FILL-RITE®

A GORMAN-RUPP COMPANY

Oval Gear Meters Part Number Guide

TM & TS Meter

Effective: March 2023

GORMAN-RUPP COMPANY

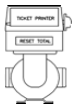
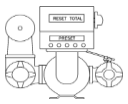
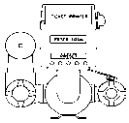
8825 Aviation Drive
Fort Wayne, Indiana 46809
(800) 634-2695
fillrite.com

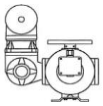
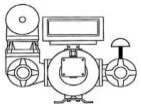
*Prices are subject to change. Please confirm all prices with Custumer Support.

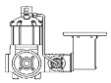
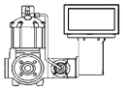
TM METERS

ELECTRICAL		
SHE and SRS		Meter Only - No Register

TS METERS

MECHANICAL		
V03		Meter Only - No Register (register ready), Calibrator, RAD adaptor, no ratio gear plate (distributor to add)
V04		Meter Only - Calibrator, RAD Adaptor, Ratio Gear Plate & Register
V06		Calibrator, RAD Adaptor, Ratio Gear Plate & Register + Strainer + Air Eliminator
V07		**V04** + Zero Start Ticket Printer
V09		**V06** + Zero Start Ticket Printer
V11		**V04** + 2-Stage Preset Counter + Preset Valve
V13		**V06** + 2-Stage Preset Counter + Preset Valve
V17		**V06** + 2-Stage Preset Counter + Preset Valve + Zero Start Ticket Printer

ELECTRICAL		
W04		Meter only - no register flange
F14		Meter only - with register flange (register ready)
F16		Register Flange (register ready) + Strainer + Air Eliminator
F64		Meter only - with EMR4 register
F63		Meter + EMR4 Register + Strainer + Air Eliminator + Solenoid Preset Valve
F66		Meter + EMR4 Register + Strainer + Air Eliminator

ELECTRICAL - LPG		
S83		SINGLE, No Register Flange + Strainer (1 Thermowell) + Air Eliminator + Relief Valve + Differential Check Valve
E86		SINGLE + Register Flange + Strainer (1 ThermoWell) + Air Eliminator + Relief Valve + Diff. Control Valve
E96		SINGLE + EMR4 Register (Temp. Comp.) + Strainer (1 Thermowell) + Air Eliminator + Relief Valve + Diff. Control Vlve

FLOW METERS - Electronic

MODEL: TM

ANODIZED ALUMINUM and STAINLESS STEEL

No Strainer or Air Eliminator	**SHE** - Flow Meter Only, Hall Effect, NO Register
	SRS - Flow Meter Only, Reed Switch, NO Register
	T0C - Flow Meter with PIA300 Isolator/Amplifier, NEMA 4X, -40°F/+158°F (-40°C/+70°C)
	T0E - Flow Meter with PIA300 Isolator/Amplifier, NEMA 7/4X, -40°F/+158°F (-40°C/+70°C)

Position 6 - 8 - Configuration	6 7 8	**SHE** = Hall Effect • **SRS** = Reed Switch
Position 09 - Port Threads	9	**A** = NPT **B** = BSP **C** = 1" NPT **D** = 1" BSP
Position 10 - Register	10	**X** = N/A
Position 11 - Pressure Rating	11	**K** = 1500 PSI
Position 12 - Rotors	12	**A** = Low Viscosity-PPS • **K** = High Viscosity-PPS • **E** = Low Viscosity-SS
Position 13 - Magnets	13	**1** = 1 Magnet • **2** = 2 Magnets • **4** = 4 Magnets
Position 14 - Pulser	14	**H** = Hall Effect • **B** = Reed Switch
Position 15 - Seals	15	**B** = Teflon
Position 16-17 - Strainer Mesh	16 17	**Blank** = Not Used
Position 18 - Reserved	18	**Blank** = Not Used

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	
GROUP 2 - E85	LV	T	
GROUP 3 - ATF and HT	HV	V	

LIST PRICES

	Anodized Aluminum			Stainless Steel (316SS)			
US GPM:	3	10	20	0.3	3	10	20
LPM:	11	37	75	1	11	37	75
PSI:	1500	1500	1500	1500	1500	1500	1500
Bar:	100	100	100	100	100	100	100
Dia.	⅜"	½"	¾"	¼"	⅜"	½"	¾"
3,4, & 5:	**03A**	**04A**	**06A**	**02D**	**03D**	**04D**	**06D**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
2	T	M				S	H	E	A	X	K	A	4	H	B			
1,2,3	T	M				S	H	E	A	X	K	E	2	H	B			
1,2,3	T	M				S	H	E	A	X	K	E	4	H	B			
1,2,3	T	M				S	H	E	A	X	K	K	4	H	B			
2	T	M				S	H	E	B	X	K	A	4	H	B			
1,2,3	T	M				S	H	E	B	X	K	E	2	H	B			
1,2,3	T	M				S	H	E	B	X	K	K	4	H	B			
2	T	M				S	R	S	A	X	K	A	1	B	B			
1,2,3	T	M				S	R	S	A	X	K	E	1	B	B			
1,2,3	T	M				S	R	S	A	X	K	K	1	B	B			
2	T	M				S	R	S	B	X	K	A	1	B	B			
1,2,3	T	M				S	R	S	B	X	K	E	1	B	B			
1,2,3	T	M				S	R	S	B	X	K	K	1	B	B			

FLOW METERS - Electronic

MODEL: TM

ANODIZED ALUMINUM and STAINLESS STEEL

No Strainer or Air Eliminator	**SHE** - Flow Meter Only, Hall Effect, NO Register
	SRS - Flow Meter Only, Reed Switch, NO Register
	T0C - Flow Meter with PIA300 Isolator/Amplifier, NEMA 4X, -40°F/+158°F (-40°C/+70°C)
	T0E - Flow Meter with PIA300 Isolator/Amplifier, NEMA 7/4X, -40°F/+158°F (-40°C/+70°C)

Position 6 - 8 - Configuration	6 7 8	**SHE** = Hall Effect • **SRS** = Reed Switch
Position 09 - Port Threads	9	**A** = NPT **B** = BSP
Position 10 - Register	10	**X** = N/A
Position 11 - Pressure Rating	11	**K** = 1500 PSI
Position 12 - Rotors	12	**A** = Low Viscosity-PPS • **K** = High Viscosity-PPS • **E** = Low Viscosity-SS
Position 13 - Magnets	13	**1** = 1 Magnet • **2** = 2 Magnets • **4** = 4 Magnets
Position 14 - Pulser	14	**H** = Hall Effect • **B** = Reed Switch
Position 15 - Seals	15	**B** = Teflon
Position 16-17 - Strainer Mesh	16 17	**Blank** = Not Used
Position 18 - Reserved	18	**Blank** = Not Used

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and HT	HV	V	C

LIST PRICES

	Anodized Aluminum			Stainless Steel (316SS)			
US GPM:	3	10	20	0.3	3	10	20
LPM:	11	37	75	1	11	37	75
PSI:	1500	1500	1500	1500	1500	1500	1500
Bar:	100	100	100	100	100	100	100
Dia.	⅜"	½"	¾"	¼"	⅜"	½"	¾"
3,4, & 5:	**03A**	**04A**	**06A**	**02D**	**03D**	**04D**	**06D**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1,2	T	M				D	0	5	A	X	K	E	1	B	B			
1,2	T	M				D	0	5	A	X	K	A	1	B	B			
1,2	T	M				D	0	8	A	X	K	E	1	B	B			
1,2	T	M				D	0	8	A	X	K	A	1	B	B			
1,2	T	M				T	0	C	A	X	K	A	4	H	B			
1,2	T	M				T	0	E	A	X	K	A	4	H	B			
3	T	M				D	0	5	A	X	K	K	1	B	B			
3	T	M				D	0	8	A	X	K	K	1	B	B			
3	T	M				T	0	C	A	X	K	K	4	H	B			
3	T	M				T	0	E	A	X	K	K	4	H	B			
1,2	T	M				D	0	5	B	X	K	E	1	B	B			
1,2	T	M				D	0	8	B	X	K	A	1	B	B			
1,2	T	M				D	0	5	B	X	K	E	1	B	B			
1,2	T	M				D	0	8	B	X	K	A	1	B	B			
1,2	T	M				T	0	C	B	X	K	A	4	H	B			
1,2	T	M				T	0	E	B	X	K	A	4	H	B			
3	T	M				D	0	5	B	X	K	K	1	B	B			
3	T	M				D	0	8	B	X	K	K	1	B	B			
3	T	M				T	0	C	B	X	K	K	4	H	B			
3	T	M				T	0	E	B	X	K	K	4	H	B			

FLOW METERS - Mechanical

MODEL: TS

ANODIZED ALUMINUM

No Strainer or Air Eliminator	**V03** - Flow Meter + Register adaptor (Register Ready - VR Mech. Register) - No ratio gear plate (purchased separately)
	V04 - Flow Meter + VR Register*
	V07 - Flow Meter + VR Register + Zero Start Ticket Printer**
	V11* - Flow Meter + VR Register + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage
Strainer + Air Eliminator	**V06** - Flow Meter + VR Register + Strainer + Air Eliminator
	V09 - Flow Meter + VR Register + Strainer + Air Eliminator + Zero Start Ticket Printer (7888)
	V13* - Flow Meter + VR Register + Strainer + Air Eliminator + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage
	V17* - Flow Meter + VR Register + Strainer + Air Eliminator + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage + Zero Start Ticket Printer

