

TKR SERIES

Quick Start Manual

The Display Rotates Ensuring Clear Visual Indication with Any Piping Configuration



Vertical

 Programming



Horizontal

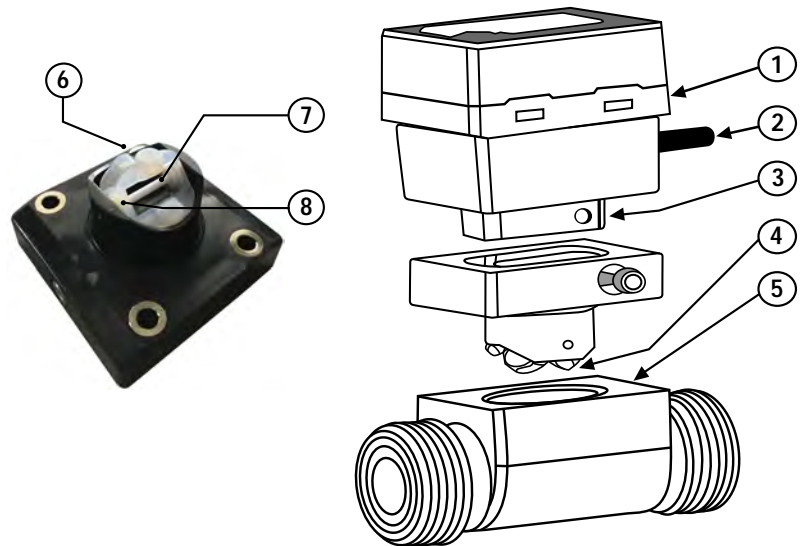


Read the User's Manual Carefully before Starting to Use the Unit.

Manufacturer reserves the right to implement changes without prior notice.

PARTS TKR SERIES

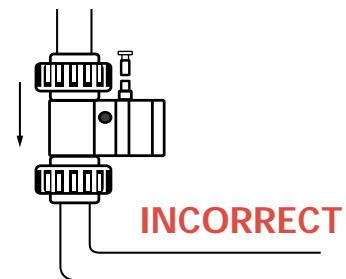
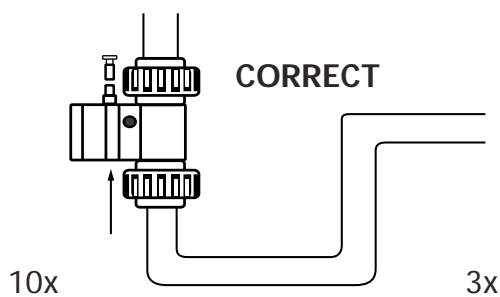
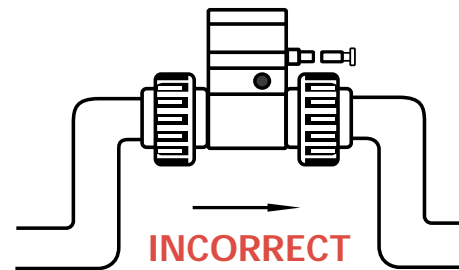
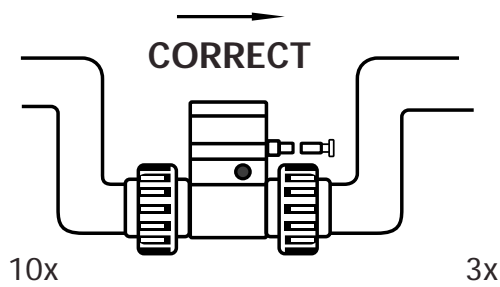
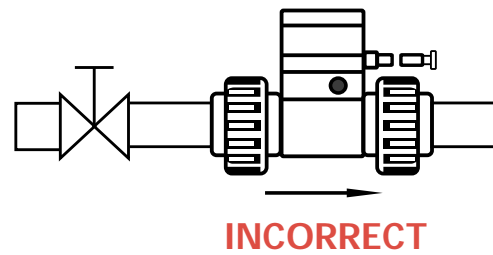
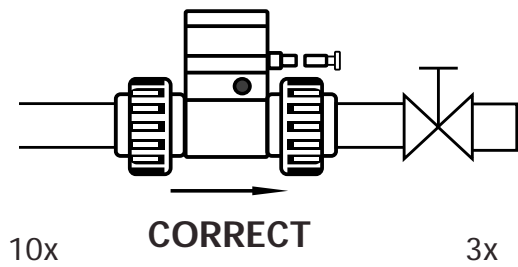
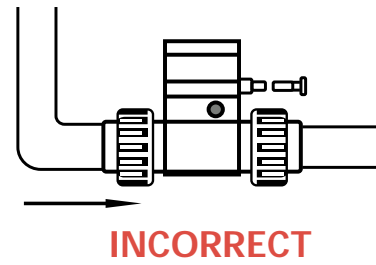
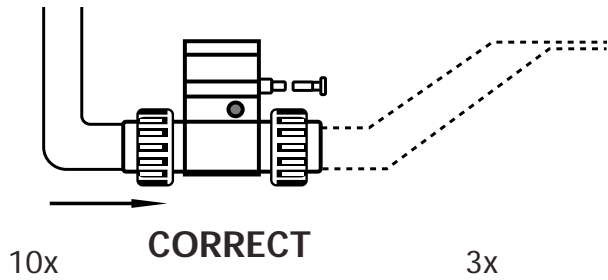
- 1. Flow Controller
- 2. Power Supply
- 3. Hall Sensor
- 4. Paddle Wheel
- 5. Body PVC | PP | PVDF
- 6. Tefzel Paddle
- 7. Rotor Pin
- 8. Bearing



