

# Quick Start Manual

**(Industry's Toughest Built Paddle Wheel Flow Meter)**

**No Calibration Required**

**Plug & Play**



**No K-Factor Programming**

## **TK SERIES**



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

**All TK Series Flow Meters are Factory Calibrated and do not require K-flow Factor Programming.**

Manufacturer reserves the right to implement changes without prior notice.

# Product Selection

## EXAMPLE :

TKP — 25 — A — PVC  
(1) (2) (3) (4)



## SERIES

- TKM** = Paddle Wheel Flow Meter with Transmitter  
4 -20mA + (Flow Rate NPN Pulse + Totalizer NPN Pulse)
- TKP** = Paddle Wheel Flow Meter & Flow Totalizer  
+ ( Flow Rate NPN Pulse + Flow Totalizer NPN Pulse)
- TKS** = Paddle Wheel Flow Meter with Relay Output  
+ ( Flow Rate NPN Pulse)

## PIPE SIZE

**15** = (½")    **20** = (¾")  
**25** = (1")    **40** = (1 ½")  
**50** = (2")    **80** = (3")    **100** = (4")

## COMMUNICATION OR TRANSMITTER

- Non** = Without Communication
- RS** = TKP Series with RS-485 MODBUS Selectable
- A** = TKM Series with Transmitter (4 -20mA) + NPN Pulse Output

## BODY MATERIAL

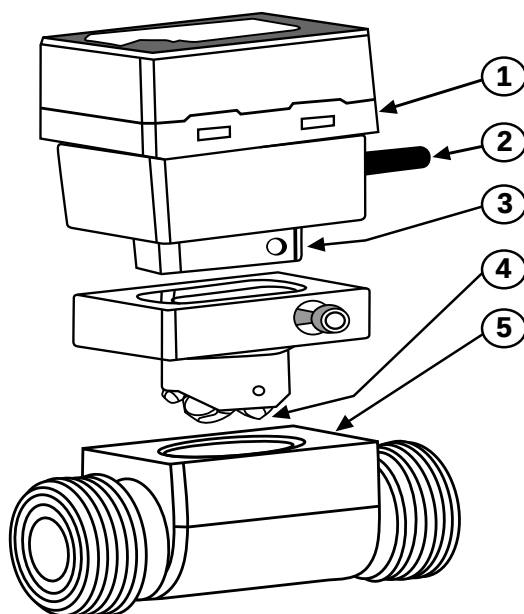
- PVC** = PVC
- PP** = Polypropylene
- ST** = 316 SST ( Special Order)

## CONNECTION METHOD

- STD** = Wire Lead (3m) - Other Lengths Available  
M12 CONNECTOR-

# Parts TK Series

- ① Flow Controller
- ② Lead Wire
- ③ Hall Sensor
- ④ Paddle Wheel
- ⑤ Body (PVC, PP, 316 SST)



## General Data

| SPECIFICATION            | DESCRIPTION                                                                                                 |
|--------------------------|-------------------------------------------------------------------------------------------------------------|
| Fluid                    | Water or Liquid Chemicals - Viscosity Range: 5-20 centistokes                                               |
| Accuracy                 | > $\pm 1.0\%$ of F.S. @ 20°C (68°F) - Repeatability $\pm .5\%$ of Full Scale                                |
| Max Flow Velocity        | 10 m/s max - (32.8 ft/s max) (8 ft/s is recommended max Velocity for Plastic Piping)                        |
| Min Flow                 | 0.3 m/s min. - (.98 ft/s min)                                                                               |
| Operating press          | 150 psi      10 BAR                                                                                         |
| Turndown                 | 33:1                                                                                                        |
| Response time            | Real Time                                                                                                   |
| Material of Construction | <b>Paddle</b> : Tefzel <b>Body</b> : PVC/PP/316<br><b>Shaft</b> : Zirconium Ceramic <b>Seals</b> : EPDM/FPM |
| Operating Temperature    | PVC < 60°C (140°F) PP < 80°C (176°F) 316 SST < 120°C (248°F)                                                |
| Electronics              | -13 - 122°F ( -25 - 50°C)                                                                                   |
| Protection Class         | IP66 NEMA 4X                                                                                                |
| Approval                 | CE    Rohs                                                                                                  |
| Operating Voltage        | 10 - 30VDC                                                                                                  |

# Programming TKP/TKM Model

Please Follow  Hand To Program

TKP/TKM Series Only

TKP/TKM Series Only

24V DC POWER ONLY

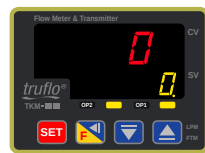
DISPLAY

DESCRIPTION

Step-1

Home Screen

Press **SET** +   
(Together) **[SET]** + **F**  
→ HOLD (3 sec)



TKP/TKM Series Only  
Power On Flow Meter with DC Power  
Display will Show  
**0 Totalizer (Top)**  
**0 Flow Rate (Bottom)**

Step-2

Programming of Lock Out Feature

Press **SET** **[SET]**



Programming Lock Out Feature  
TKP/TKM Series  
**Lck** = 10 (Unlocked) : Factory Default, IF **Lck** is Changed from the # 10 the Flow Meter will be in Lockout Mode.  
**LCK 10 (Default)**  
To Unlock ensure **Lck** # is set to 10.

