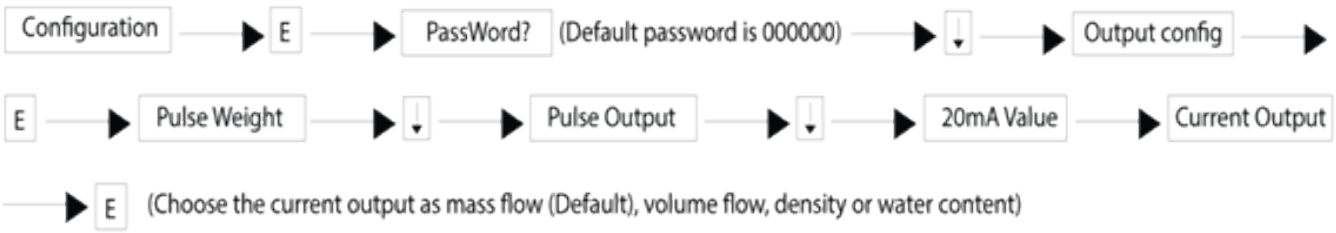
E ▶ → ▶ Yes ▶ E (Confirm and save the modification of low flow cutoff)

Quick Start Guide

Current Output

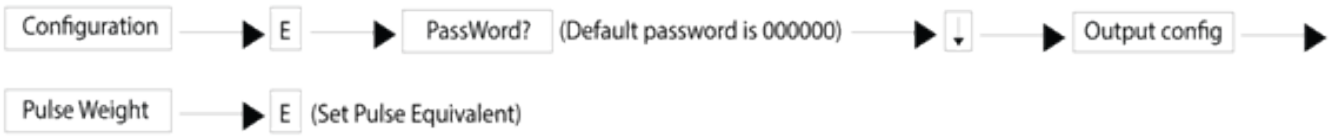
- Set the Flow Rate for 20 mA

- Set Current Output Signal



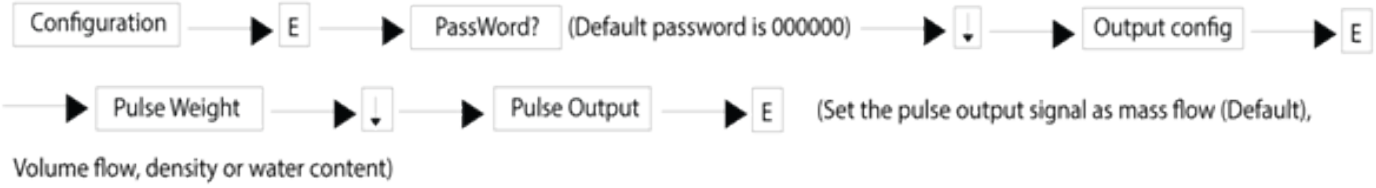
Pulse/Frequency Output

- Set Pulse Equivalent

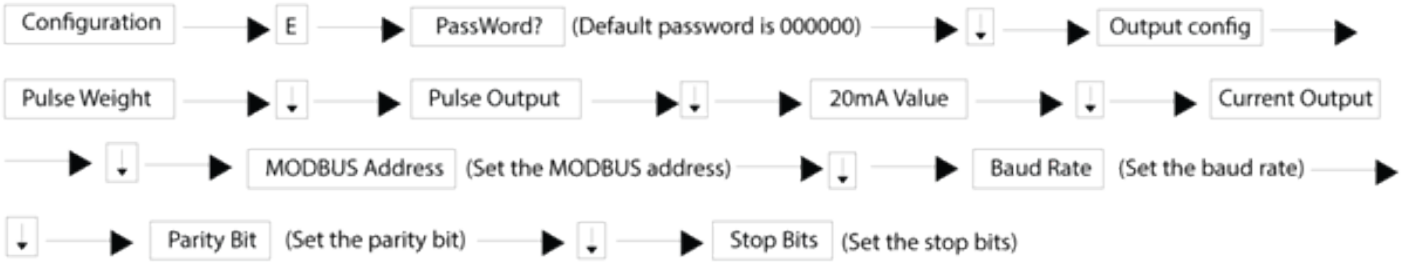


The Meter accepts any equivalent in ml/N (milliliter per pulse unit) for Volumetric flow & g/N (grams per Pulse unit) for mass flow. You need to convert Each unit of your choice to these 2 units for pulse weight.