SPECIFICATIONS

Fluid	Liquid - Viscosity Range <.5-20 centistokes
Accuracy	> .5% of F.S. @ 68°F 20°C Repeatability 0.5 of Full Scale
Max Flow Velocity	32.8 ft s ma 10 m/s max
Min Flow	0. 8 ft s min 0.3 m/s min
Operating press	150 psi
Turndown	33:1
Response time	Real Time
Material of Construction	Paddle : Tefzel Zirconium Ceramic Body PVC PP PVDF Shaft : Zirconium Ceramic Seals : FPM EPDM
Operating Temperature	PVC < 140°F 60°C PP < 176°F 80°C PVDF < 240°F 115°C 316 SST < 248°F 120°C
Electronics	122°F °C
Protection Class	NEMA 4X IP66
Approval	CE Rohs
Current Draw	60mA Max
Battery	10-30VDC

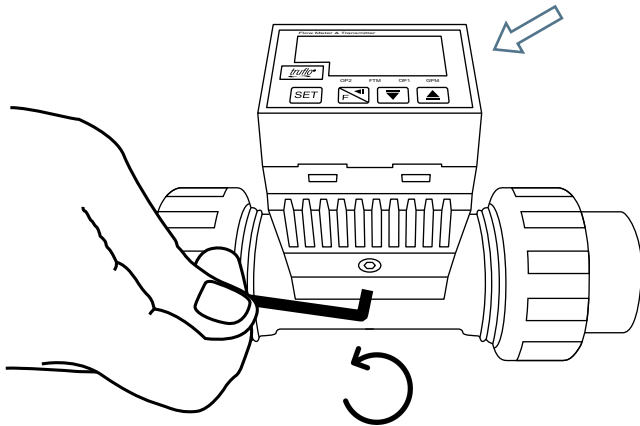
Installation Positions



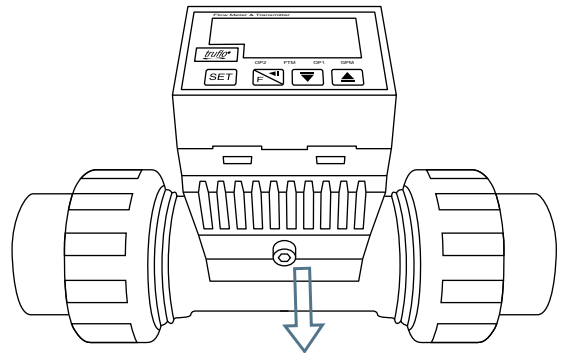
Please Ensure Full Pipe

Procedure to Rotate Display

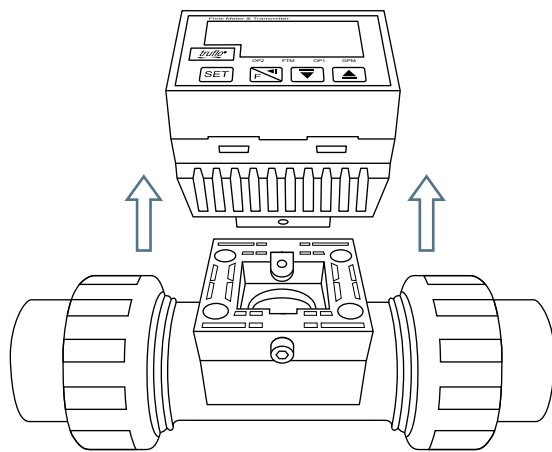
1 Using an allen key loosen the 2 screws located on either side of the display