* 7887 - Veeder Root - 5-digit register ** 7888 - Veeder Root - Zero Start Ticket Printer *** 7889 - Veeder Root - 5 digit preset counter, 2-stage shut-off

*Assemblies with Preset Valve - Standard gears limited to 50cSt, HV gears limited to 1,000cSt

Position 09 - Pipe Flanges	9	**X** = No Flanges • **A** = NPT • **B** = BSP • **H** = Carbon Steel Weld C = Carbon Steel ANSI 150#
Position 10 - Calibration on Mechanical Register	10	**T** = 1/10 Gal. • **G** = 1 Gal. • **Y** = 1/10 Liter • **L**= 1 Liter
Position 11 - Pressure Rating	11	**C** = 150 psi
Position 12 - Rotors / Bearings	12	**B** = LV-PPS/Carbon • **C** = LV-PPS/Teflon • **I** = HV-PPS/Carbon
Position 13 - Rotor Output	13	**M** = Mech. Drive rotor to register
Position 14 - Pulser on the Register	14	**X** = N/A • **D** = 10:1 Dry Reed • **S** = 100:1 Solid State
Position 15 - Internal Seals	15	**A** = Viton • **B** = Teflon
Position 16 - Strainer	16	**X** = Not Used • **S** = Standard • **H** = High Capacity **J** = HC Backpressure Valve
Position 17 - Strainer Mesh	17	**4** = 40 mesh, stnd/LV rotors • **2** = 20 mesh, stnd/HV rotors

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and HT	HV	V	C
GROUP 7 - Fertilizer	LV	V	T

LIST PRICES

Anodized Aluminum

US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		150	150	150	150
Bar:		10	10	10	10
Dia.		1"	1½"	2"	3"
POSITION 3,4, & 5:		**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18						
1	T	S				**V**	**0**	**3**	X	X	C	B	M	X	A	X	X							
2	T	S				**V**	**0**	**3**	X	X	C	B	M	X	B	X	X							
3	T	S				**V**	**0**	**3**	X	X	C	I	M	X	A	X	X							
1	T	S				**V**	**0**	**4**	A	G	C	B	M	D	A	X	X							
2	T	S				**V**	**0**	**4**	A	G	C	B	M	D	B	X	X							
1	T	S				**V**	**0**	**4**	A	G	C	B	M	X	A	X	X							
2	T	S				**V**	**0**	**4**	A	G	C	B	M	X	B	X	X							
7	T	S				**V**	**0**	**4**	A	G	C	C	M	X	A	X	X		see Note					
3	T	S				**V**	**0**	**4**	A	G	C	I	M	X	A	X	X							
1	T	S				**V**	**0**	**4**	A	L	C	B	M	D	A	X	X							
1	T	S				**V**	**0**	**4**	A	L	C	B	M	X	A	X	X							
7	T	S				**V**	**0**	**4**	A	L	C	B	M	X	B	X	X							
3	T	S				**V**	**0**	**4**	A	L	C	I	M	D	A	X	X							
3	T	S				**V**	**0**	**4**	A	L	C	I	M	X	A	X	X							
1	T	S				**V**	**0**	**4**	A	T	C	B	M	D	A	X	X							
1	T	S				**V**	**0**	**4**	A	T	C	B	M	X	A	X	X							
7	T	S				**V**	**0**	**4**	A	T	C	C	M	X	A	X	X		see Note					
2	T	S				**V**	**0**	**4**	A	T	C	B	M	X	B	X	X							
3	T	S				**V**	**0**	**4**	A	T	C	I	M	X	A	X	X							
1	T	S				**V**	**0**	**4**	A	Y	C	B	M	X	A	X	X							
1	T	S				**V**	**0**	**4**	B	L	C	B	M	X	A	X	X							
3	T	S				**V**	**0**	**4**	B	L	C	I	M	X	A	X	X							
2	T	S				**V**	**0**	**4**	B	L	C	B	M	X	B	X	X							
1	T	S				**V**	**0**	**4**	B	Y	C	B	M	X	A	X	X							
2	T	S				**V**	**0**	**4**	B	Y	C	B	M	X	B	X	X							
1	T	S				**V**	**0**	**6**	A	G	C	B	M	X	A	S	4							
1	T	S				**V**	**0**	**6**	A	G	C	I	M	X	A	S	2							
1	T	S				**V**	**0**	**6**	A	L	C	B	M	X	A	S	4							
3	T	S				**V**	**0**	**6**	A	L	C	I	M	X	A	S	2							

Note: When using Teflon bearings, meter should operate at no more than 80% of nominal capacity to prevent excessing bearing wear.

FLOW METERS - Mechanical

MODEL: TS

ANODIZED ALUMINUM

No Strainer or Air Eliminator	**V03** - Flow Meter + Register Adaptor (Register Ready - VR Mech. Register) - No ratio gear plate (purchased separately)
	V04 - Flow Meter + VR Register*
	V07 - Flow Meter + VR Register + Zero Start Ticket Printer**
	V11* - Flow Meter + VR Register + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage
Strainer + Air Eliminator	**V06** - Flow Meter + VR Register + Strainer + Air Eliminator
	V09 - Flow Meter + VR Register + Strainer + Air Eliminator + Zero Start Ticket Printer (7888)
	V13* - Flow Meter + VR Register + Strainer + Air Eliminator + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage
	V17* - Flow Meter + VR Register + Strainer + Air Eliminator + 2-Stage Preset Counter + Mechanical Preset Valve + Linkage + Zero Start Ticket Printer

* 7887 - Veeder Root - 5-digit register ** 7888 - Veeder Root - Zero Start Ticket Printer *** 7889 - Veeder Root - 5 digit preset counter, 2-stage shut-off

*Assemblies with Preset Valve - Standard gears limited to 50cSt, HV gears limited to 1,000cSt

Position 09 - Pipe Flanges	9	**X** = No Flanges • **A** = NPT • **B** = BSP • **H** = Carbon Steel Weld C = Carbon Steel 150# ANSI
Position 10 - Calibration on Mechanical Register	10	**T** = 1/10 Gal. • **G** = 1 Gal. • **Y** = 1/10 Liter • **L**= 1 Liter
Position 11 - Pressure Rating	11	**C** = 150 psi
Position 12 - Rotors / Bearings	12	**B** = LV-PPS/Carbon • **C** = LV-PPS/Teflon • **I** = HV-PPS/Carbon
Position 13 - Rotor Output	13	**M** = Mech. Drive rotor to register
Position 14 - Pulser on the Register	14	**X** = N/A • **D** = 10:1 Dry Reed • **S** = 100:1 Solid State
Position 15 - Internal Seals	15	**A** = Viton • **B** = Teflon
Position 16 - Strainer	16	**X** = Not Used • **S** = Standard • **A** = ANSI Flange
Position 17 - Strainer Mesh	17	**4** = 40 mesh, stnd/LV rotors • **2** = 20 mesh, stnd/HV rotors

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and HT	HV	V	C
GROUP 7 - Fertilizer	LV	V	T

LIST PRICES

Anodized Aluminum

US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		150	150	150	150
Bar:		10	10	10	10
Dia.		**1"**	**1½"**	**2"**	**3"**
POSITION 3,4, & 5:		**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	T	S				**V**	**0**	**6**	A	T	C	B	M	D	A	S	4	
1	T	S				**V**	**0**	**6**	A	T	C	B	M	X	A	S	4	
2	T	S				**V**	**0**	**6**	A	T	C	B	M	X	B	S	4	
3	T	S				**V**	**0**	**6**	A	T	C	I	M	X	A	S	2	
3	T	S				**V**	**0**	**6**	A	T	C	I	M	X	B	S	2	
3	T	S				**V**	**0**	**6**	B	L	C	I	M	X	A	S	2	
1	T	S				**V**	**0**	**6**	B	L	C	B	M	X	A	S	4	
2	T	S				**V**	**0**	**6**	B	L	C	B	M	X	B	S	4	
1	T	S				**V**	**0**	**7**	A	T	C	B	M	X	A	X	X	
1	T	S				**V**	**0**	**7**	B	L	C	B	M	X	A	X	X	
1	T	S				**V**	**0**	**9**	A	G	C	B	M	X	A	S	4	
1	T	S				**V**	**0**	**9**	A	T	C	B	M	X	A	S	4	
1	T	S				**V**	**0**	**9**	A	L	C	B	M	X	A	S	4	
1	T	S				**V**	**0**	**9**	B	L	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**1**	A	G	C	B	M	X	A	X	X	
1	T	S				**V**	**1**	**1**	A	T	C	B	M	X	A	X	X	
1	T	S				**V**	**1**	**1**	A	T	C	I	M	X	A	X	X	
1	T	S				**V**	**1**	**1**	A	L	C	B	M	X	A	X	X	
1	T	S				**V**	**1**	**1**	B	L	C	B	M	X	A	X	X	
2	T	S				**V**	**1**	**1**	B	L	C	B	M	X	B	X	X	
2	T	S				**V**	**1**	**1**	B	L	C	I	M	X	B	X	X	
1	T	S				**V**	**1**	**3**	A	G	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**3**	A	G	C	B	M	S	A	S	4	
1	T	S				**V**	**1**	**3**	A	L	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**3**	A	L	C	I	M	X	A	S	2	
1	T	S				**V**	**1**	**3**	A	T	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**3**	B	L	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**7**	A	G	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**7**	A	G	C	B	M	D	A	S	4	
1	T	S				**V**	**1**	**7**	A	T	C	B	M	X	A	S	4	
1	T	S				**V**	**1**	**7**	B	L	C	B	M	X	A	S	4	