Example: suppose you want the pulse output as 1 gallon per pulse, you need to convert 1 gallon to ml i.e., 3785.412 enter this value as pulse weight and the pulse output reflects as 1 Pulse=1 gallon. If you want 0.1 gallon per pulse, put 378.54 as pulse weight (I.e., 10 pulse = 1 gallon). always convert the unit in ml and enter the equivalent value as required for volumetric flow, follow the same procedure for mass flow pulse output. Convert mass flow unit to Grams and put in pulse weight.

- Set Pulse Signal

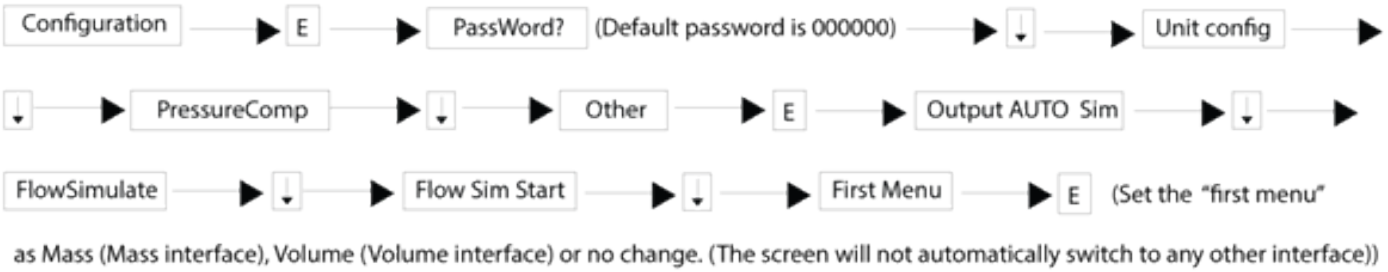


RS 485 Output

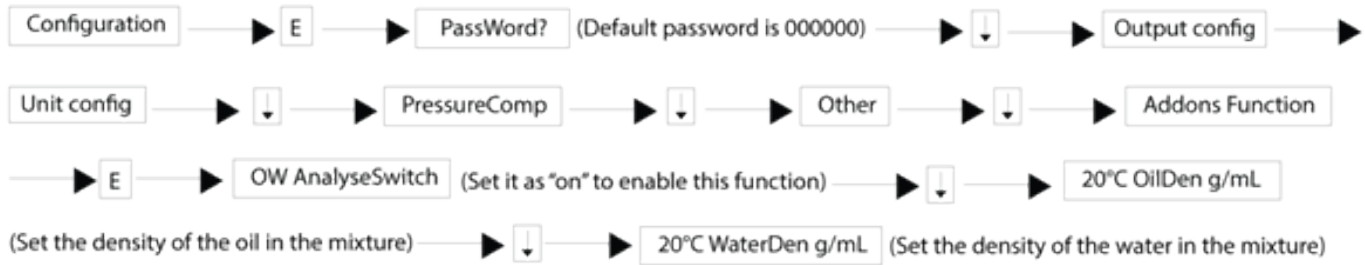


First Menu

The screen automatically displays the content chosen in "First menu" if no key operation is being done for 128 seconds.