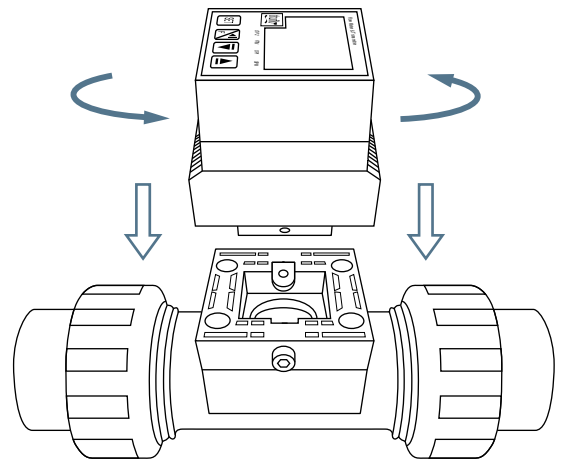
2 Pull the screws | Do not Remove



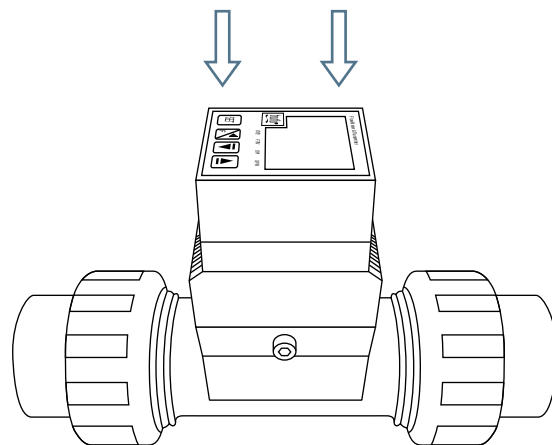
3 Lift the display



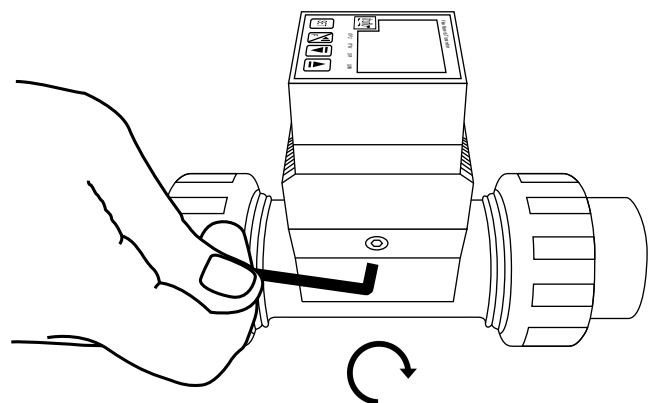
4 Rotate Display - 90 Degrees



5 Lower Display



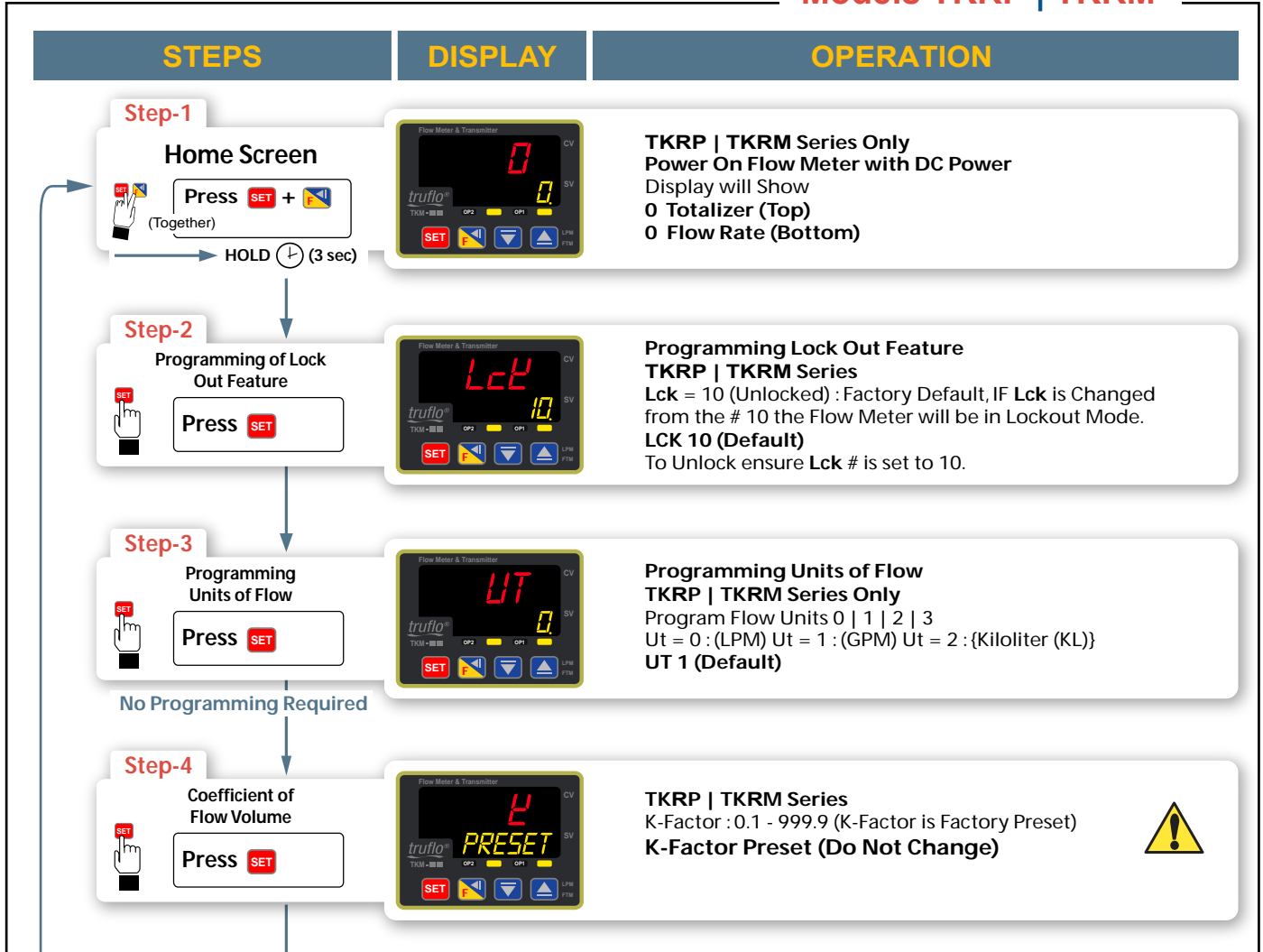
6 Tighten the Allen screws | Snug Tight
Do Not Over-Tighten