#N/A

FLOW METERS - Mechanical

MODEL: TS

STAINLESS STEEL

No Strainer or Air Eliminator	**V03** - Flow Meter + Register Adaptor (Register Ready - VR Mech. Register) - No ratio gear plate (purchased separately)
	V04 - Flow Meter + VR Register*
	V07 - Flow Meter + VR Register + Zero Start Ticket Printer**

* 7887 - Veeder Root - 5-digit register ** 7888 - Veeder Root - Zero Start Ticket Printer *** 7889 - Veeder Root - 5 digit preset counter, 2-stage shut-off

Position 09 - Pipe Flanges	9	**X** = No Flange • **A** = NPT • **B** = BSP • **C** = 150# RF ANSI adaptors
Position 10 - Calibration on Mechanical Register	10	**X** = Not Used • **T** = 1/10 Gal. • **G** = 1 Gal. • **L**= 1 Liter
Position 11 - Pressure Rating	11	**C** = 150 psi
Position 12 - Rotors / Bearings	12	**B** = LV-PPS/Carbon • **C** = LV-PPS/Teflon • **I** = HV-PPS/Carbon • **J** = HV-PPS/Teflon
Position 13 - Rotor Output	13	**M** = Mech. Drive rotor to register
Position 14 - Pulser on the Register	14	**X** = Not Used • **D** = 10:1 Dry Reed • **S** = 100:1 Solid State
Position 15 - Internal Seals	15	**A** = Viton • **B** = Teflon
Position 16 - Strainer	16	**X** = Not Used
Position 17 - Strainer Mesh	17	**4** = 40 mesh, stnd/LV rotors • **2** = 20 mesh, stnd/HV rotors

	Rotors	Seals	Bearing
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and HT	HV	V	C
GROUP 6 - Herb/Pesticide	HV	T	T
GROUP 7 - Fertilizer	LV	V	T
GROUP 8 - Caustics	LV	T	T

LIST PRICES

Stainless Steel (316)

US GPM:	40	60	150	200	
LPM:	150	230	570	760	
PSI:	150	150	150	150	
Bar:	10	10	10	10	
Dia.	**1"**	**1½"**	**2"**	**3"**	
POSITION 3,4, & 5:	**10C**	**15C**	**20C**	**30C**	

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
1	T	S				**V**	**0**	**3**	X	X	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**3**	X	X	C	I	M	X	B	X	X		
1	T	S				**V**	**0**	**3**	C	X	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**3**	C	X	C	I	M	X	B	X	X		
1	T	S				**V**	**0**	**4**	A	L	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**4**	A	T	C	B	M	X	B	X	X		
3	T	S				**V**	**0**	**4**	A	T	C	I	M	X	B	X	X		
6	T	S				**V**	**0**	**4**	A	T	C	J	M	X	B	X	X		see Note
7,8	T	S				**V**	**0**	**4**	A	T	C	C	M	X	B	X	X		see Note
1	T	S				**V**	**0**	**4**	B	L	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**4**	C	G	C	B	M	X	B	X	X		
3	T	S				**V**	**0**	**4**	C	G	C	I	M	X	B	X	X		
6	T	S				**V**	**0**	**4**	C	G	C	J	M	X	B	X	X		see Note
1	T	S				**V**	**0**	**4**	C	L	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**4**	C	T	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**7**	A	T	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**7**	C	G	C	B	M	X	B	X	X		
	T	S				**V**	**0**	**7**	C	G	C	J	M	X	B	X	X		
1	T	S				**V**	**0**	**7**	B	L	C	B	M	X	B	X	X		
1	T	S				**V**	**0**	**7**	C	L	C	B	M	X	B	X	X		

Note: When using Teflon bearings, meter should operate at no more than 80% of nominal capacity to prevent excessing bearing wear.

FLOW METERS - Electronic

MODEL: TS

No Register Flange

ANODIZED ALUMINUM

No Strainer or Air Eliminator	**W04** - Flow Meter - NO Register Flange

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP • **X** = No Flanges **C** = ANSI Flange
Position 10 - Rotors / Bearings / SEALS	10	**A** = LV-PPS / Carbon / VITON • **B** = LV-PPS / Carbon / PTFE • **V** = HV-PPS / Carbon / VITON
Position 11 - Components Included & Signal Conditioning	11	Signal Conditioning (5-12 VDC): **T** = TBB (Raw Pulse) • **G** = 100 PPG (26.4 PPL) • **L** = 10 PPL (37.8 PPG) Signal Conditioning (24 VDC): **T** = TBB (Raw Pulse) • **H** = 100 PPG (26.4 PPL) • **K** = 10 PPL (37.8 PPG)
Position 12 - ATEX (Gland)	12	**A** = ATEX Cable Gland
Position 13 - Enclosure	13	**X** = None
Position 14 - Strainer / Other	14	Not Used
Position 15 - Strainer Mesh	15	Not Used
Position 16-17 - Solenoid Specifications	16 17	Not Used

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and High Temp	HV	V	C

LIST PRICES

	Anodized Aluminum				
US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		400	400	400	400
Bar:		28	28	28	28
Dia.		**1"**	**1½"**	**2"**	**3"**
POSITION 3,4, & 5:		**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	T	S				**W**	**0**	**4**	A	A	G	A						
1	T	S				**W**	**0**	**4**	A	A	T	A						
2	T	S				**W**	**0**	**4**	A	B	G	A						
2	T	S				**W**	**0**	**4**	A	B	T	A						
3	T	S				**W**	**0**	**4**	A	V	G	A						
3	T	S				**W**	**0**	**4**	A	V	L	A						
3	T	S				**W**	**0**	**4**	A	V	T	A						
1	T	S				**W**	**0**	**4**	B	A	K	A						
1	T	S				**W**	**0**	**4**	B	A	L	A						
1	T	S				**W**	**0**	**4**	B	A	T	A						
2	T	S				**W**	**0**	**4**	B	B	K	A						
2	T	S				**W**	**0**	**4**	B	B	L	A						
2	T	S				**W**	**0**	**4**	B	B	T	A						
3	T	S				**W**	**0**	**4**	B	V	K	A						
3	T	S				**W**	**0**	**4**	B	V	L	A						
3	T	S				**W**	**0**	**4**	B	V	T	A						
1	T	S				**W**	**0**	**4**	X	A	T	A						
2	T	S				**W**	**0**	**4**	X	B	T	A						
3	T	S				**W**	**0**	**4**	X	V	T	A						

*Note: "T" (TBB - Terminal Block Board) in position 11 provides the natural pulse resolution of the meter (see Table 4A). The TBB can handle 5-12 V and 24 V power.

** Note: "F" in position 11 designates a modified TBB (accommodate vibrations) - consult factory for further explanation

FLOW METERS - Electronic

MODEL: TS

No Register Flange

STAINLESS STEEL

No Strainer or Air Eliminator	**W04** - Flow Meter - NO Register Flange

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP • **C** = 150# RF ANSI adaptors
Position 10 - Rotors / Bearings / SEALS	10	**B** = LV-PPS / Carbon / PTFE • **D** = HV-PPS / Carbon /PTFE • **H** = HV-PPS /PTFE / PTFE • **C**=LV-PPS/PTFE/PTFE
Position 11 - Components Included & Signal Conditioning	11	Signal Conditioning (5-12 VDC): **T** = TBB (Raw Pulse)* • **G** = 100 PPG • **L** = 10 PPL Signal Conditioning (24 VDC): **T** = TBB (Raw Pulse) • **K** = 10 PPL
Position 12 - ATEX (Gland)	12	**A** = ATEX Cable Gland
Position 13 - Enclosure	13	Not Used
Position 14 - Strainer / Other	14	Not Used
Position 15 - Strainer Mesh	15	Not Used
Position 16-17 - Solenoid Specifications	16 17	Not Used

	Rotors	Seals	Bearings
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and HT	HV	T	C
GROUP 6 - Herb/Pesticide	HV	T	T

LIST PRICES

Stainless Steel (316)

US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		400	400	400	400
Bar:		27.6	27.6	27.6	27.6
Dia.		**1"**	**1½"**	**2"**	**3"**
POSITION 3,4, & 5:		**10C**	**15C**	**20C**	**30C**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
2	T	S				**W**	**0**	**4**	A	B	G	A							
2	T	S				**W**	**0**	**4**	A	B	T	A							
3	T	S				**W**	**0**	**4**	A	D	G	A							
3	T	S				**W**	**0**	**4**	A	D	T	A							
6	T	S				**W**	**0**	**4**	A	H	G	A							see **Note below
6	T	S				**W**	**0**	**4**	A	H	T	A							see **Note below
6	T	S				**W**	**0**	**4**	A	C	G	A							see **Note below
6	T	S				**W**	**0**	**4**	A	C	T	A							see **Note below
2	T	S				**W**	**0**	**4**	B	B	T	A							
3	T	S				**W**	**0**	**4**	B	D	K	A							
3	T	S				**W**	**0**	**4**	B	D	L	A							
3	T	S				**W**	**0**	**4**	B	D	T	A							
6	T	S				**W**	**0**	**4**	B	H	K	A							see **Note below
6	T	S				**W**	**0**	**4**	B	H	L	A							see **Note below
6	T	S				**W**	**0**	**4**	B	H	T	A							see **Note below
2	T	S				**W**	**0**	**4**	C	B	G	A							
2	T	S				**W**	**0**	**4**	C	B	K	A							
2	T	S				**W**	**0**	**4**	C	B	L	A							
2	T	S				**W**	**0**	**4**	C	B	T	A							
2	T	S				**W**	**0**	**4**	C	B	T	A							
3	T	S				**W**	**0**	**4**	C	D	G	A							
3	T	S				**W**	**0**	**4**	C	D	K	A							
3	T	S				**W**	**0**	**4**	C	D	L	A							
3	T	S				**W**	**0**	**4**	C	D	T	A							
6	T	S				**W**	**0**	**4**	C	H	G	A							see **Note below
6	T	S				**W**	**0**	**4**	C	H	K	A							see **Note below
6	T	S				**W**	**0**	**4**	C	H	L	A							see **Note below
6	T	S				**W**	**0**	**4**	C	H	T	A							see **Note below

*Note: "T" (TBB - Terminal Block Board) in position 11 provides the natural pulse resolution of the meter (see Table 4A). The TBB can handle 5-12 V and 24 V power.