Step-3

Programming Units of Flow

Press **SET** **[SET]**

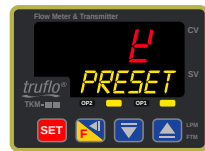


Programming Units of Flow  
TKP/TKM Series Only  
Program Flow Units 0,1,2,3  
Ut = 0 : (LPM) Ut = 1 : (GPM) Ut = 2 : {Kiloliter (KL)}  
**UT 1 (Default)**

No Programming Required  
Step-4

Coefficient of Flow Volume

Press **SET** **[SET]**



TKP/TKM Series  
K-Factor : 0.1 - 999.9 (K-Factor is Factory Preset)  
**K-Factor Preset (Do Not Change)**  
\*Divide K Factor BY 3.8 TO CHANGE FROM GPM TO LPM



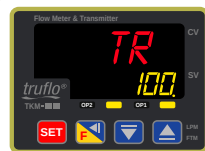
Step - 5 For Programming 4-20mA Analog Output

TKM (4-20mA) and TKP with (RS 485 Option) Only

Step-5

Program Range of Transmitter  
(TKM Series Only)

Press **SET** **[SET]**



TKM + TKP (RS 485 Only)  
Programming Analog Transmitter Range Output 4-20mA  
Range : 0.1 - 999.9 4 mA = 0 20 mA = Entered Number.  
**TR 100 (Default)** 4 mA = 0 GPM 20mA = 100 GPM  
This can be Change to Conform to Customers Application  
Ex. Number Changed to 150

# Programming NPN Pulse Output (TKP / TKM Series)

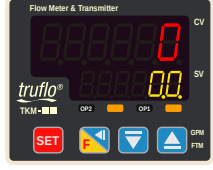
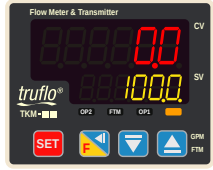
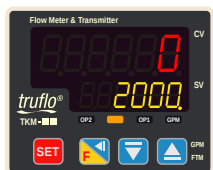
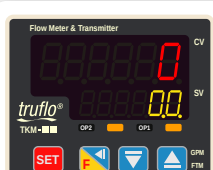
Please Follow  Hand To Program

**Important**

**Steps Only Necessary If NPN Pulse Output is Required**

**TKP/TKM Series Only**

TKP/TKM Series Only

| FUNCTION OF METER                                                                                                                                                                                                                                                                                                                                                           | DISPLAY                                                                             | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step-1</b><br><b>Programming Flow Meter</b><br><br>Press  Then Press <b>SET</b> SET<br>Press  then Press Set & Adjust |    | <b>TKP/TKM Series Only</b><br><b>CV</b> Display Reads 0<br><b>SV</b> Display Reads 0<br><b>0</b> Totalizer Default<br><b>0.0</b> Flow Rate Default<br><br><b>CV = Current Value</b><br><b>SV = Programmed Value</b>                                                                                                                                                                            |
| <b>Step-2</b><br><b>Programming Flow Rate Pulse Output</b><br><br>Press  <b>To Change Value</b>                                                                                                       |   | <b>TKP/TKM Series Only (Pulse ON-OFF)</b><br><b>CV</b> Program Value of (Flow Rate) Pulse (NPN) Output<br>Preset Value of Flow Rate<br>Change to a Value that meets your Flow Rate Pulse Output<br><b>SV</b> $CV \geq SV \rightarrow$ Flow Rate Pulse Output ON<br>$CV < SV \rightarrow$ Flow Rate Pulse Output OFF<br><b>1000 Default</b><br>(One Pulse Per Gallon Default) (Flow Rate) Pulse |
| Press SET to Move to Save and Move to Next Screen                                                                                                                                                                                                                                                                                                                           |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Step-3</b><br><b>Programming Flow total Pulse Output</b><br><br>Press  Then Press <b>SET</b> SET                                                                                                   |  | <b>TKP/TKM Series Only</b><br><b>CV</b> Program Value of Flow Totalizer Pulse (NPN) Output<br>SV : Preset value of Flow Total<br><b>SV</b> $CV \geq SV \rightarrow$ Flow Rate output ON<br><b>2000 Default</b> 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)                               |
| Press SET Button to Move to Save Add Move to Next Screen                                                                                                                                                                                                                                                                                                                    |                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Step-4</b><br><b>Programming Flow total Pulse Output</b><br><br>Press                                                                                                                              |  | <b>TKP/TKM Series Only</b><br><b>Return to Home Screen</b><br><b>0</b> Totalizer Default<br><b>0.0</b> Flow Rate Default                                                                                                                                                                                                                                                                       |

- Op1 & Op2 = 150mA Max Switching Current + Consumption is 60mA Max.
- CV = Current Value = Current Flow Rate on Display
- SV = Selected Value (Programmed Value Customer Entered)
- NPN Pulse is a Relay Transistor

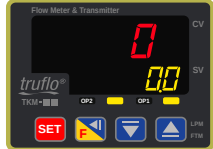
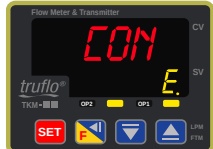
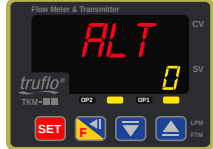
# Programming NPN Pulse Control Function (TKP / TKM Model Only)

Please Follow  Hand To Program

OP1 = NPN Pulse Output (Flow Rate)  
OP2 = NPN Pulse Output (Flow Totalizer)