Programming Models TKTP | TKRM

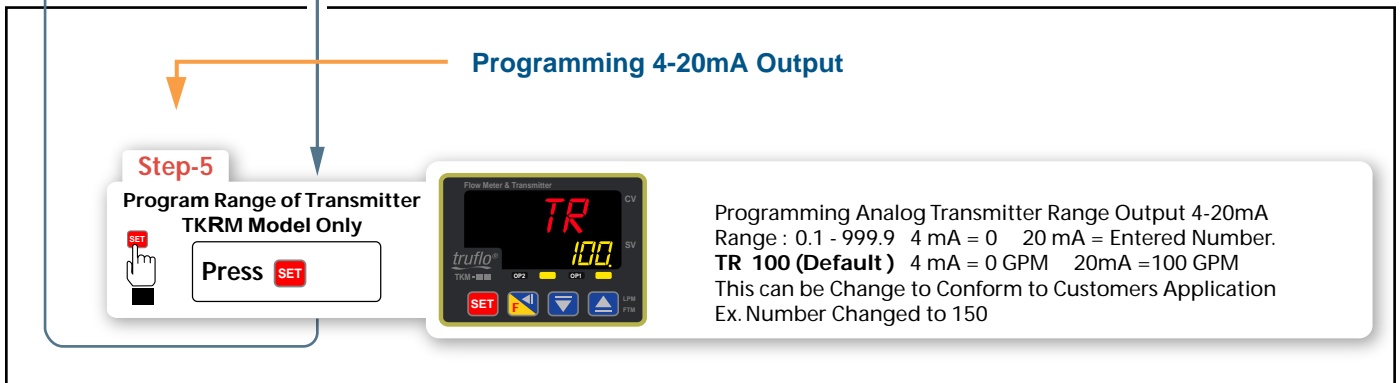
Please Follow Hand To Program

Models TKRP | TKRM



*Divide K Factor BY 3.8 TO CHANGE FROM GPM TO LPM

Model TKRM



Programming NPN Pulse Output Models TKRP | TKRM

Please Follow Hand To Program

Programming Pulse Output

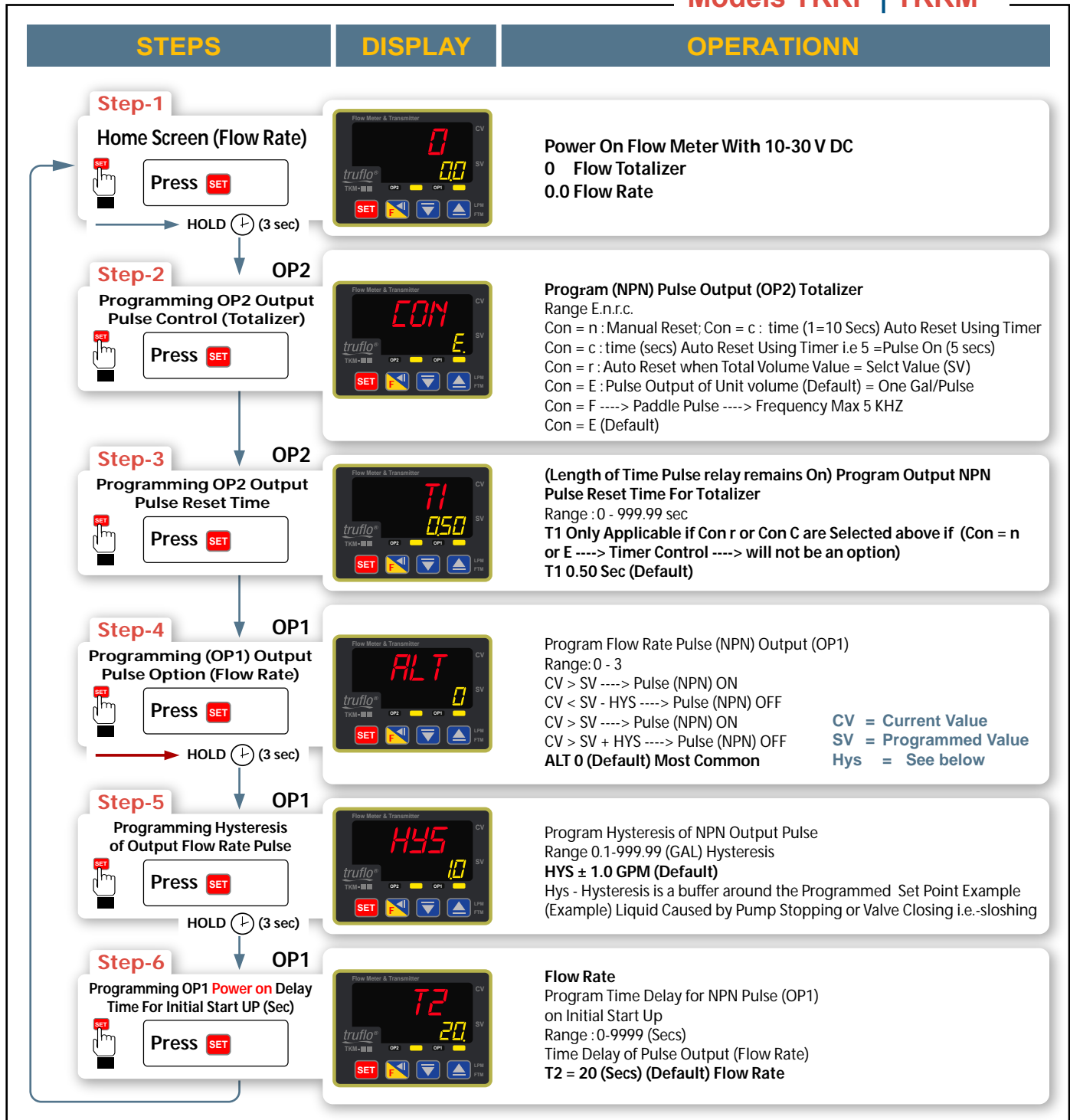
Models TKRP | TKRM

STEPS	DISPLAY	OPERATION
<p>Step-1</p>  <p>Press Then Press </p>		<p>TKRP TKRM Series Only CV Display Reads 0 SV Display Reads 0 0 Totalizer Default 0.0 Flow Rate Default</p> <p>CV = Current Value SV = Programmed Value</p>
<p>Step-2</p> <p>Programming Flow Rate Pulse Output</p>  <p>Press To Change Value</p>		<p>1000 — Default One Pulse Per Gallon Default</p> <p>CV Program Value of (Flow Rate) Pulse (NPN) Output Preset Value of Flow Rate Change to a Value that meets your Flow Rate Pulse Output</p> <p>SV $CV \geq SV \rightarrow$ Flow Rate Pulse Output ON $CV < SV \rightarrow$ Flow Rate Pulse Output OFF</p>
<p>Press SET to Save and Proceed to the Next Screen</p>		
<p>Step-3</p> <p>Programming Flow total Pulse Output</p>  <p>Press Then Press </p>		<p>2000 Factory Default One Pulse Per Gallon Default</p> <p>CV Program Value of Flow Totalizer Pulse (NPN) Output SV : Preset value of Flow Total</p> <p>SV $CV \geq SV \rightarrow$ Flow Rate output ON</p> <p>2000 Default this can be Changed to Desired Value Refer to Next Page Programming OP2 Output for Options for Totalizer Flow Totalizer Pulse (Step #2-Next Page)</p>
<p>Press SET Button to Save and Proceed to Next Screen</p>		
<p>Step-4</p> <p>Programming Flow total Pulse Output</p>  <p>Press </p>		<p>TKP TKM Series Only Return to Home Screen 0 Totalizer Default 0.0 Flow Rate Default</p>