**Note: When using Teflon bearings, meter should operate at no more than 80% of nominal capacity to prevent excessing bearing wear.

FLOW METERS - Electronic

MODEL: TS

Register Ready OR with EMR4

ANODIZED ALUMINUM

No Strainer or Air Eliminator	**F14** - Flow Meter + Register Adaptor (Register Ready - EMR4)
	F64 - Flow Meter + EMR4 (EMR4 is Temp. Comp. capable - probe must be installed in a strainer or in an in-line fitting purchased separately)**
Strainer + Air Eliminator	**F16** - Flow Meter + Register Adaptor (Register Ready - EMR4) + Strainer + Air Eliminator
	F66 - Flow Meter + EMR4 (EMR4 is Temp. Comp. capable) + Strainer + Air Eliminator**
Strainer + Air Eliminator + Preset	**F63** - Flow Meter + EMR4 (EMR4 is Temp. Comp. capable) + Strainer + Air Eliminator + Solenoid Preset Valve**

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP **C** = ANSI Flange
Position 10 - Rotors / Bearings / SEALS	10	**A** = LV-PPS / Carbon / VITON • **B** = LV-PPS / Carbon / TEFLON • **V** = HV-PPS / Carbon / VITON
Position 11 - Components Included & Signal Conditioning	11	1 = EMR4 + TBB Signal Conditioning (5-12 VDC): **T** = TBB (Raw Pulse) • **G** = 100 PPG (26.4 PPL) • **L** = 10 PPL (37.8 PPG)
Position 12 -	12	**X** = Not Used
Position 13 - Language	13	**X** = Not Used • **E** = English • **S** = Spanish
Position 14 - Misc. Options	14	**X** = Not Used • **T** = Stnd. Strainer + TW/TP
Position 15 - Strainer Mesh	15	**X** = Not Used • **4** = 40 mesh • 2 = 20 Mesh
Position 16-17 - Solenoid Specifications	16 17	**12** = 12VDC **24** = 24VDC **28** = 110VAC **22** = 220 VAC
	18	**B** = Back Pressure Valve

	Rotors	Seals	Bearings
GROUP 1 - Standard Fuels	LV	V	C
GROUP 2 - E85	LV	T	C
GROUP 3 - ATF and High Temp	HV	V	C

LIST PRICES

	Anodized Aluminum				
US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		150	150	150	150
Bar:		10	10	10	10
Dia.		**1"**	**1½"**	**2"**	**3"**
POSITION 3,4, & 5:		**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	T	S				**F**	**1**	**4**	A	A	G	X	X	X	X			
1	T	S				**F**	**1**	**4**	A	A	T	X	X	X	X			
2	T	S				**F**	**1**	**4**	A	B	T	X	X	X	X			
3	T	S				**F**	**1**	**4**	A	V	T	X	X	X	X			
3	T	S				**F**	**1**	**4**	B	V	T	X	X	X	X			
1	T	S				**F**	**1**	**4**	B	A	L	X	X	X	X			
1	T	S				**F**	**1**	**4**	B	A	T	X	X	X	X			
2	T	S				**F**	**1**	**4**	B	B	T	X	X	X	X			
1	T	S				**F**	**1**	**6**	A	A	G	X	X	T	4			
1	T	S				**F**	**1**	**6**	A	A	T	X	X	T	4			
1	T	S				**F**	**1**	**6**	B	A	T	X	X	T	4			
1	T	S				**F**	**1**	**6**	B	A	L	X	X	T	4			
1	T	S				**F**	**6**	**3**	A	A	1	X	E	T	4	2	8	
1	T	S				**F**	**6**	**4**	A	A	1	X	E	X	X			
1	T	S				**F**	**6**	**4**	A	V	1	X	E	X	X			
1	T	S				**F**	**6**	**4**	B	A	1	X	E	X	X			
1	T	S				**F**	**6**	**4**	B	V	1	X	E	X	X			
1	T	S				**F**	**6**	**6**	A	A	1	X	E	T	4			
3	T	S				**F**	**6**	**6**	A	V	1	X	E	T	2			
3	T	S				**F**	**6**	**6**	A	V	1	X	S	T	2			
1	T	S				**F**	**6**	**6**	A	A	1	X	S	T	4			
1	T	S				**F**	**6**	**6**	B	A	1	X	E	T	4			
3	T	S				**F**	**6**	**6**	B	V	1	X	E	T	2			
1	T	S				**F**	**6**	**6**	B	A	1	X	S	T	4			

*Note: "T" (TBB - Terminal Block Board) in position 11 provides the natural pulse resolution of the meter (see Table 4A). The TBB can handle 5-12 V and 24 V power.

**** Interconnect Box, Cable, and Temperature Probe must be purchased separately**

FLOW METERS - Electronic

MODEL: TS

Register Ready OR with EMR4

STAINLESS STEEL

No Strainer or Air Eliminator	
	F14 - Flow Meter + Register Adaptor (Register Ready - EMR4)
	F64 - Flow Meter + EMR4 (EMR4 is Temp. Comp. capable - probe must be installed in a strainer or in an in-line fitting purchased separately)**

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP																
Position 10 - Rotors / Bearings / SEALS		10	**B** = LV-PPS / Carbon / PTFE • **D** = HV-PPS / Carbon / PTFE • **H** = HV-PPS / PTFE / PTFE															
Position 11 - Components Included & Signal Conditioning			11	1 = EMR4 + TBB ⍰4 = Mid:Com - AC with Back Light/10:1 Pulse Signal Conditioning (5-12 VDC): **T** = TBB (Raw Pulse) • **G** = 100 PPG (26.4 PPL) ⍰L = 10 PPL (37.8 PPG)													
Position 12 -				12	**X** = Not Used													
Position 13 - Language					13	**X** = Not Used • **E** = English • **S** = Spanish												
Position 14 - Misc. Options						14	**X** = Not Used **T** = Stnd. Strainer + TW/TP											
Position 15 - Strainer Mesh							15	**X** = Not Used • **4** = 40 mesh • 2 = 20 Mesh										
Position 16-17 - Solenoid Specifications								16	17	**12** = 12VDC **24** = 24VDC **28** = 110VAC **22** = 220 VAC								

	Rotors	Seals	Bearings
GROUP 2 - e85, 8 - Caustics (<49%)	LV	T	C
GROUP 3 - ATF and High Temp	HV	T	C

LIST PRICES

		Stainless Steel (316)			
US GPM:		40	60	150	200
LPM:		150	230	570	760
PSI:		150	150	150	150
Bar:		10	10	10	10
Dia.		**1"**	**1½"**	**2"**	**3"**
POSITION 3,4, & 5:		**10C**	**15C**	**20C**	**30C**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18					
2	T	S				**F**	**1**	**4**	A	B	G	X	X	X	X								
2	T	S				**F**	**1**	**4**	A	B	T	X	X	X	X								
3	T	S				**F**	**1**	**4**	A	D	G	X	X	X	X								
3	T	S				**F**	**1**	**4**	A	D	T	X	X	X	X								
2	T	S				**F**	**1**	**4**	B	B	T	X	X	X	X								
2	T	S				**F**	**1**	**4**	B	B	L	X	X	X	X								
3	T	S				**F**	**1**	**4**	B	D	T	X	X	X	X								
3	T	S				**F**	**1**	**4**	B	D	L	X	X	X	X								
2	T	S				**F**	**6**	**4**	A	B	1	X	E	X	X								
3	T	S				**F**	**6**	**4**	A	D	1	X	E	X	X								
2	T	S				**F**	**6**	**4**	B	B	1	X	E	X	X								
3	T	S				**F**	**6**	**4**	B	D	1	X	E	X	X								

*Note: "T" (TBB - Terminal Block Board) in position 11 provides the natural pulse resolution of the meter (see Table 4A).
The TBB can handle 5-12 V and 24 V power.