TKP/TKM Series Only

TKP/TKM Series Only

| FUNCTION OF METER                                                                                                                                                                                                                                                                                             | DISPLAY                                                                             | DESCRIPTION                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step-1</b><br><b>Home Screen (Flow Rate)</b><br> Press <b>SET</b> [SET]<br> <b>HOLD</b> (3 sec)                                          |    | <b>Power On Flow Meter With 10-30 V DC</b><br><b>0 Flow Totalizer</b><br><b>0.0 Flow Rate</b>                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Step-2</b><br><b>Programming Output Pulse Control (Totalizer)</b><br> Press <b>SET</b> [SET]                                                                                                                              |    | <b>TKP/TKM Series Only</b><br><b>Program (NPN) Pulse Output Totalizer</b><br>Range E.n.r.c.<br>Con = n : Manual Reset; Con = c : time (1=10 Secs) Auto Reset Using Timer<br>Con = c : time (secs) Auto Reset Using Timer i.e 5 =Pulse On (5 secs)<br>Con = r : Auto Reset when Total Volume Value = Selct Value (SV)<br>Con = E : Pulse Output of Unit volume (Default) = One Gal/Pulse<br>Con = F ----> Paddle Pulse ----> Frequency Max 5 KHZ<br>Con = E (Default) |
| <b>Step-3</b><br><b>Programming Output Pulse Reset Time</b><br> Press <b>SET</b> [SET]                                                                                                                                     |  | <b>TKP/TKM Series Only (Length of Time Pulse relay remains On)</b><br><b>Program Output NPN Pulse Reset Time For Totalizer</b><br>Range : 0 - 999.99 sec<br><b>T1 Only Applicable if Con r or Con C are Selected above if (Con = n or E ----&gt; Timer Control ----&gt; will not be an option)</b><br><b>T1 0.50 Sec (Default)</b>                                                                                                                                   |
| <b>Step-4</b> <b>OP1</b><br><b>Programming (OP1) Output Pulse Option (Flow Rate)</b><br> Press <b>SET</b> [SET]<br> <b>HOLD</b> (3 sec) |  | <b>TKP/TKM Series Only</b><br><b>Program Flow Rate Pulse (NPN) Output (OP1)</b><br>Range: 0 - 3<br>CV > SV ----> Pulse (NPN) ON<br>CV < SV - HYS ----> Pulse (NPN) OFF<br>CV > SV ----> Pulse (NPN) ON<br>CV > SV + HYS ----> Pulse (NPN) OFF<br><b>ALT 0 (Default) Most Common</b>                                                                                                                                                                                  |
| <b>Step-5</b> <b>OP1</b><br><b>Programming Hysteresis of Output Flow Rate Pulse</b><br> Press <b>SET</b> [SET]<br> <b>HOLD</b> (3 sec)  |  | <b>TKP/TKM Series Only</b><br><b>Program Hysteresis of NPN Output Pulse</b><br>Range 0.1-999.99 (GAL) Hysteresis<br><b>HYS ± 1.0 GPM (Default)</b><br>Hys - Hysteresis is a buffer around the Programmed Set Point Example<br>(Example) Liquid Caused by Pump Stopping or Valve Closing i.e.-sloshing                                                                                                                                                                |
| <b>Step-6</b> <b>OP1</b><br><b>Programming OP1 Power on Delay Time For Initial Start UP (Sec)</b><br> Press <b>SET</b> [SET]                                                                                               |  | <b>TKP/TKM Series Only - Flow Rate</b><br><b>Program Time Delay for NPN Pulse (OP1) on Initial Start Up</b><br>Range : 0-9999 (Secs)<br>Time Delay of Pulse Output (Flow Rate)<br><b>T2 = 20 (Secs) (Default) Flow Rate</b>                                                                                                                                                                                                                                          |

OP1 = NPN Pulse Output (Flow Rate)  
OP2 = NPN Pulse Output (Flow Totalizer)

CV = Current Value SV = Programmed Value



## Mode of NPN Pulse Output TKP/TKM Models

| ALT NO. | DESCRIPTION                                                                                    |
|---------|------------------------------------------------------------------------------------------------|
| ALt = 0 | $CV > SV \rightarrow ON$ ; $CV < SV - HyS \rightarrow OFF$                                     |
| ALt = 1 | $CV < SV \rightarrow ON$ ; $CV > SV + HyS \rightarrow OFF$                                     |
| ALt = 2 | $SV + HyS > CV > SV - HyS \rightarrow ON$ ; $CV > SV + HyS$ or $CV < SV - HyS \rightarrow OFF$ |
| ALt = 3 | $SV + HyS > CV > SV - HyS \rightarrow OFF$ ; $CV > SV + HyS$ or $CV < SV - HyS \rightarrow ON$ |

Current Value = Flow Rate      SV = Selected Value = Programmed Value (Customer)

Hys = Hysteresis ACTS Like Buffer  $\pm$  Around Pulse Output (Measured in GPM)

## K-Factors for TK Series Flow Meters (All Models)

| Size   | LPM  | GPM   |
|--------|------|-------|
| 1/2"   | 124  | 471.2 |
| 3/4"   | 72   | 273.6 |
| 1"     | 54   | 205.2 |
| 1 1/2" | 19   | 72.2  |
| 2"     | 10.3 | 39.2  |
| 3"     | 4.7  | 17.8  |
| 4"     | 2.1  | 7.9   |



Required when programming remote display or controller.