Programming NPN Pulse Control Function Models TKRP | TKRM

Please Follow Hand To Program

Models TKRP | TKRM



CV = Current Value
 SV = Programmed Value
 Hys = See below

OP1 } Flow Rate Pulse Output
 OP2 } Flow Totalizer Pulse Output

NPN Pulse Output TKRP | TKRM

ALT NO.	DESCRIPTION
Alt = 0	CV > SV → ON: CV < SV - HyS → OFF
Alt = 1	CV < SV → ON: CV > SV + HyS → OFF
Alt = 2	SV + HyS > CV > SV - HyS → ON: CV > SV + HyS or CV < SV - HyS → OFF
Alt = 3	SV + HyS > CV > SV - HyS → OFF: CV > SV + HyS or CV < SV - HyS → ON

Hys = Hysteresis ACTS Like Buffer ± Around Pulse Output (Measured in GPM)

Current Value = Flow Rate SV = Selected Value = Programmed Value

K-Factors

Size	LPM	GPM
1/2"	124	471
3/4"	72	274
1"	45	171
1 1/2"	19	72
2"	10.3	39
3"	4.7	18
4"	2.1	8



Required when programming remote display or controller.

*Divide K Factor BY 3.8 TO CHANGE FROM GPM TO LPM

Model TKRS

Please Follow Hand To Program

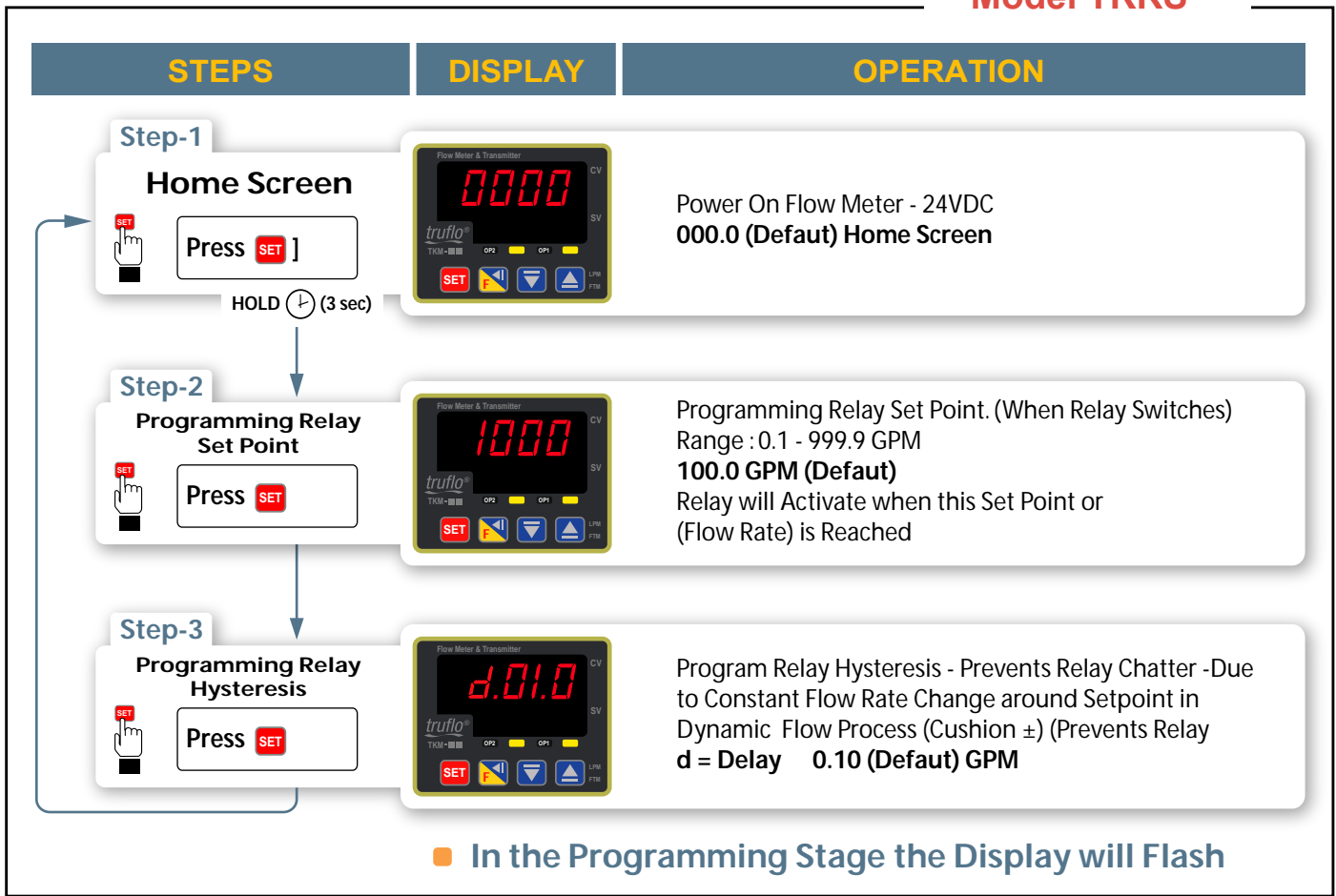
Model TKRS

STEPS	DISPLAY	OPERATIONN
<p>Step-1</p> <p>Home Screen</p> <p>Press SET + [SET] + F</p> <p>HOLD (3 sec)</p>		<p>Power Up Flow Meter with DC Power 000.0</p>
<p>Step-2</p> <p>Programing Lock Output</p> <p>Press SET</p>		<p>Programming Lock - Out Secure Feature Lk = 10 (Unlocked Status) - (Default) Changing Number will Lock Flow Meter LK.10 (Default) 10 = Unlocked If any other Number is entered the Programming will be restricted</p>
<p>Step-3</p> <p>No Programming Required K Value</p> <p>Press SET</p>		<p>K-Factor Range : 0.1-999.9 (Depends on Meter Size - Factory Pre- Programmed) Ut = 0 : (LPM) Ut = 1 : (GPM) Ut = 2 : {Kiloliter (KL)} UT 1 (Default) K Value Preset (Do Not Change) </p>
<p>Step-4</p> <p>Programming Communication Output Type</p> <p>Press SET</p>		<p>Programming NPN Pulse Output con.E - Output = 1 Pulse / Gal con.F - Paddle Pulse Output 5KHZ MAX-Remote Display con.E (Default)</p>