**** Interconnect Box, Cable, and Temperature Probe must be purchased separately**

FLOW METERS - Electronic - LPG

MODEL: TS

No Register Flange

ANODIZED ALUMINUM

Strainer + Air Eliminator	**S83** - Flow Meter (SINGLE), No Register Flange + Strainer (with Themowell) + Vapor Eliminator + Relief Valve + Differential Control Valve
	S84 - Flow Meter (TWIN), No Register Flange + Strainer (with Themowell) + Vapor Eliminator + Relief Valve + Differential Control Valve

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP
Position 10 - Rotors / Bearings / SEALS	10	**U** = UL, LV-SS / Carbon / BUNA (LPG)
Position 11 - Components Included & Signal Conditioning	11	Signal Conditioning (5-12 VDC): **P** = 380 PPG (100 PPL)
Position 12 - UL or ATEX (Interconnect Box)	12	**X** = N/A
Position 13 - Enclosure	13	**X** = N/A
Position 14 - Strainer / Other	14	**X** = N/A • **T** = Standard Strainer with 2 Thermo WellS
Position 15 - Strainer Mesh	15	**9** = 200 mesh

GROUP 4 - LPG	Rotors	Seals	Bearings
	LV	UL	C

LIST PRICES

	Anodized Aluminum				
US GPM:	20	40	60	150	200
LPM:	75	150	230	570	760
PSI:	350	350	350	350	350
Bar:	24	24	24	24	24
Dia.	¾"	1"	1½"	2"	3"
POSITION 3,4, & 5:	**06A**	**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
4	T	S				**S**	**8**	**3**	A	U	P	X	X	T	9			
4	T	S				**S**	**8**	**3**	B	U	P	X	X	T	9			
4	T	S				**S**	**8**	**4**	A	U	P	X	X	T	9			
4	T	S				**S**	**8**	**4**	B	U	P	X	X	T	9			

Register Ready OR with EMR4

Strainer + Air Eliminator	
	E86 - Flow Meter (SINGLE) + Register Adaptor (Register Ready) + Strainer (w/2Thermowells)+ Vapor Eliminator + Relief Valve + Differential Valve (DV)
	E96 - Flow Meter + EMR4 Register (Temp. Comp.) + Strainer (2 Thermowells) + Vapor Eliminator + Relief Valve + Differential Valve**
	F83 - Flow Meter + Strainer (w/2 Thermowell)+ Vapor Eliminator + Relief Valve + Differential Valve

Position 09 - Pipe Flanges	9	**A** = NPT • **B** = BSP
Position 10 - Rotors / Bearings / SEALS	10	**U** = UL, LV-SS / Carbon / BUNA (LPG)(06A only) U = LV-PPS / Carbon / BUNA (LPG)(10A) C = UL, LV-PPS / Carbon / BUNA (LPG)(20A)
Position 11 - Components Included	11	1 = EMR4 + TBB Signal Conditioning (5-12 VDC): **T** = TBB (raw pulse), **P** = 380 PPG (100 PPL), **G** = 100 PPG (26 PPL)
Position 12 - UL or ATEX (Interconnect Box)	12	**X** = N/A
Position 13 - Language	13	**X** = N/A • **E** = English • **S** = Spanish
Position 14 - Misc. Options	14	**X** = N/A • **A** = Security Valve
Position 15 - Strainer Mesh	15	**9** = 200 mesh

GROUP 4 - LPG	Rotors	Seals	Bearings
	LV	UL	C

LIST PRICES

	Anodized Aluminum				
US GPM:	20	40	60	150	200
LPM:	75	150	230	570	760
PSI:	350	350	350	350	350
Bar:	24	24	24	24	24
Dia.	¾"	1"	1½"	2"	3"
POSITION 3,4, & 5:	**06A**	**10A**	**15A**	**20A**	**30A**

FLUID GROUP	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
4	T	S				**E**	**9**	**6**	A	U	P	X	X	X	9			
4	T	S				**E**	**9**	**6**	B	U	P	X	X	X	9			
4	T	S				**F**	**8**	**3**	A	U	G	X	X	X	9			
4	T	S				**F**	**8**	**3**	A	U	T	X	X	X	9			
4	T	S				**E**	**9**	**6**	A	C	P	X	X	X	9			
4	T	S				**E**	**9**	**6**	B	C	P	X	X	X	9			
4	T	S				**F**	**8**	**3**	A	C	G	X	X	A	9			
4	T	S				**F**	**8**	**3**	A	C	T	X	X	X	9			

**** Interconnect Box, Cable, and Temperature Probe must be purchased separately**

FLANGES, STRAINERS, AIR ELIMINATORS, VALVES

Component	Works with	Description	Item Number	LIST PRICE
METER COMPANION FLANGES				
Meter Companion Flange (square)	TS06A	Aluminum - NPT - Viton Seals	FK06A-130	
Meter Companion Flange (square)	TS10A	Aluminum - NPT - Viton Seals	FK1110-1	
Meter Companion Flange (square)	TS15A	Aluminum - NPT - Viton Seals	FK1160-1	
Meter Companion Flange (square)	TS20A	Aluminum - NPT - Viton Seals	FK1200-1	
Meter Companion Flange (square)	TS30A	Aluminum - NPT - Viton Seals	FK1300-1	
Meter Companion Flange (square)	TS06A	Aluminum - NPT - Teflon Seals	FK06A-230	
Meter Companion Flange (square)	TS10A	Aluminum - NPT - Teflon Seals	FK2110-1	
Meter Companion Flange (square)	TS15A	Aluminum - NPT - Teflon Seals	FK2160-1	
Meter Companion Flange (square)	TS20A	Aluminum - NPT - Teflon Seals	FK2200-1	
Meter Companion Flange (square)	TS30A	Aluminum - NPT - Teflon Seals	FK2300-1	
Meter Companion Flange (square)	TS06A	Aluminum - BSPP - Viton Seals	FK06A-131	
Meter Companion Flange (square)	TS10A	Aluminum - BSPP - Viton Seals	FK1111-1	
Meter Companion Flange (square)	TS15A	Aluminum - BSPP - Viton Seals	FK1161-1	
Meter Companion Flange (square)	TS20A	Aluminum - BSPP - Viton Seals	FK1201-1	
Meter Companion Flange (square)	TS30A	Aluminum - BSPP - Viton Seals	FK1301-1	
Meter Companion Flange (square)	TS06A	Aluminum - BSPP - Viton Seals	FK06A-231	
Meter Companion Flange (square)	TS10A	Aluminum - BSPP - Teflon Seals	FK2111-1	
Meter Companion Flange (square)	TS15A	Aluminum - BSPP - Teflon Seals	FK2161-1	
Meter Companion Flange (square)	TS20A	Aluminum - BSPP - Teflon Seals	FK2201-1	
Meter Companion Flange (square)	TS30A	Aluminum - BSPP - Teflon Seals	FK2301-1	
Meter Companion Flange (square)	TS10A	Carbon Steel Weld Viton Seals	FK7110-1	
Meter Companion Flange (square)	TS15A	Carbon Steel Weld Viton Seals	FK7160-1	
Meter Companion Flange (square)	TS20A	Carbon Steel Weld Viton Seals	FK7200-1	
Meter Companion Flange (square)	TS30A	Carbon Steel Weld Viton Seals	FK7300-1	
Meter Companion Flange (square)	TS10A	Carbon Steel Weld Teflon Seals	FK7111-1	
Meter Companion Flange (square)	TS15A	Carbon Steel Weld Teflon Seals	FK7161-1	
Meter Companion Flange (square)	TS20A	Carbon Steel Weld Teflon Seals	FK7201-1	
Meter Companion Flange (square)	TS30A	Carbon Steel Weld Teflon Seals	FK7301-1	
Meter Companion Flange (square)	TS10A	Carbon Steel, 150# ANSI Viton Seals	FK5110-1	
Meter Companion Flange (square)	TS15A	Carbon Steel, 150# ANSI Viton Seals	FK5160-1	
Meter Companion Flange (square)	TS20A	Carbon Steel, 150# ANSI - Viton Seals	FK5200-1	
Meter Companion Flange (square)	TS30A	Carbon Steel, 150# ANSI - Viton Seals	FK5300-1	
Meter Companion Flange (square)	TS10A	Carbon Steel, 150# ANSI - Teflon Seals	FK5111-1	
Meter Companion Flange (square)	TS15A	Carbon Steel, 150# ANSI - Teflon Seals	FK5161-1	
Meter Companion Flange (square)	TS20A	Carbon Steel, 150# ANSI - Teflon Seals	FK5201-1	
Meter Companion Flange (square)	TS30A	Carbon Steel, 150# ANSI - Teflon Seals	FK5301-1	
Meter Companion Flange (square)	TS06C	Stainless Steel - NPT - Teflon Seals	FK06C-230	
Meter Companion Flange (square)	TS10C	Stainless Steel - NPT - Teflon Seals	FK9100-1	
Meter Companion Flange (square)	TS15C	Stainless Steel - NPT - Teflon Seals	FK9150-1	
Meter Companion Flange (square)	TS20C	Stainless Steel - NPT - Teflon Seals	FK9200-1	
Meter Companion Flange (square)	TS06C	Stainless Steel - BSPP - Teflon Seals	FK06C-231	
Meter Companion Flange (square)	TS10C	Stainless Steel - BSPP - Teflon Seals	FK9101-1	
Meter Companion Flange (square)	TS15C	Stainless Steel - BSPP - Teflon Seals	FK9151-1	
Meter Companion Flange (square)	TS20C	Stainless Steel - BSPP - Teflon Seals	FK9201-1	
Meter Companion Flange (square)	TS10C	Stainless Steel - Weld - Teflon Seals	FK0101-1	
Meter Companion Flange (square)	TS15C	Stainless Steel - Weld - Teflon Seals	FK0151-1	
Meter Companion Flange (square)	TS20C	Stainless Steel - Weld - Teflon Seals	FK0201-1	
Meter Companion Flange (square)	TS10C	Stainless Steel -150# ANSI - Teflon Seals	FK9104-1	
Meter Companion Flange (square)	TS15C	Stainless Steel -150# ANSI - Teflon Seals	FK9154-1	
Meter Companion Flange (square)	TS20C	Stainless Steel -150# ANSI - Teflon Seals	FK9204-1	