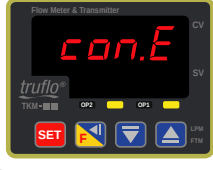
**K-Factor Pre Programmed by Factory - No Flow Meter  
Programming of a K-Factor is required.**

# Programming TKS Model Only

Please Follow  Hand To Program

TKS Series Only

TKS Series Only

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



## Programming TKS Model Only

### Program Relay Set Point And Relay Delay (Prevents Relay Chatter)

Please Follow  Hand To Program

TKS Series Only

TKS Series Only

| FUNCTION OF METER                                                                                                                                                  | DISPLAY                                                                             | DESCRIPTION                                                                                                                                                                                    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Step-1</b><br><b>Home Screen</b><br> Press <b>SET</b> [SET]<br>HOLD (3 sec)    |    | Power On Flow Meter - 24VDC<br><b>000.0 (Default) Home Screen</b>                                                                                                                              |
| <b>Step-2</b><br><b>Programming Relay Set Point</b><br> Press <b>SET</b> [SET]    |   | Programming Relay Set Point. (When Relay Switches)<br>Range : 0.1 - 999.9 GPM<br><b>100.0 GPM (Default)</b><br>Relay will Activate when this Set Point or (Flow Rate) is Reached               |
| <b>Step-3</b><br><b>Programming Relay Hysteresis</b><br> Press <b>SET</b> [SET] |  | Program Relay Hysteresis - Prevents Relay Chatter -Due to Constant Flow Rate Change around Setpoint in Dynamic Flow Process (Cushion ±) (Prevents Relay<br><b>d = Delay 0.10 (Default) GPM</b> |

■ In the Programming Stage, the Display will Flash

### Relay ON - OFF Options For TKS Series Only (Not for TKP/TKM Series)

TKS Series Only

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

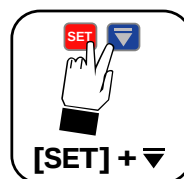
## General Terms

- 1) **K** : Coefficient of Flow Volume, **Note : Factory Set Do Not Change**
- 2) **tr** : TKM Range of Transmitter - Flow Rate 4-20 mA → 4mA = 0      20mA = Max Range  
TKP - RS 485 Option
- 3) **NPN** : Transistor Relay - No Moving Parts
- 5) **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



**Totalizer Reset TKP/TKM**  
**To Reset the Flow Totalizer to Zero Press**

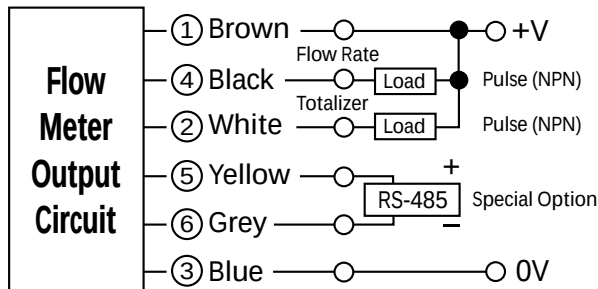


for  (3 sec)  
**Important**

## Standard Pipe Size

| Pipe Size (O.D.) | ANSI (ID) (Inches) |          | DIN (ID) (mm) | Flow Rate (LPM) / USGPM |             |
|------------------|--------------------|----------|---------------|-------------------------|-------------|
|                  | Sch (40)           | Sch (80) |               | 0.3m/s min.             | 10m/s max.  |
| DN15 (1/2")      | 0.62               | 0.55     | Ø20           | 3.5 / 1.0               | 120 / 32    |
| DN20 (3/4")      | 0.82               | 0.74     | Ø25           | 5.0 / 1.5               | 170 / 45    |
| DN25 (1")        | 1.00               | 0.96     | Ø32           | 9.0 / 2.5               | 300 / 79    |
| DN40 (1 1/2")    | 1.40               | 1.50     | Ø50           | 25.0 / 6.5              | 850 / 225   |
| DN50 (2")        | 2.00               | 1.90     | Ø63           | 40.0 / 10.5             | 1350 / 357  |
| 2 1/2            | 2.50               | 2.30     | Ø75           | 60.0 / 16               | 1850 / 357  |
| DN80 (3")        | 3.10               | 2.90     | Ø78           | 90.0 / 24               | 2800 / 739  |
| DN100 (4")       | 4.00               | 3.80     | Ø96.50        | 125.0 / 33              | 4350 / 1149 |

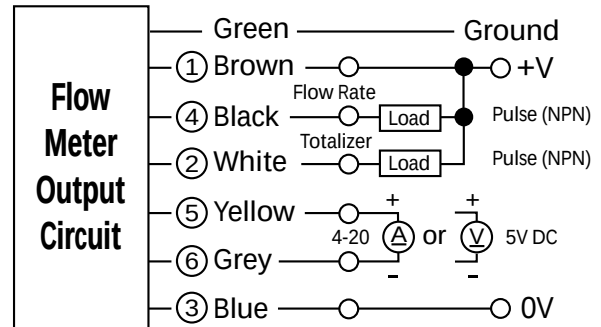
**MODEL TKP**  
**FLOW RATE + FLOW TOTALIZER + NPN PULSE**



- **Yellow & Grey with RS485 (Only)**  
Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output

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

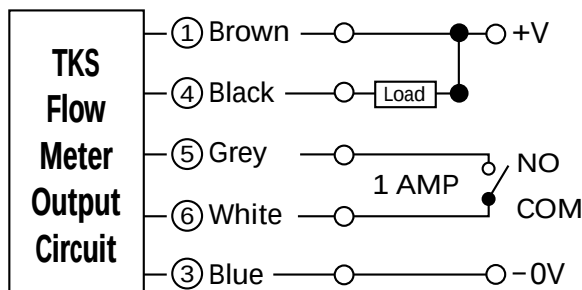
**MODEL TKM(4-20mA Or 0-5V DC + NPN Pulse)**  
**FLOW RATE + FLOW TOTALIZER + PULSE**