Oil and Water Content Analysis

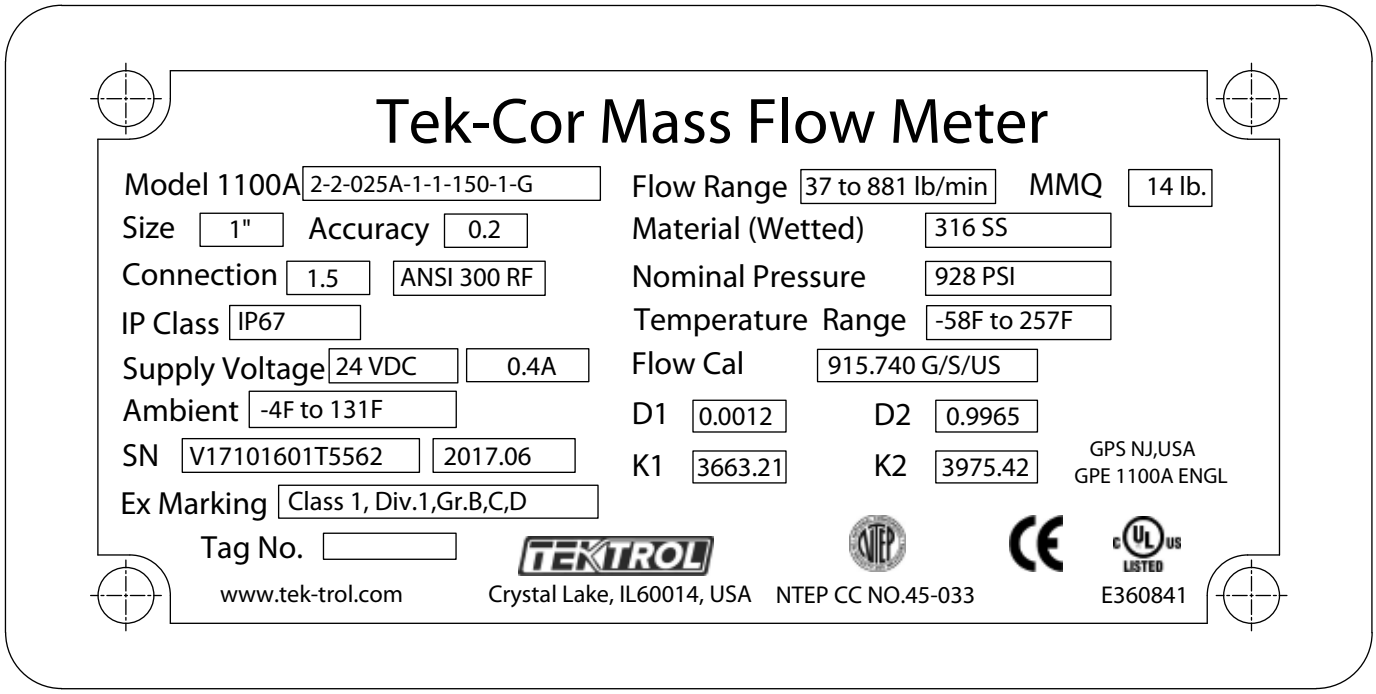


Zero Calibration

*Note:- Please refer 13 for detail procedure of ZERO calibration

13. Calibration

The Tek-Cor 1100A does not need field calibration; it has been calibrated before delivery. Each set of Tek-Cor 1100A has its own instrumental coefficient, including one flow coefficient and four density coefficients (high density D1, high period K1, low density D2, and low period K2), which will be shown in the nameplate of the Sensor or Calibration certificate.



Zero Calibration

Zero Calibration provides the reference point for the flow meter. It is necessary to conduct the zero calibration whenever the Coriolis Meter is installed.

For Zero Calibration, follow the following procedure after installation:

- Warm-up the flow meter for 30 minutes.
- Once the warm-up is complete, continue the flow through the flow meter until the temperature of the flow meter is same as the working temperature of the fluid.
- When the flow meter has reached the required temperature, close the downstream valve, and make the fluid pass through the flow meter under normal temperature, density and, pressure. Then close the upstream valve to ensure the sensor is full of liquid during the process of Zero Calibration.
- Carry out the Zero Calibration of the flow meter.

Finally, press ↓ → Configuration → Zero-Cal → Flow Configuration → Zero Correction → E →

Input password to start zero calibration.

The default password is 000000

Note: Each Zero Calibration lasts 30 seconds and must be repeated at least 10 times.

14. Error Indication

The user can detect a fault in the flow meter using the LED indicator and LCD displays. Different colors of the LED lights indicates the working condition of the flow meter, while the LCD displays can show the self-diagnostic alarm information of the transmitter, which is useful for detecting the malfunctions.