FLANGES, STRAINERS, AIR ELIMINATORS, VALVES

Component	Works with	Description	Item Number	LIST PRICE
STRAINER INLET FLANGES				
Strainer Inlet Flange (round)	TS15A	Aluminum - NPT - Viton Seals	FK1154-1	
Strainer Inlet Flange (round)	TS20A	Aluminum - NPT - Viton Seals	FK1204-1	
Strainer Inlet Flange (round)	TS30A	Aluminum - NPT - Viton Seals	FK1304-1	
Strainer Inlet Flange (round)	TS15A	Aluminum - NPT - Teflon Seals	FK2154-1	
Strainer Inlet Flange (round)	TS20A	Aluminum - NPT - Teflon Seals	FK2204-1	
Strainer Inlet Flange (round)	TS30A	Aluminum - NPT - Teflon Seals	FK2304-1	
Strainer Inlet Flange (round)	TS15A	Aluminum - BSPP - Viton Seals	FK1162-1	
Strainer Inlet Flange (round)	TS20A	Aluminum - BSPP - Viton Seals	FK1205-1	
Strainer Inlet Flange (round)	TS30A	Aluminum - BSPP - Viton Seals	FK1305-1	
Strainer Inlet Flange (round)	TS15A	Aluminum - BSPP - Teflon Seals	FK2155-1	
Strainer Inlet Flange (round)	TS20A	Aluminum - BSPP - Teflon Seals	FK2205-1	
Strainer Inlet Flange (round)	TS30A	Aluminum - BSPP - Teflon Seals	FK2305-1	
Strainer Inlet Flange (round)	TS15A	Carbon Steel Weld - Viton Seals	FK7154-1	
Strainer Inlet Flange (round)	TS20A	Carbon Steel Weld - Viton Seals	FK7204-1	
Strainer Inlet Flange (round)	TS30A	Carbon Steel Weld - Viton Seals	FK7304-1	
Strainer Inlet Flange (round)	TS15A	Carbon Steel Weld - Teflon Seals	FK7155-1	
Strainer Inlet Flange (round)	TS20A	Carbon Steel Weld - Teflon Seals	FK7205-1	
Strainer Inlet Flange (round)	TS30A	Carbon Steel Weld - Teflon Seals	FK7305-1	
Strainer Inlet Flange (round)	TS15A	Carbon Steel - Carbon Steel - 150# ANSI - Viton Seals	FK5154-1	
Strainer Inlet Flange (round)	TS20A	Carbon Steel - Carbon Steel - 150# ANSI - Viton Seals	FK5204-1	
Strainer Inlet Flange (round)	TS30A	Carbon Steel - Carbon Steel - 150# ANSI - Viton Seals	FK5304-1	
Strainer Inlet Flange (round)	TS15A	Carbon Steel150# ANSI - Teflon Seals	FK5155-1	
Strainer Inlet Flange (round)	TS20A	Carbon Steel150# ANSI - Teflon Seals	FK5205-1	
Strainer Inlet Flange (round)	TS30A	Carbon Steel150# ANSI - Teflon Seals	FK5305-1	
VALVE OUTLET FLANGES (for Mechanical and Solenoid Valves)				
Valve Outlet Flange (round)	TS10A	Aluminum - NPT - Viton Seals	FK1106-1	
Valve Outlet Flange (round)	TS15A	Aluminum - NPT - Viton Seals	FK1156-1	
Valve Outlet Flange (round)	TS20A	Aluminum - NPT - Viton Seals	FK1206-1	
Valve Outlet Flange (round)	TS30A	Aluminum - NPT - Viton Seals	FK1306-1	
Valve Outlet Flange (round)	TS10A	Aluminum - NPT - Teflon Seals	FK2106-1	
Valve Outlet Flange (round)	TS15A	Aluminum - NPT - Teflon Seals	FK2156-1	
Valve Outlet Flange (round)	TS20A	Aluminum - NPT - Teflon Seals	FK2206-1	
Valve Outlet Flange (round)	TS30A	Aluminum - NPT - Teflon Seals	FK2306-1	
Valve Outlet Flange (round)	TS10A	Carbon Steel Weld - Viton Seals	FK7106-1	
Valve Outlet Flange (round)	TS15A	Carbon Steel Weld - Viton Seals	FK7156-1	
Valve Outlet Flange (round)	TS20A	Carbon Steel Weld - Viton Seals	FK7206-1	
Valve Outlet Flange (round)	TS30A	Carbon Steel Weld - Viton Seals	FK7306-1	
Valve Outlet Flange (round)	TS10A	Carbon Steel Weld - Teflon Seals	FK7107-1	
Valve Outlet Flange (round)	TS15A	Carbon Steel Weld - Teflon Seals	FK7157-1	
Valve Outlet Flange (round)	TS20A	Carbon Steel Weld - Teflon Seals	FK7207-1	
Valve Outlet Flange (round)	TS30A	Carbon Steel Weld - Teflon Seals	FK7307-1	
Valve Outlet Flange (round)	TS10A	Aluminum - BSPP - Viton Seals	FK1107-1	
Valve Outlet Flange (round)	TS15A	Aluminum - BSPP - Viton Seals	FK1157-1	
Valve Outlet Flange (round)	TS20A	Aluminum - BSPP - Viton Seals	FK1207-1	
Valve Outlet Flange (round)	TS30A	Aluminum - BSPP - Viton Seals	FK1307-1	
Valve Outlet Flange (round)	TS10A	Aluminum - BSPP - Teflon Seals	FK2107-1	
Valve Outlet Flange (round)	TS15A	Aluminum - BSPP - Teflon Seals	FK2157-1	
Valve Outlet Flange (round)	TS20A	Aluminum - BSPP - Teflon Seals	FK2207-1	
Valve Outlet Flange (round)	TS30A	Aluminum - BSPP - Teflon Seals	FK2307-1	
Valve Outlet Flange (round)	TS10A	Carbon Steel -150# ANSI - Viton Seals	FK5106-1	
Valve Outlet Flange (round)	TS15A	Carbon Steel -150# ANSI - Viton Seals	FK5156-1	
Valve Outlet Flange (round)	TS20A	Carbon Steel -150# ANSI - Viton Seals	FK5206-1	
Valve Outlet Flange (round)	TS30A	Carbon Steel -150# ANSI - Viton Seals	FK5306-1	
Valve Outlet Flange (round)	TS10A	Carbon Steel -150# ANSI - Teflon Seals	FK5107-1	
Valve Outlet Flange (round)	TS15A	Carbon Steel -150# ANSI - Teflon Seals	FK5157-1	
Valve Outlet Flange (round)	TS20A	Carbon Steel -150# ANSI - Teflon Seals	FK5207-1	
Valve Outlet Flange (round)	TS30A	Carbon Steel -150# ANSI - Teflon Seals	FK5307-1	

FLANGES, STRAINERS, AIR ELIMINATORS, VALVES

Component	Works with	Description	Item Number	LIST PRICE
AIR ELIMINATORS				
AIR ELIMINATOR	TS Meters - Al	Aluminum - Standard Air Eliminator - Viton Seals - NPT	ACXXA11XA	
AIR ELIMINATOR	TS Meters - Al	Aluminum - Standard Air Eliminator - Teflon Seals - NPT	ACXXA11XB	
STRAINERS				
STRAINER (No Basket)	TS15A	Aluminum - Strainer with plain cover - Viton - NPT	AC16A21XAA	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with plain cover - Viton - NPT	AC20A21XAA	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with plain cover - Viton - NPT	AC30A21XAA	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with plain cover - Viton - BSPP	AC16A21XAB	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with plain cover - Viton - BSPP	AC20A21XAB	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with plain cover - Viton - BSPP	AC30A21XAB	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with plain cover - Teflon - NPT	AC16A21XBA	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with plain cover - Teflon - NPT	AC20A21XBA	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with plain cover - Teflon - NPT	AC30A21XBA	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with plain cover - Teflon - BSPP	AC16A21XBB	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with plain cover - Teflon - BSPP	AC20A21XBB	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with plain cover - Teflon - BSPP	AC30A21XBB	
STRAINER/AIR ELIMINATOR ASSEMBLY				
STRAINER (No Basket)	TS15A	Aluminum - Strainer with Std. Air Eliminator - Viton - NPT	AC16A22XAA	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with Std. Air Eliminator - Viton - NPT	AC20A22XAA	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with Std. Air Eliminator - Viton - NPT	AC30A22XAA	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with Std. Air Eliminator - Viton - BSPP	AC16A22XAB	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with Std. Air Eliminator - Viton - BSPP	AC20A22XAB	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with Std. Air Eliminator - Viton - BSPP	AC30A22XAB	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with Std. Air Eliminator - Teflon - NPT	AC16A22XBA	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with Std. Air Eliminator - Teflon - NPT	AC20A22XBA	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with Std. Air Eliminator - Teflon - NPT	AC30A22XBA	
STRAINER (No Basket)	TS15A	Aluminum - Strainer with Std. Air Eliminator - Teflon - BSPP	AC16A22XBB	
STRAINER (No Basket)	TS20A	Aluminum - Strainer with Std. Air Eliminator - Teflon - BSPP	AC20A22XBB	
STRAINER (No Basket)	TS30A	Aluminum - Strainer with Std. Air Eliminator - Teflon - BSPP	AC30A22XBB	
STRAINER BASKET				
STRAINER BASKET	TS15 and TS20	Aluminum - 20 Mesh	SA3008-020	
STRAINER BASKET	TS15 and	Aluminum - 40 Mesh	SA3008-040	
STRAINER BASKET	TS15 and	Aluminum - 100 Mesh	SA3008-100	
STRAINER BASKET	TS15 and	Aluminum - 200 Mesh	SA3008-200	
STRAINER BASKET	TS30	Aluminum - 20 Mesh	SA3010-020	
STRAINER BASKET	TS30	Aluminum - 40 Mesh	SA3010-040	
STRAINER BASKET	TS30	Aluminum - 80 Mesh	SA3010-080	