- **Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output**

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

**MODEL TKS NPN**  
**(FLOW RATE - RELAY + PULSE)**



- **Black Wire is a Unit Volume NPN Pulse Output-1 pulse for every gallon**

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



**NOTES**

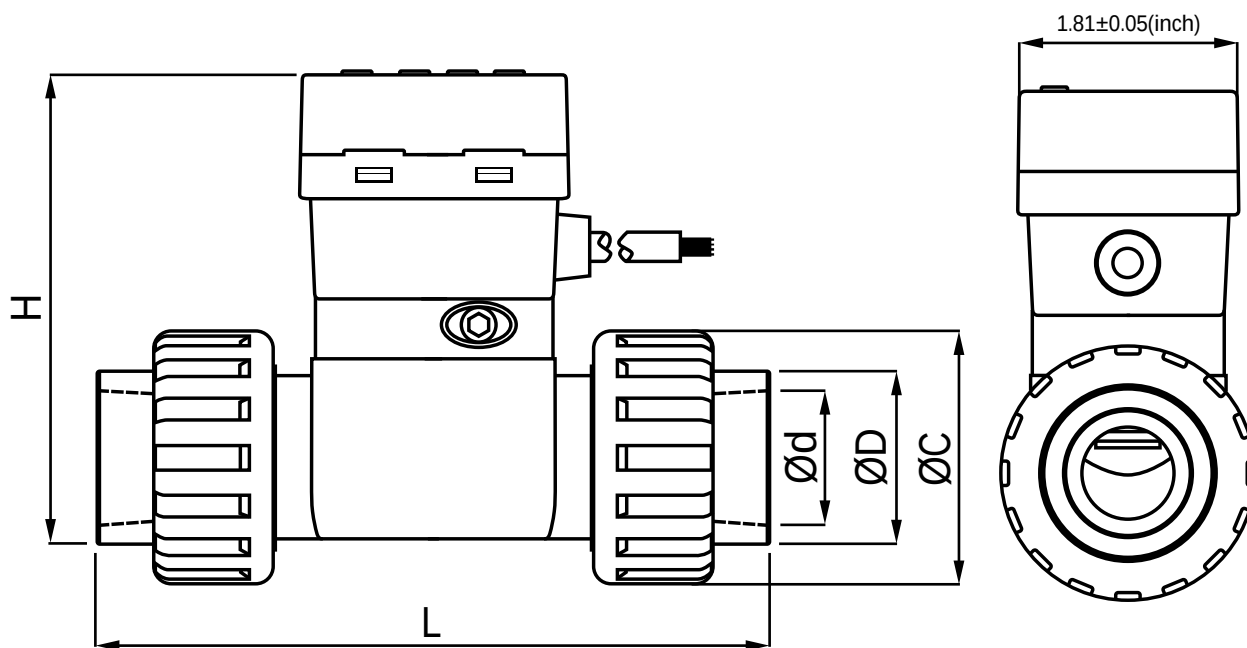
**TKP - Yellow & Grey wires with RS - 485 Option Only**

**Current output (4 - 20mA) : 120  $\Omega$  max.  
Voltage output (0 - 5V) : 10K  $\Omega$  min.**

**NOTE - DC Power Only**

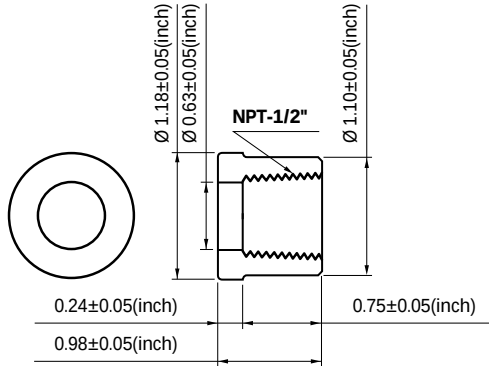
**TKM Series (0-5VDC) Optional  
4-20mA is Standard**

## Dimensions

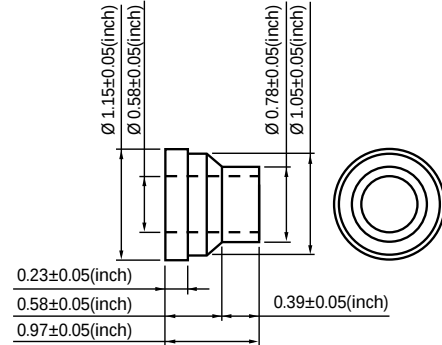


| Pipe Size        | H (inch)        | L (inch)        | $\varnothing d$ (inch) | $\varnothing D$ (inch) | $\varnothing C$ (inch) |
|------------------|-----------------|-----------------|------------------------|------------------------|------------------------|
| (1/2") DN (15)   | $4.09 \pm 0.05$ | $5.48 \pm 0.05$ | $0.84 \pm 0.05$        | $1.07 \pm 0.05$        | $1.61 \pm 0.05$        |
| (3/4") DN (20)   | $4.17 \pm 0.05$ | $6.12 \pm 0.05$ | $1.05 \pm 0.05$        | $1.36 \pm 0.05$        | $2.08 \pm 0.05$        |
| (1") DN (25)     | $4.30 \pm 0.05$ | $6.76 \pm 0.05$ | $1.32 \pm 0.05$        | $1.68 \pm 0.05$        | $2.36 \pm 0.05$        |
| (1-1/2") DN (40) | $5.02 \pm 0.05$ | $7.66 \pm 0.05$ | $1.91 \pm 0.05$        | $2.33 \pm 0.05$        | $3.26 \pm 0.05$        |
| (2") DN (50)     | $5.56 \pm 0.05$ | $8.39 \pm 0.05$ | $2.38 \pm 0.05$        | $2.86 \pm 0.05$        | $4.33 \pm 0.05$        |