<p>Step-5</p> <p>Programming of Relay Set Point</p> <p>Press SET</p>		<p>Programming Relay Setpoint ON - OFF Options Select ALT.0 ALT.1 ALT.2 ALT.3 ALT.0 (Default) See Next Page for Relay Alarm Options</p>
<p>Step-6</p> <p>Programming Relay Time Delay</p> <p>Press SET</p>		<p>Programming Initial Start-Up Relay Time Delay Range : 0-99 sec Delay Time to Power on Alarm Output Relay T.20 (Default) (20 Seconds) Initial Start up of Flow Meter or Process (Allows for System Steady State before Relay Switch becomes Active).</p>

Programming Relay TKRS Model Only

Please Follow Hand To Program

Model TKRS



Programming Relay | TKS Series Only

ALT NO.	OPERATION
ALT = 0	$CV > SV \rightarrow$ Relay ON : $CV < SV - d \rightarrow$ Relay OFF
ALT = 1	$CV < SV \rightarrow$ Relay ON : $CV > SV + d \rightarrow$ Relay OFF
ALT = 2	$SV + d > CV > SV - d \rightarrow$ Relay ON: $CV > SV + d$ or $CV < SV - d \rightarrow$ Relay OFF
ALT = 3	$SV + d > CV > SV - d \rightarrow$ Relay OFF: $CV > SV + d$ or $CV < SV - d \rightarrow$ Relay ON
<p>CV = Current Display Value = Flow Rate SV = Selected Value = Programmed Value</p> <p>d = (GPM) Hysteresis Measured around Relay Set Point (± Measured in Gallons)</p>	

General Terms

K : Coefficient of Flow Volume **Note: Factory Pre-Set } Do Not Change**

tr : TKM Flow Range of Transmitter - Flow Rate → 4mA = 0 Flow Rate | 20mA = Max Flow Rate
4-20 mA | TKP - RS 485 Option

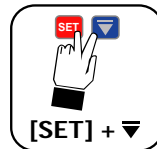
NPN : Frequency Pulse Output - NP

Con : Output Control of Flow Total OP2 Con = n → Manual Reset
Con = C - Time Reset (1=10 Secs) → Auto Reset, Con = r → Auto Reset,
Based on Volume (GPM) Con = E → Pulse Output of Unit Volume,
Con = F → Pulse Output of Paddle = 5 KHZ Max

