

TS20C, 2"

Stainless Steel, Electronic

- Only two moving parts
- No metal to metal contact in chamber or bearings
- Internal pulser = Gland-less meter design
- Patented 'Wave Form' oval gear design
- Low differential pressure for maximum flow

Specifications

- **Nominal Capacity with standard LV rotors**

To 1500 SSU visc. :	150 GPM	} NTEP 5:1 turn-down OIML 10:1 turn-down Industrial to 30:1 turn-down
To 300 cP viscosity :	570 lpm	
To 300 cP viscosity :	34 m³/h	
- **Pressure Rating** : 400 PSI at 100°F = 28 BAR at 40°C
- **Temperature Rating**
 - Design W Assy.** : -40°F to +257°F = -40°C to +125°C
 - ATEX listing** : -4°F to +140°F = -20°C to +60°C
 - Design F Assy.** : Same, *subject to register temperature limits!*
- **Viscosity**
 - With **LV & HT** rotors : 100% capacity to 1,500 SSU (300 cP).
 - With **HV** rotors : 100% capacity to 5,000 SSU (1000 cP), reduced capacity to 1,500,000 SSU (350,000 cP).
- **2" Connections** Bolted companion flanges with NPT or BSP port.
 - Optional : Bolted welding flanges, stainless steel
 - Bolted 150# RF ANSI adaptors, stainless steel
- **Materials 100% Non-Ferrous**
 - Case : CF8M (cast equivalent to 316SS).
 - Gears : PPS with carbon bearings, Teflon™ bearings opt.
 - Posts : HC316SS
 - Seals : Teflon™ standard.
 - Flanges : CF8M (cast equivalent to 316SS).
- **Pulser** : **Hall Effect Quadrature, 5-12 VDC or 24 VDC**
5V reg or 6-12V non-reg; pls consult for 24V DC.
- **K Factor** : Nominal 395 PPG (104.4 ppl) on 1 cP viscosity,
Opt. with SCL : EL0300-3-13E = 100 PPG (26.5 ppl)
EL0300-3-18E = 10 PPL (37.85 PPG)
See page 2 for frequency & pulse ON data.

TS30CW03 for use with remote electronic register

Depending upon register or controller model, the pulser compartment in flow sensor front cover holds the sensor (pulser), and either:


- A. **TBB** = Terminal Block Board
- B. **SCL** = Scaler/Calibrator/Linearizer

Meter Performance

Linearity Over 5:1 turn-down from max. capacity: ±0.175%
Over 10:1 turn-down from max. capacity: ±0.25%
Over 30:1 turn-down from max. capacity: ±0.5%

Repeatability 0.05% or better under constant conditions

Approvals Custody Transfer approvals are liquid specific.
W&M approval in the US, Canada* & EU*.
** Canada & EU: W&M approval of pulser is pending.*

- **Flow Meter** CE mark.
- **Pulser & SCL** *Intrinsically Safe*, UL & cUL listed, **SCL also EEx ia ATEX when powered through approved barrier.**
- **Pulser encl.**  II 2G Ex d IIA T4, -20°C <Ta<+60°C, ATEX, IEC Ex & IP65

Signals, Registration & Accessories

- **Electronic registers:** Tuthill electronic flow meters will support most common electronic registers & controllers. In case meter K Factor, pulse width or frequency exceeds receiving instrument capabilities, the SCL scaler is available to ensure signal compatibility. Available through Tuthill:
 - **ELNC** for stationary service
 - **EMR³** for stationary or truck service
 - Assorted non-W&M registers & controllers
- **Signal Conditioners:**
 - **PIA** Amplifier for remote registers (to 2,500' = 750 m)
 - **PAC** Pulse to Analog Converter (no display)
 - **SCL** Scaler, Calibrator and/or Linearizer (see FPP261).
- **Accessories**
 - Inlet strainer for flow meter protection
 - Air eliminator mounted on strainer

TS20C W



ISO 9001:2000 Certified



TS20C

Average*
K Factor** on
1 cP viscosity.

Raw signal 395 PPG => Freq.
104.3 PPL Pulse

Using 100 PPG scaler => Freq.

Using 10 PPL scaler => Freq.

When operating at***									of capacity
25%	50%	60%	70%	80%	90%	100%	110%		
247	494	593	691	790	889	988	1086	Hz	
2.03	1.01	0.84	0.72	0.63	0.56	0.51	0.46	ms ON	
62.5	125.0	150.0	175.0	200.0	225.0	250.0	275.0	Hz	
1.3								ms ON	
23.8	47.5	57.0	66.5	76.0	85.5	95.0	104.5	Hz	
2.5								ms ON	

* Can vary by +/-0.5% ** At 0.5 cP (LPG), K Factor is abt 2% higher. Over 100 cP viscosity, K Factor is abt 1.5% lower.

*** Operation over 100% on low viscosity lubricating liquids only. **Please consult for intermittent flow over 110%**

'Component' P/Nos.:

W?? = Flow sensor for use with remote register/controller.
F?? = Flow meter with register mounting flange & register.

Model No. Assy. No. Ident. for options shown (incl. only if non-std.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	Pos. in P/No.
TS20C					W	ID of Accessories			X	X	Press. Rating	Rotors	X	X	Seals
					F										

C = 150 PSI (10 BAR)
F = 400 PSI (28 BAR)

B = LV, PPS/carbon
L = HT, PPS/carbon
I = HV, PPS/carbon
C = LV, PPS/Teflon
M = HT, PPS/Teflon
J = HV, PPS/Teflon

B = Teflon

Highlighted = Standard

Companion flange kit is shown as a separate item.
Register is shown separately (1 or more components).
Solenoid valve is shown as a separate item.

'Package' P/Nos.:

W?? = Flow sensor for use with remote register/controller.
F?? = Flow meter with register mounting flange & register.

Model No. Assy. No. Ident. for options shown (incl. only if non-std.)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	Pos. in P/No.
TS20C					W	ID of register (ELNC/EMR ³) & Accessories.			Flanges	Rotors, Brgs. & Seals	Regist. Identifier	EMR3 Listing	EMR3 front panel	Misc. options
					F									

A = NPT companion flanges
B = BSP companion flanges
C = other

B = LV/carb, Teflon
P = HT/carb, Teflon
R = HV/carb, Teflon
U = LV/Tefl, Teflon
Y = HT/Tefl, Teflon
H = HV/Tefl, Viton

2 = EMR3 & IB
1 = EMR3
0 = TBB only
5 = TBB/amplifier
6 = Quadr. Filter
S = 100 PPG SCL

U = UL/cUL
A = ATEX

E = English
S = Spanish
F = French
C = Quebec

Highlighted = Standard

Control valves are shown as a separate item.



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