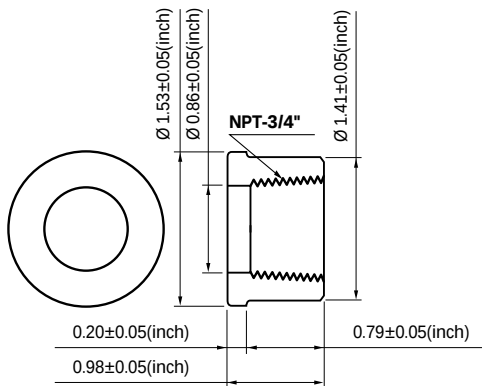
**½" DN15-UNION-NPT-PP**



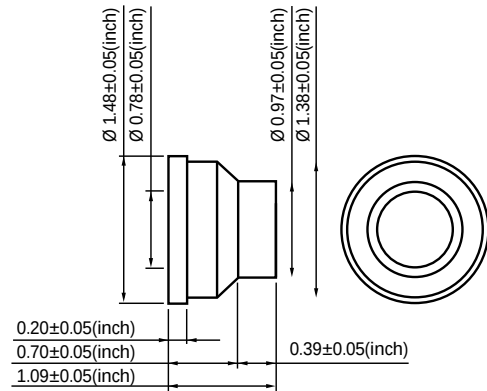
**½" DN15-UNION-NPT-PP SDR 11 IR FUSION**



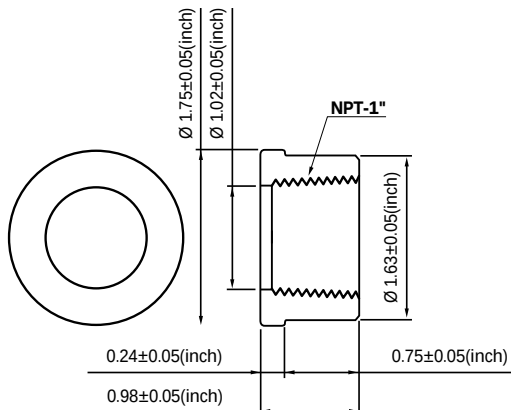
**¾" DN20-UNION-NPT-PP**



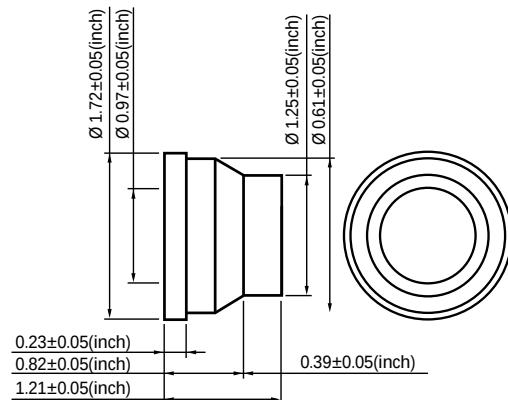
**¾" DN20-UNION-NPT-PP SDR 11 IR FUSION**



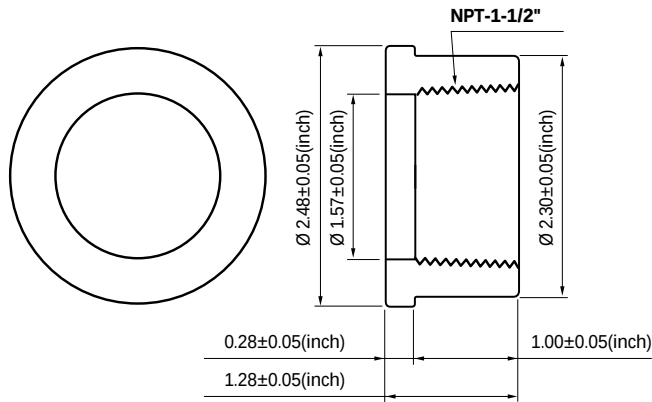
**1" DN25-UNION-NPT-PP**



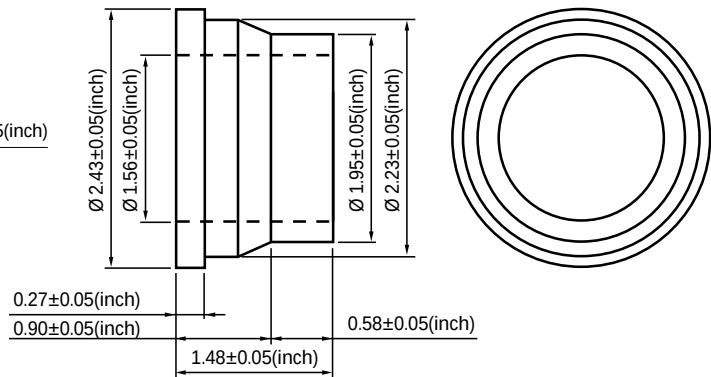
**1" DN25-UNION-NPT-PP SDR 11 IR FUSION**