FLANGES, STRAINERS, AIR ELIMINATORS, VALVES

Component	Works with	Description	Item Number	LIST PRICE
VALVES - BACK PRESSURE				
BACK PRESSURE VALVE	TS15A & TS20A	Plated Steel - Spring Loaded	VP1901	
BACK PRESSURE VALVE	TS30A	Plated Steel - Spring Loaded	VP1930	
VALVES - PRESET - MECHANICAL*				
VALVE - PRESET - Mechanical	TS15A	Aluminum - VITON Seals - NPT - with linkage, (90° inlet/outlet), includes flange	AC16A61XAA	
VALVE - PRESET - Mechanical	TS20A	Aluminum - VITON Seals - NPT - with linkage, (90° inlet/outlet), includes flange	AC20A61XAA	
VALVE - PRESET - Mechanical	TS30A	Aluminum - VITON Seals - NPT -with linkage, (90° inlet/outlet), includes flange	AC30A61XAA	
VALVE - PRESET - Mechanical	TS15A	Aluminum - VITON Seals - BSPP - with linkage, (90° inlet/outlet), includes flange	AC16A61XAB	
VALVE - PRESET - Mechanical	TS20A	Aluminum - VITON Seals - BSPP - with linkage, (90° inlet/outlet), includes flange	AC20A61XAB	
VALVE - PRESET - Mechanical	TS30A	Aluminum - VITON Seals - BSPP -with linkage, (90° inlet/outlet), includes flange	AC30A61XAB	
VALVE - PRESET - Mechanical	TS15A	Aluminum - TEFLON Seals - NPT - with linkage, (90° inlet/outlet), includes flange	AC16A61XBA	
VALVE - PRESET - Mechanical	TS20A	Aluminum - TEFLON Seals - NPT - with linkage, (90° inlet/outlet), includes flange	AC20A61XBA	
VALVE - PRESET - Mechanical	TS30A	Aluminum - TEFLON Seals - NPT -with linkage, (90° inlet/outlet), includes flange	AC30A61XBA	
VALVE - PRESET - Mechanical	TS15A	Aluminum - TEFLON Seals - BSPP - with linkage, (90° inlet/outlet), includes flange	AC16A61XBB	
VALVE - PRESET - Mechanical	TS20A	Aluminum - TEFLON Seals - BSPP - with linkage, (90° inlet/outlet), includes flange	AC20A61XBB	
VALVE - PRESET - Mechanical	TS30A	Aluminum - TEFLON Seals - BSPP -with linkage, (90° inlet/outlet), includes flange	AC30A61XBB	
VALVES - SYSTEM SECURITY VALVE - ELECTRICAL - 1-STAGE CLOSE				
VALVE - SECURITY - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 1-Stage (110VAC) - Ex-Prf - UL	AC16A72XAA1	
VALVE - SECURITY - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 1-Stage (110VAC) - Ex-Prf - UL	AC20A72XAA1	
VALVE - SECURITY - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 1-Stage (110VAC) - Ex-Prf - UL	AC30A72XAA1	
VALVE - SECURITY - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 1-Stage (220VAC) - Ex-Prf - UL	AC16A72XAA2	
VALVE - SECURITY - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 1-Stage (220VAC) - Ex-Prf - UL	AC20A72XAA2	
VALVE - SECURITY - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 1-Stage (220VAC) - Ex-Prf - UL	AC30A72XAA2	
VALVES - PRESET VALVE - ELECTRICAL - 2-STAGE CLOSE				
VALVE - PRESET - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 2-Stage (12VDC) - Ex-Prf - UL	AC16A74XAA3	
VALVE - PRESET - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 2-Stage (12VDC) - Ex-Prf - UL	AC20A74XAA3	
VALVE - PRESET - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 2-Stage (12VDC) - Ex-Prf - UL	AC30A74XAA3	
VALVE - PRESET - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 2-Stage (24VDC) - Ex-Prf - UL	AC16A74XAA4	
VALVE - PRESET - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 2-Stage (24VDC) - Ex-Prf - UL	AC20A74XAA4	
VALVE - PRESET - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 2-Stage (24VDC) - Ex-Prf - UL	AC30A74XAA4	
VALVE - PRESET - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 2-Stage (110VAC) - Ex-Prf - UL	AC16A74XAA1	
VALVE - PRESET - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 2-Stage (110VAC) - Ex-Prf - UL	AC20A74XAA1	
VALVE - PRESET - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 2-Stage (110VAC) - Ex-Prf - UL	AC30A74XAA1	
VALVE - PRESET - Electrical	TS15A	Aluminum - UL - VITON Seals - NPT - 2-Stage (220VAC) - Ex-Prf - UL	AC16A74XAA2	
VALVE - PRESET - Electrical	TS20A	Aluminum - UL - VITON Seals - NPT - 2-Stage (220VAC) - Ex-Prf - UL	AC20A74XAA2	
VALVE - PRESET - Electrical	TS30A	Aluminum - UL - VITON Seals - NPT - 2-Stage (220VAC) - Ex-Prf - UL	AC30A74XAA2	

REGISTERS, PRINTERS, PRESETS - MECHANICAL

Component	Works with	Description	Item Number	LIST PRICE
MECHANCIAL REGISTERS				
REGISTER - Mechanical	TS Meters	VR 7887 - Gallons 1/10 - 5 digit register	RG3005	
REGISTER - Mechanical	TS Meters	VR 7887 - Whole liter -	RG3009	
REGISTER - Mechanical	TS Meters	VR 7886 - Gallons 1/10 - 6 digit register	RG3005-HC	
REGISTER - Mechanical	TS Meters	VR 7886 - Whole liter -	RG3009-HC	
MECHANCIAL REGISTERS - PULSE GENERATOR				
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - UL version, replacement module - 10:1 dry reed	EL1004	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - UL version, complete, 10:1 dry reed	VR1000	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - ATEX version, replacement module - 10:1 dry reed	EL1004-A	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - ATEX version, complete, 10:1 dry reed	VR1000-A	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - UL version, replacement module - 100:1 solid state	EL1005	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - UL version, complete, 100:1 solid state	VR1001	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - ATEX version, replacement module - 100:1 solid state	EL1005-A	
PULSE GENERATOR - Mechanical	TS Meters	Pulse generator - ATEX version, complete, 100:1 solid state	VR1001-A	
PRESET COUNTER				
PRESET COUNTER - Mechanical	TS15, TS20, TS30	VR 7889 - 5 digit preset counter, 2-stage shut-off	RG3006	
PRESET COUNTER - Mechanical	TS15, TS20, TS30	Micro Switch Ass. - In X-Prf case - UL/cUL version	EL1506	
PRESET COUNTER - Mechanical	TS15, TS20,	Micro Switch Ass. - In X-Prf case - ATEX listed micro switches	EL1506-A	
PRINTERS				
TICKET PRINTER - Mechanical	TS15, TS20, TS30	VR 7888 - Zero Start	RG3007	
RATIO GEAR PLATE				
RATIO GEAR PLATE - Mechanical	TS10A	Ratio Gear Plate - Short Shaft - 1/10 gallon	GPTS10T1	
RATIO GEAR PLATE - Mechanical	TS10C	Ratio Gear Plate - Short Shaft - 1/10 gallon	GP560T2-1	
RATIO GEAR PLATE - Mechanical	TS15A	Ratio Gear Plate - Short Shaft - 1/10 gallon	GPTS15-70T2-1	
RATIO GEAR PLATE - Mechanical	TS15C	Ratio Gear Plate - Short Shaft - 1/10 gallon	GP580T2-1	
RATIO GEAR PLATE - Mechanical	TS20A - 150 GPM	Ratio Gear Plate - Short Shaft - 1/10 gallon	GPTS2HT1-1	
RATIO GEAR PLATE - Mechanical	TS30A	Ratio Gear Plate - Short Shaft - whole gallon	GP5201G2-1	
RATIO GEAR PLATE - Mechanical	TS30C	Ratio Gear Plate - Short Shaft - whole gallon	GP5201G2-1	
RATIO GEAR PLATE - Mechanical	TS10A	Ratio Gear Plate - Short Shaft - 1/10 liter	GPTS10Y1	
RATIO GEAR PLATE - Mechanical	TS10C	Ratio Gear Plate - Short Shaft - whole liter	GP560L2-1	
RATIO GEAR PLATE - Mechanical	TS15A	Ratio Gear Plate - Short Shaft - whole liter	GPTS15-70L2-1	
RATIO GEAR PLATE - Mechanical	TS15C	Ratio Gear Plate - Short Shaft - whole liter	GP580L2-1	
RATIO GEAR PLATE - Mechanical	TS20A - 150 GPM	Ratio Gear Plate - Short Shaft - whole liter	GPTS2HL1-1	
RATIO GEAR PLATE - Mechanical	TS30A	Ratio Gear Plate - Short Shaft - whole liter	GP590L2-1	
RATIO GEAR PLATE - Mechanical	TS30C	Ratio Gear Plate - Short Shaft - whole liter	GP590L2-1	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - Whole Gallon - Up/Down	GP5201G-UD	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - Whole Liter - Up/Down	GP5201L-UD	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - 1/10 Gallon	GP5201T1-1	
RATIO GEAR PLATE - Mechanical	TS10C	Ratio Gear Plate - Whole Liter	GP560L	
RATIO GEAR PLATE - Mechanical	TS10C	Ratio Gear Plate - Whole Liter - Up/Down	GP560L-UD	
RATIO GEAR PLATE - Mechanical	TS10C	Ratio Gear Plate - 1/10 Gallon - Up/Down	GP560T-UD	
RATIO GEAR PLATE - Mechanical	TS15C	Ratio Gear Plate - Whole Liter - Up/Down	GP580L2-1-UD	
RATIO GEAR PLATE - Mechanical	TS15C	Ratio Gear Plate - 1/10 Gallon - Up/Down	GP580T2-1-UD	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - Whole Liter	GP590L2-1	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - Whole Liter - Up/Down	GP590L-UD	
RATIO GEAR PLATE - Mechanical	TS15A	Ratio Gear Plate - 1/10 Gallon - Up/Down	GPTS15-70T2-1-UD	
RATIO GEAR PLATE - Mechanical	TS20A & C	Ratio Gear Plate - Whole Liter - Up/Down	GPTS2HL1-1-UD	
RATIO GEAR PLATE - Mechanical	TS20A & C	Ratio Gear Plate - 1/10 Gallon - Up/Down	GPTS2HT1-1-UD	
RATIO GEAR PLATE - Mechanical	TS20A & C	Ratio Gear Plate - Whole Gallon	GPTS2HW1-2	
RATIO GEAR PLATE - Mechanical	TS30A & C	Ratio Gear Plate - Whole Liter - Up/Down	GPTS30L-UD	