Important



Reset the Flow Totalizer to Zero Press



for (3 sec)
Important

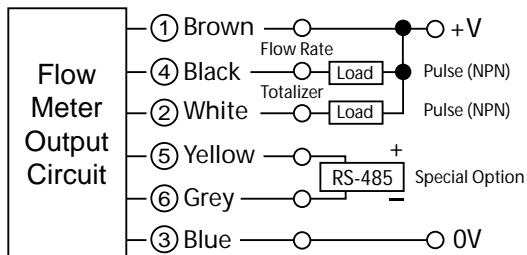
Standard Pipe Size

Pipe Size	ANSI ID Inches		DIN ID (mm)	Flow Rate } LPM USGPM	
	Sch 40	Sch 80		ft/s min	ft/s max
1/2" DN15	0.62	0.55	Ø20	3.5 1.0	120 32
3/4" D 20	0.82	0.74	Ø25	5 1.5	170 45
1" D 25	1.00	0.96	Ø32	9 2.5	300 79
1 1/2" D 40	1.40	1.50	Ø50	25 6.5	850 225
2" D 50	2.00	1.90	Ø63	40 10.5	1350 357
2 1/2"	2.50	2.30	Ø75	60 16	1850 357
3" D 80	3.10	2.90	Ø78	90 24	2800 739
4" D 100	4.00	3.80	Ø96.50	125 33	4350 1149

Pressure vs. Temperature psi | Water | Non-Shock

NOMINAL SIZE		PVC				PP				PVDF				
		30° F 70° F	71° F 105° F	106° F 120° F	121° F 140° F	- 5° F 85° F	86° F 120° F	121° F 140° F	141° F 175° F	- 5° F 70° F	71° F 105° F	106° F 140° F	141° F 175° F	176° F 210° F
INCHES	mm													
1/2-2	15-50	150	120	100	30	150	110	90	55	150	125	100	85	55
2-1/2	65	150	120	100	NA	150	95	70	40	150	125	100	85	55
3	80	150	120	100	NA	150	95	70	40	150	125	100	85	60
4	100	150	120	100	NA	150	95	70	40	150	125	100	85	60

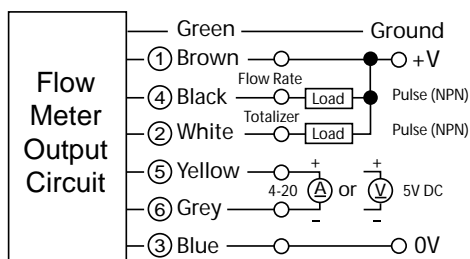
MODEL TKRP } FLOW RATE + FLOW TOTAL | NPN PULSE OUTPUT



Brown	10 - 30 VDC (+)	Yellow	(+) RS-485 (OPT)
Blue	0V (-)	Grey	(-) RS-485 1 OPT RS485 is a Special Order Item
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output (NPN)

- **Black Wire } Flow Rate Pulse Output or Flow Total Pulse Output**
Yellow & Grey Wire for Models with RS485 Option Only

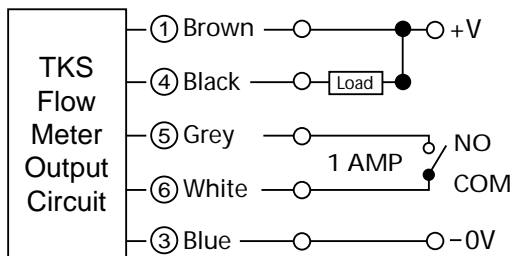
MODEL TKRM } 4-20mA or 0-5V DC FLOW RATE + FLOW TOTAL | PULSE OUTPUT



Brown	10 - 30 VDC (+)	Yellow	+ (4-20mA) or (0-5V)
Blue	0V (-)	Grey	Totalizer Output NPN (4-20mA or 0 - 5V DC) (4-20mA Default -0-5VDC Option-Special Order)
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output NPN

- **Black Wire } Flow Rate Pulse Output or Flow Total Pulse Output**

MODEL TKRS } FLOW RATE | RELAY | PULSE OUTPUT



Brown	10 - 30 VDC (+)	White	COM
Blue	0V (-)	Grey	NO
Black	Flow Rate Pulse Output (NPN)		1 Amp

- **Black Wire } Pulse Output | One Pulse = 1 GPM**



TKRP - Yellow & Grey wires with RS - 485 Option
Only Current output (4 - 20mA) Ω120 max.
Voltage output (0 - 5V) : 10KΩ min.
DC Power Only