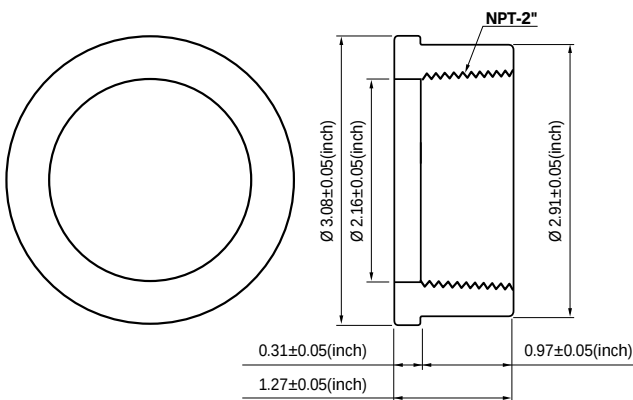
### 1½" DN40-UNION-NPT-PP



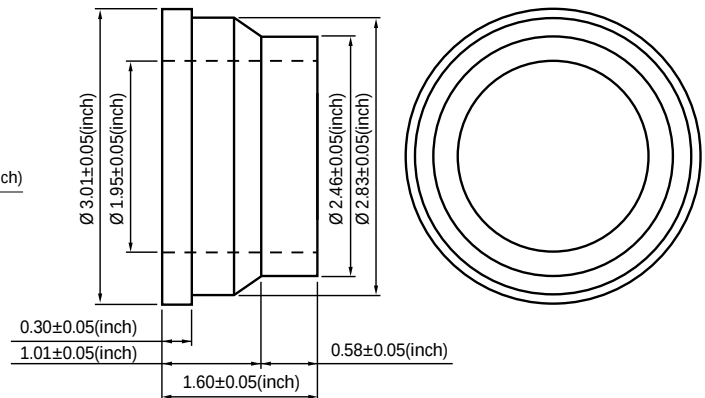
### 1½" DN40-UNION-NPT-PP SDR 11 IR FUSION



### 2" DN50-UNION-NPT-PP

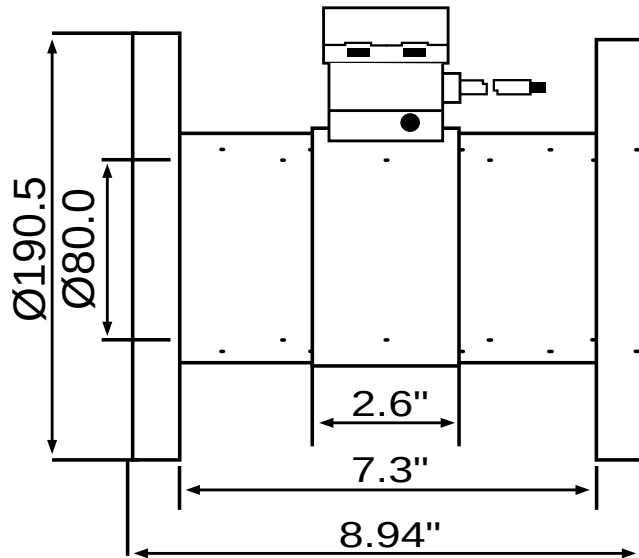
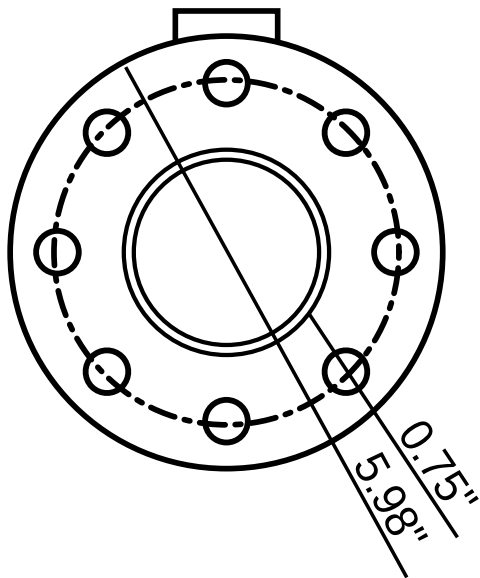


### 2" DN50-UNION-NPT-PP SDR 11 IR FUSION

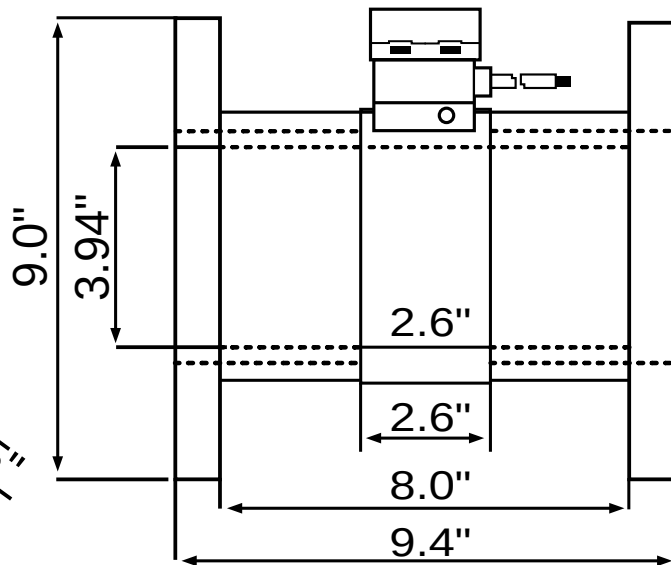
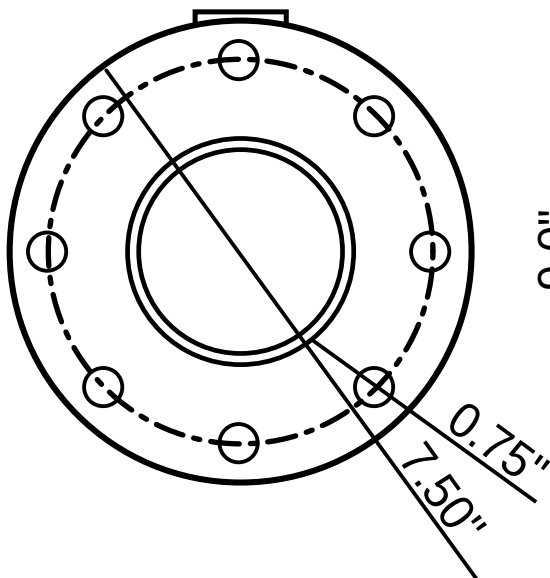




