

## TruFlo

# TK Series Multi-Function Paddle Wheel Flow Meter

1/2" to 4", Display Rate & Total, Pulse, Analog & Alarm Outputs

### DESCRIPTION

Series TK flow meters are paddle type and feature a choice of wetted plastic materials suitable for a wide range of media compatibility.

A large LED Display provides local readout of flow rate and flow total. Units of measure and alarm setpoint are readily selected via push buttons on the instrument face.

A variety of outputs for flow and total including frequency/pulse, analog (4-20 mA & 0-5V) and alarm are available.

Modbus 485 communications option provides an interface with a building automation or monitoring system.

### SPECIFICATIONS

#### GENERAL

Pipe Sizes: 1/2" to 4"

Flow Velocity range: 0.3m/s (0.98 ft/s) to 10 m/s (32.8 ft/s)

Operating Voltage: DC 10 to 30V

Measuring Accuracy:  $> \pm 1.0\%$  of F.S. @ 20°C (68°F)

Repeatability:  $\pm 0.5\%$  Full Scale

Turndown: 33:1

Response Time: Real Time

Parameter Setting: Push Button

Memory Mode: Non-Volatile E2 PROM Memory

Sensor Body Material: PVDF, PP or 316SS

Pipe Connections: NPT, BSP, ANSI Flanges, Socket

Electrical Connection: M12/3m Cable

Rotor Material: Tefzel

Shaft and Bearing Material: Zirconium Cermamic (ZrO2)

Seals: EPDM/ FKM (Viton)

Display Housing Materials: Polymide 66 + PBT + 15% Glass Filled (UL94V-0)

Measuring Viscosity Range: 0.5 to 20 Centi Stokes (cst)

Maximum Particle Size:  $< 10\%$  (Particles in flow stream) or  $< 0.5 \text{ mm}^2$  size

Operating Pressure/Temperature: 150 psi

Operating Temperature: PVC, 60°C; PP, 80°C;

316 SS, 120°C

Electronics Operating Temp: -25 to 50°C

Output Frequency: 60.5Hz m/s Nominal (18.45Hz ft/s nominal) (Max. 10Hz (totalizer last digit))

Pulse Output Type: Transistor NPN Open-Collector (Max. DC60V/100mA)

Display:

Flow Units of measure: GPM, LPM, KL/MIN

LED Display: Bright Red (Totalizer) or Green LED (Flow Indication)

Readout: 99999.9 (Flow Rate, one decimal place)  
999999 (Totalizer)



Pipe Size	Sched 80 ID (inches)	Flow Rate (LPM/GPM)		* K Factors	
		Min. Velocity 0.3 m/s	Max. Velocity 10 m/s	GPM	LPM
1/2"	0.55	3.5/1.0	120/32	32.6	124
3/4"	0.74	5.0/1.5	170/45	18.9	72
1"	0.96	9.0/2.5	300/79	14.2	54
1-1/2"	1.50	25.0/6.5	850/225	5.0	19
2"	1.90	60.0/16	1850/357	2.7	10.3
3"	2.90	90.0/24	2800/739	1.2	4.7
4"	3.80	125.0/33	4350/1149	0.6	2.1

\* K-Factor Pre Programmed by Factory - No flow meter Programming of a K-Factor is required. Required when programming remote display or controller.

#### Outputs:

Relay Output: Adjustable 0.1 to 999 GPM

Relay Contact Output: 5 VDC, 1 Amp

Analog Output: 4-20mA, 120 Ohms max.

Flow Rate Pulse: NPN open-collector transistor.

1 pulse per gallon std output, K-factor

programmed at factory or pulse output of Paddle (5KHz max.).

Totalizer Pulse: NPN open-collector transistor,

1 pulse per gallon. Can be manually, time or auto reset.

Communication:

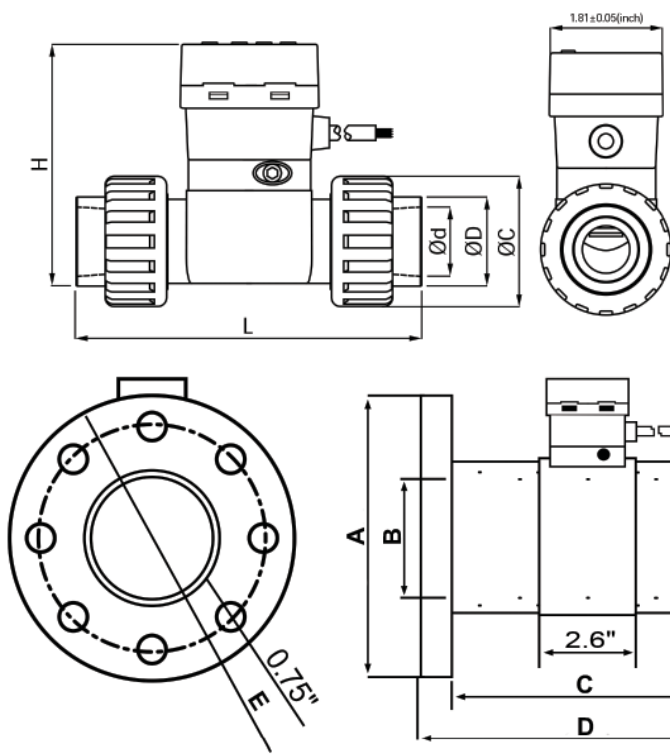
RS-485 Baud Rate: 9600/19200/38400

RS-485 Protocol: Modbus RTU or ASCII

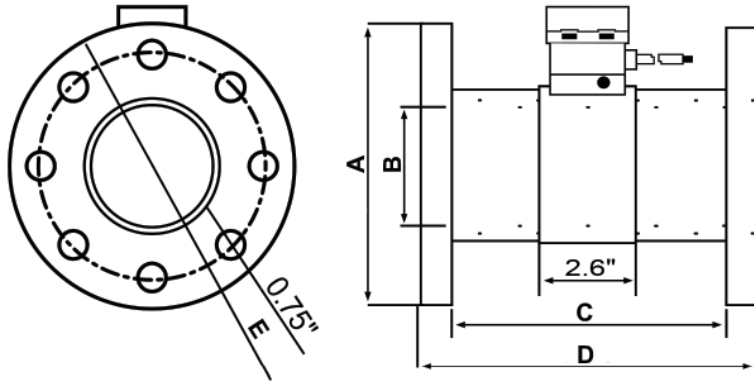
Protection Class: IP66 NEMA 4X

Certification: CSA CE Rohs

## DIMENSIONS (INCHES)

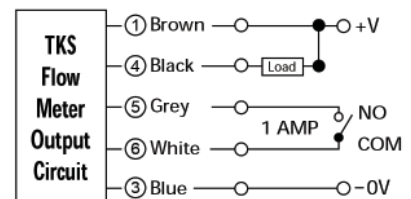
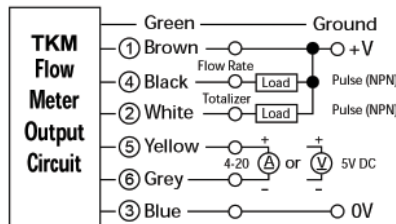
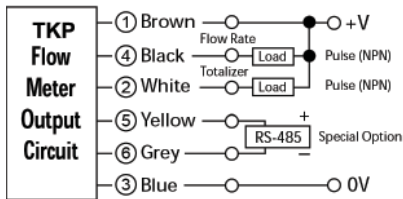


Pipe Size	*H	*L	*Ød	*ØD
1/2"	4.09	5.48	0.84	1.07
3/4"	4.17	6.12	1.05	1.36
1"	4.30	6.76	1.32	1.68
1-1/2"	5.02	7.66	1.91	2.33
2"	5.56	8.39	2.38	2.86



Size	A	B	C	D	E
3" ANSI	7.5"	3.15"	7.3"	8.94"	5.98"
4" ANSI	9"	3.94"	8.0"	9.4"	7.5"

## WIRING



Series TKP-Totalizer/Rate/Pulse Out			
Brown	10-30 VDC (+)	Yellow	(+) RS485
Blue	0 V (-)	Grey	(-) RS485
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output NPN
Yellow & Grey with RS485 (Only) Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output			

Series TKM- Totalizer/Rate/Analog & Pulse Out			
Brown	10-30 VDC (+)	Yellow	4-20 mA or 0-5V
Blue	0 V (-)	Grey	4-20 mA or 0-5V DC (4-20mA Default, -0-5VDC Option-Special Order)
White	Totalizer Pulse Output NPN	Black	Flow Rate Pulse Output NPN
Yellow & Grey with RS485 (Only) Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output			

Series TKS- Flow Rate/Alarm/Pulse Out			
Brown	10-30 VDC (+)	White	Com
Blue	0 V (-)	Grey	NO, 1Amp
Black	Flow Rate Pulse Output NPN		
Yellow & Grey with RS485 (Only) Black Wire can be Changed for Flow Total Limit Output or Unit Volume Pulse Output			

## ORDERING INFORMATION

**MODEL CONFIGURATION: ABC-DEF**  
**EXAMPLE: TKM20NPT-A-PVCSTD**

A	B	C	D	E	F
Model Series	Pipe Size	Pipe Fitting	Communication or Transmitter	Body Material	Electrical Connection
TKP = Paddle Wheel Flow Meter & Flow Totalizer+ ( Flow Rate Pulse + Flow Totalizer Pulse) TKM = Paddle Wheel Flow Meter with Transmitter + (Flow Rate Pulse + Totalizer Pulse) TKS = Paddle Wheel Flow Meter with Relay Output + ( Flow Rate Pulse)	15 = (1/2") 20 = (3/4") 25 = (1") 40 = (1 1/2") 50 = (2") 80 = (3") 100 = (4")	S= Socket NPT= Male NPT, plastic models; female NPT stainless models BSP= BSP Male FL= Flange (3&4" models)	Non = Without Communication RS = TKP Series with RS-485 MODBUS Selectable A = TKM Series with Transmitter (4- 20mA) + Pulse V= TKM Series with Transmitter (0- 5V) + Pulse	PVC = PVC PP = Polypropylene ST = 316 SST	STD = Wire Lead (3m) - Other Lengths Available