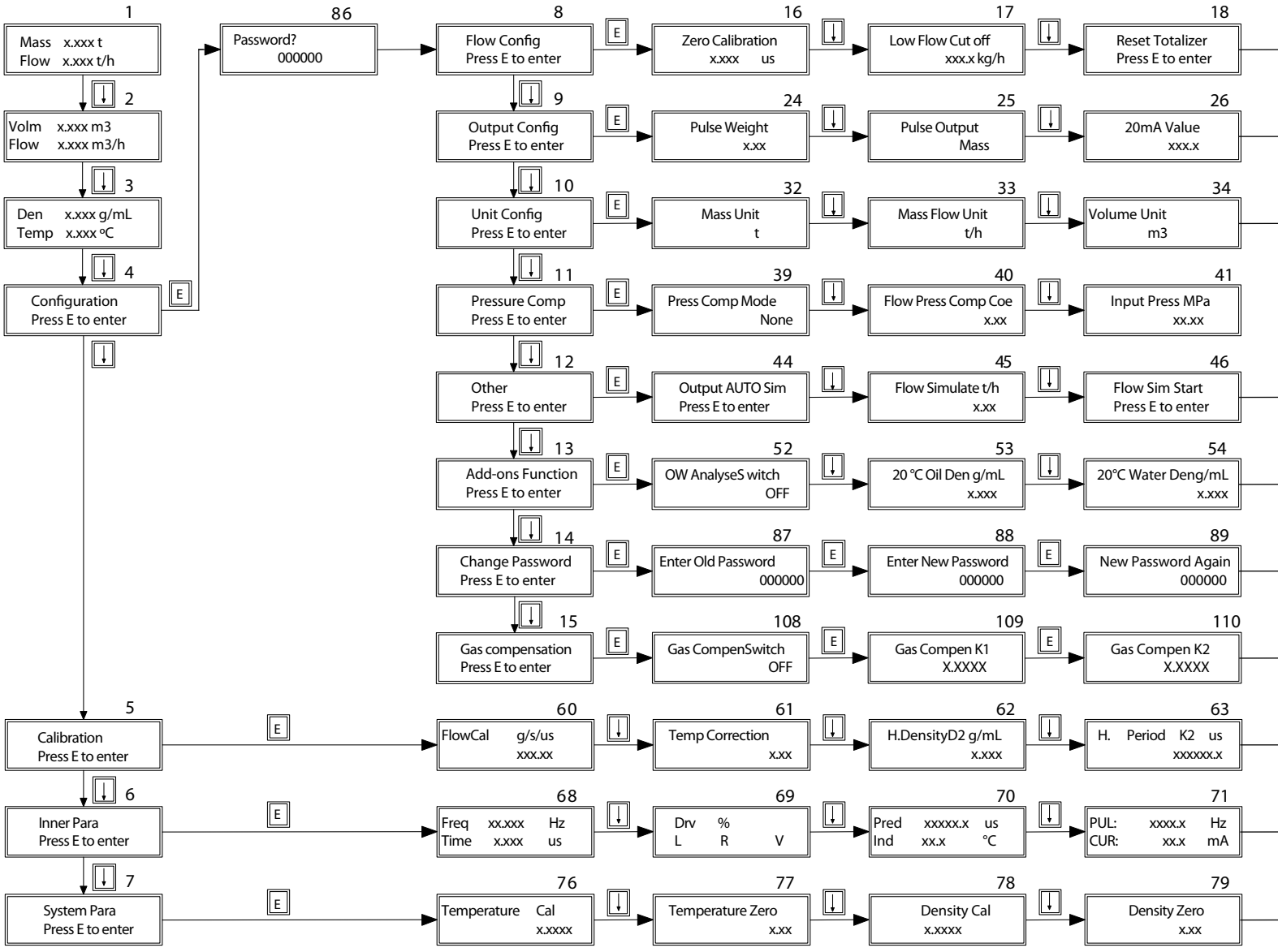
LED Indication

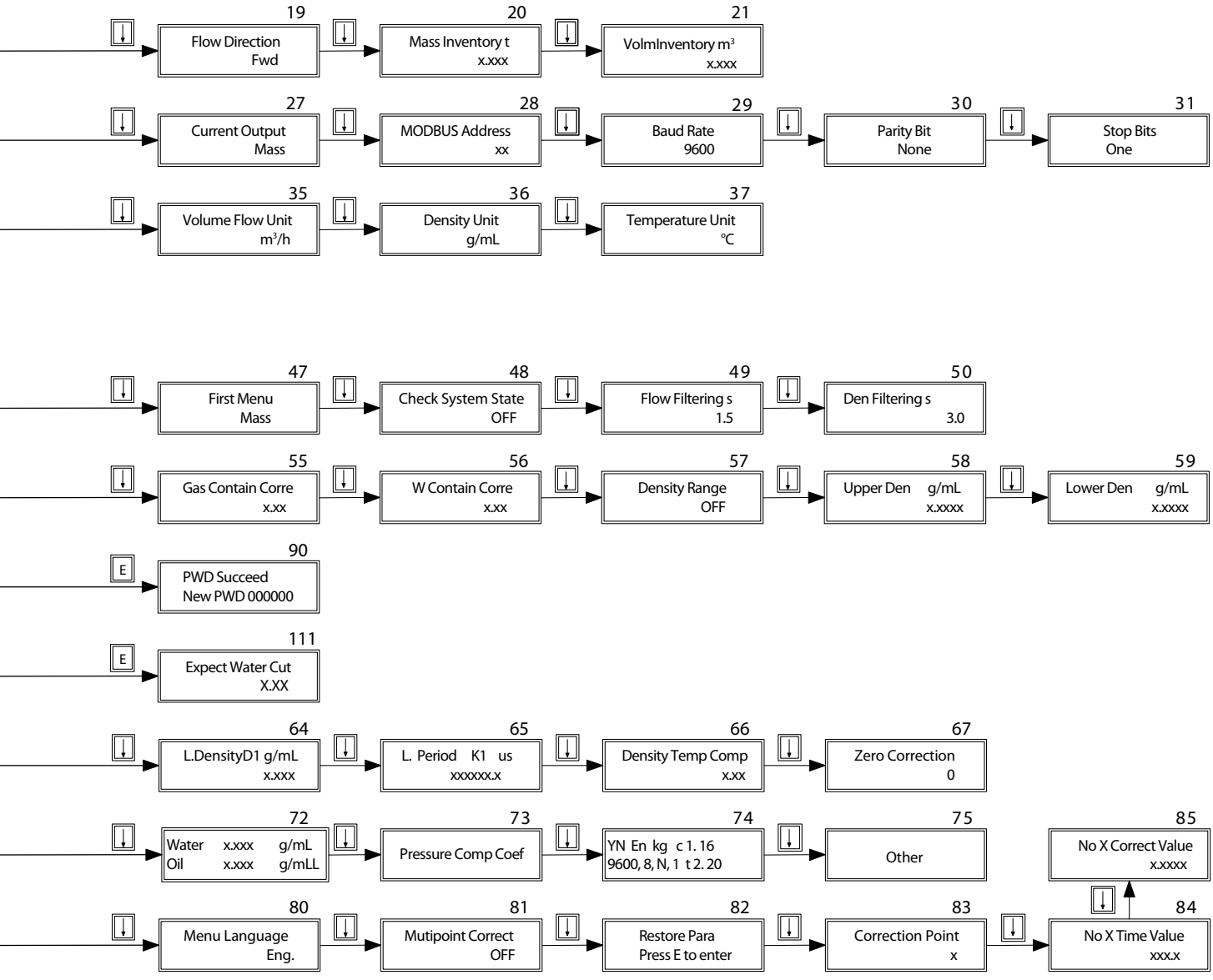
LED Condition	Working Condition
Green Light	Normal Operation
Red Light	Error

Note: For additional information refer to the detailed manual.