### 3" ANSI JIS

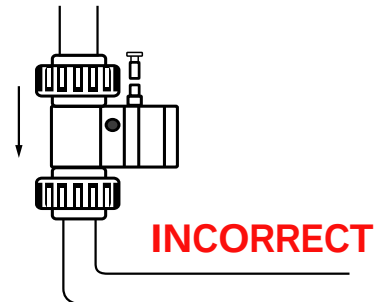
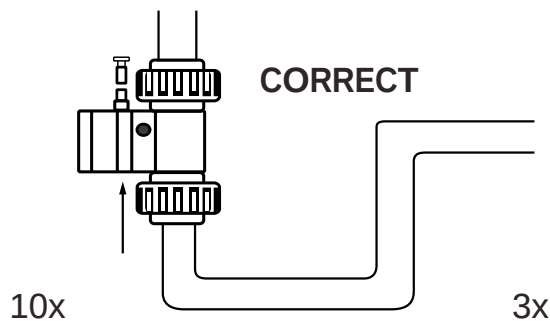
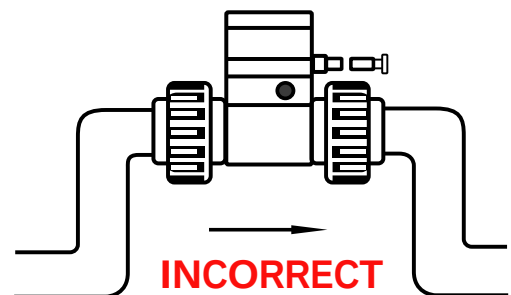
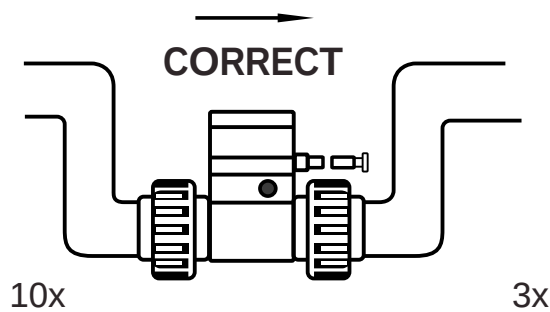
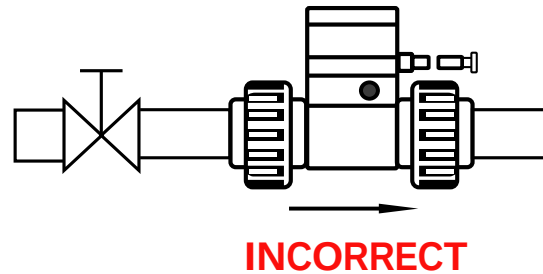
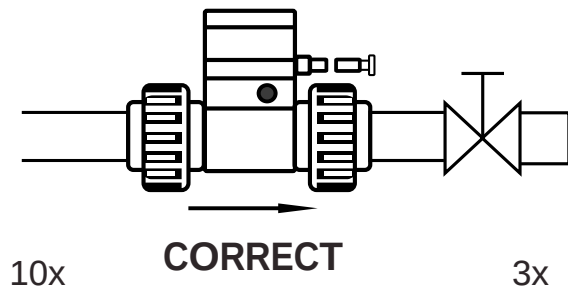
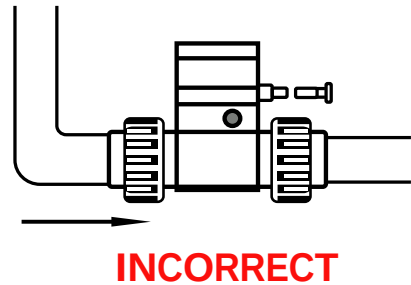
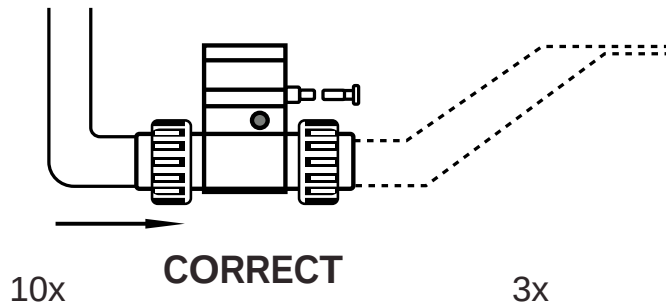


### PVC 4" ANSI JIS



**Remarks :** Different Options Are Available

## Installation Positions



## Installation Positions

Please make sure the pipe is filled with the fluid under normal operation.

TK Series can be installed in a horizontal or vertical direction.

Please ensure enough length of straight pipe to avoid turbulence that can effect readings.

**Note: Min 10x Pipe Diameters Upstream 3x Pipe Diameters Downstream.**

A Plastic Basket Strainer, Bag Filter or Y Strainer Filtering Device upstream to Avoid the Paddle Wheel from being damaged by the solids or fibers - max 10% Particle Size - Not to Exceed .5mm Cross Section or Length.

Please do not flush the pipe after the Flow Meter is installed with Compressed Air this may damage the ceramic shaft and will Void Warranty





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