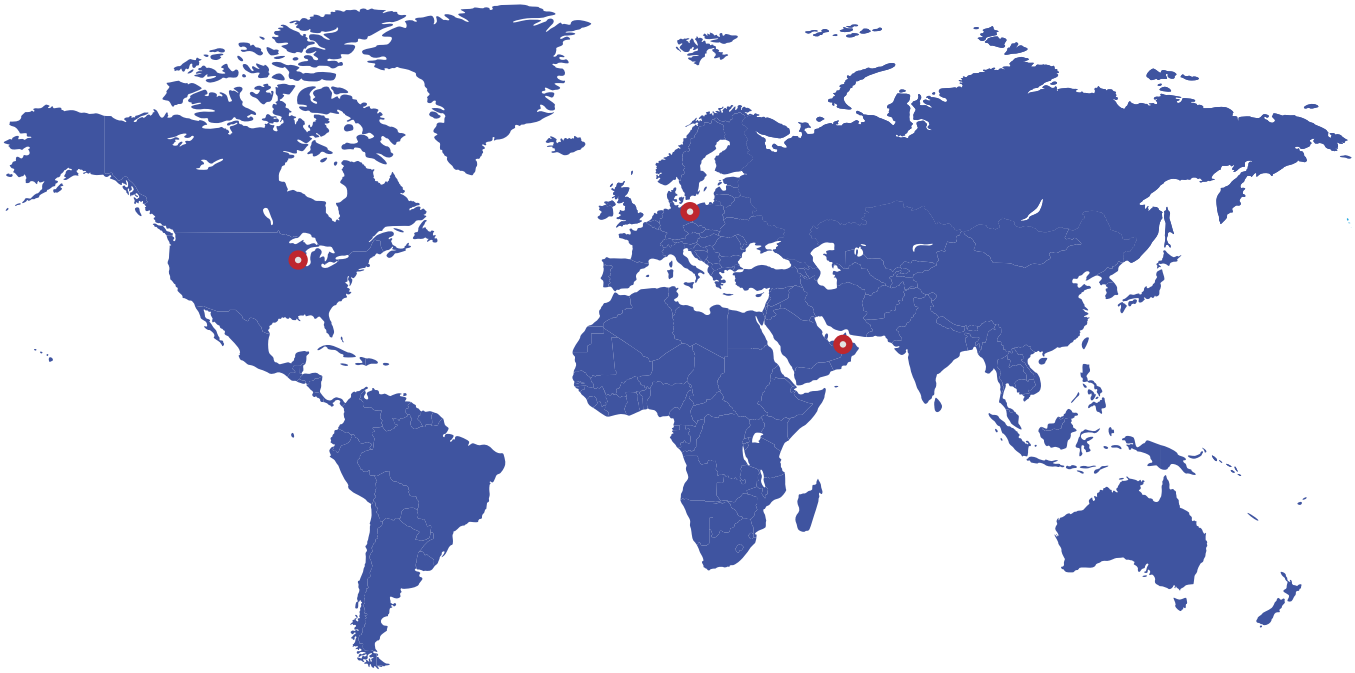
Quick Start Guide

15. Menu Tree




19
Flow Direction
Fwd
20
Mass Inventory t
x.xxx
21
VolmInventory m3
x.xxx
27
Current Output
Mass
28
MODBUS Address
xx
29
Baud Rate
9600
30
Parity Bit
None
31
Stop Bits
One
35
Volume Flow Unit
m3/h
36
Density Unit
g/mL
37
Temperature Unit
℃
47
First Menu
Mass
48
Check System State
OFF
49
Flow Filtering s
1.5
50
Den Filtering s
3.0
55
Gas Contain Corre
x.xx
56
W Contain Corre
x.xx
57
Density Range
OFF
58
Upper Den g/mL
x.xxxx
59
Lower Den g/mL
x.xxxx
E
90
PWD Succeed
New PWD 000000
E
111
Expect Water Cut
X.XX
64
L.DensityD1 g/mL
x.xxx
65
L. Period K1 us
xxxxxx.x
66
Density Temp Comp
x.xx
67
Zero Correction
0
72
Water x.xxx g/mL
Oil x.xxx g/mLL
73
Pressure Comp Coef
74
YN En kg c 1. 16
9600, 8, N, 1 t 2. 20
75
Other
85
No X Correct Value
x.xxxx
80
Menu Language
Eng.
81
Mutipoint Correct
OFF
82
Restore Para
Press E to enter
83
Correction Point
x
84
No X Time Value
xxx.x

TEKTROL
Technology Solutions



Tek-Trol LLC

796 Tek Drive Crystal Lake, IL
60014, USA
Sales: +1 847-857-6076

Tek-Trol Solutions BV

Florijnstraat 18, 4879 AH
Etten-Leur, Netherlands
Sales: +31 76-2031908

Tek-Trol Middle East FZE

SAIF Zone, Y1-067, PO BOX No.
21125, Sharjah, UAE
Sales: +971-6526-8344

Support: +1 847-857-6076 | Email: tektrol@tek-trol.com | www.tek-trol.com

Tek-Cor 1100A