REGISTERS, PRINTERS, PRESETS - ELECTRICAL

Component	Works with	Description	Item Number	LIST PRICE
ELECTRICAL METER REGISTERS - EMR4				
REGISTER - EMR4	TS Meters	Register Head (E) - EMR4 register head, English front panel	EL845593-003	
REGISTER - EMR4	TS Meters	Register Head (S) - EMR4 register head, Spanish front panel	EL845594-003	
REGISTER - EMR4	TS Meters	Register Head (F) - EMR4 register head, French front panel	EL845592-003	
The EMR4 register requires a special cable between the EMR4 head, and the Interconnect Box (IB), which must be located under roof outside of the hazardous zone. Original V-R cable must be used, otherwise neither Tuthill nor Veeder-Root can support the installation/programming/start-up process.				
EMR4 ACCESSORIES				
Remote Kit	TS Meters	Remote EMR4 Kit - Installation kit for remote EMR4 register head	AK4100	
Thermowell Kit	TS Meters	THERMOWELL KIT	EL331373-001	
Printer - Power/Data Cable	TS Meters	PRINTER POWER / DATA CABLE	EL845900-313	
Temperature Prope	TS Meters	TEMP PROBE KIT, VR	EL845900-302	
Key Pad	TS Meters	OPTIONAL KEY PAD KIT, VR, Right	EL845900-014	
Pulser Kit	TS Meters	PULSER KIT, VR, ELEC,W/ MOUNTING BRACKET	EL845900-015	
Emergency Stop	TS Meters	EMERGENCY STOP SWITCH, VR	EL845900-021	
Data Link - Office Kit - 900 MHz	TS Meters	EMR4 DATA LINK, OFFICE KIT- RECEIVER 900 MHZ	EL845900-030	
Data Link - Truck Kit - 900 MHz	TS Meters	DATALINK TRUCKIT W/ KEYPAD 2.4GHZ MODEM, 900MHZ	EL845900-032	
Antenna	TS Meters	KIT - HIGH GAIN ANTENNA	EL845900-033	
Data Link - Office Kit - 2.4 GHz Modem	TS Meters	EMR4 DataLink Office Kit - 2.4 GHZ Modem	EL845900-034	
Data Link Kit, IB to PC	TS Meters	EMR4 DATA LINK KIT, IB TO PC	EL845900-038	
EMR4 Display Module (EN)	TS Meters	EMR4 DISPLAY MODULE, ENG, VOLUME, $, TC, ENGLISH	EL845900-068	
Interconnect Box (IB) (Board)	TS Meters	IB BOARD WITH SOFTWARE	EL845900-074	
Cable Kit	TS Meters	CABLE KIT,VR,100', 4 WIRE,2 PAIR,18 AWG	EL846000-101	
Cable Kit	TS Meters	CABLE KIT, VR, 200', REG TO IB BOX CONN.	EL846000-102	
Cable Kit	TS Meters	CABLE KIT, VR, 300', REG TO IB BOX CONN.	EL846000-103	
Cable Kit	TS Meters	CABLE KIT, VR, 500', REG TO IB BOX CONN.	EL846000-105	
Cable Kit	TS Meters	CABLE KIT, VR, 35', REG TO IB BOX CONN.	EL846000-106	
EMR4 Install Kit	TS Meters	INSTALL KIT, TC, LC	EL845900-306	
Register - EMR4	TS Meters	REGISTER, ELEC,VR,VOL/ RATE,CURR,C&C,TC	EL845593-003	
Register - EMR4	TS Meters	REGISTER,VR,CUR,VOL./ RATE, TEMP,SPAN.	EL845594-003	
Interconnect Box (IB)	TS Meters	IB box, UL/cUL, 12/24V, 4 relays, Time/D	EL845790-001	
Interconnect Box (IB)	TS Meters	IB box, ATEX, 12/24V, 4 relays, Time/Da	EL845760-001	
Mounting - OMM4	TS Meters	MOUNTING BRACKET FOR REMOTE DISPLAY	EL845900-024	
Printer - EPSON - Slip	TS Meters	EPSON table top printer, slip type	TM-U295-071	
Printer - EPSON - Roll	TS Meters	EPSON table top printer, roll type	TM-U220-103	

ELECTRICAL METER - SIGNAL CONDITIONERS, AMPLIFIERS

ISOLATOR-AMPLIFIER-SPLITTER	TM and TS	PIA-300 - Pulse Isolator, Amplifier and Splitter - Bare Unit	EL6630	
ISOLATOR-AMPLIFIER-SPLITTER	TM and TS	PIA-300 - Pulse Isolator, Amplifier and Splitter - in NEMA 4X encl.	ER-T0C-W	
ISOLATOR-AMPLIFIER-SPLITTER	TM and TS	PIA-300 - Pulse Isolator, Amplifier and Splitter - in NEMA 7/4X encl.	ER-T0E-W	

ELECTRICAL METER - SIGNAL CONDITIONERS

SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18B	
SIGNAL CONDITIONERS	TS10C	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18A	
SIGNAL CONDITIONERS	TS15A	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18C	
SIGNAL CONDITIONERS	TS15C	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18D	
SIGNAL CONDITIONERS	TS20A, TS20C	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18E	
SIGNAL CONDITIONERS	TS30A, TS30C	SCL - Signal conditioner & calibrator , TS Series 10 PPL scaler	EL0300-3-18F	
SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13B	
SIGNAL CONDITIONERS	TS10C	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13A	
SIGNAL CONDITIONERS	TS15A	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13C	
SIGNAL CONDITIONERS	TS15C	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13D	
SIGNAL CONDITIONERS	TS20A, TS20C	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13E	
SIGNAL CONDITIONERS	TS30A, TS30C	SCL - Signal conditioner & calibrator , TS Series 100 PPG scaler	EL0300-3-13F	
SIGNAL CONDITIONERS	TS Meters	SCL - Signal conditioner & calibrator , calibrator/Quadrature Filter only	EL0300-3-17U	
SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator 100 PPL, TS10A, 12V, EE0113	EL0300-3-15B	
SIGNAL CONDITIONERS	TS15A	SCL - Signal conditioner & calibrator 100 PPL, TS15A, 12V, EE0115	EL0300-3-15C	
SIGNAL CONDITIONERS	TS10D	SCL - Signal conditioner & calibrator 100 PPG, TS10D, 24V, EE0101	EL0300-5-13A	
SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator 100 PPG, TS10A, 24V, EE0102	EL0300-5-13B	
SIGNAL CONDITIONERS	TS15A	SCL - Signal conditioner & calibrator 100 PPG, TS15A, 24V, EE0103	EL0300-5-13C	
SIGNAL CONDITIONERS	TS15C	SCL - Signal conditioner & calibrator 100 PPG, TS15C, 24V, EE0104	EL0300-5-13D	
SIGNAL CONDITIONERS	TS20A / C	SCL - Signal conditioner & calibrator 100 PPG, TS20A / C, 24 V, EE0105	EL0300-5-13E	
SIGNAL CONDITIONERS	TS30A / C	SCL - Signal conditioner & calibrator 100 PPG, TS30A / C, 24V, EE0106	EL0300-5-13F	
SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator 100 PPL, TS10A, 24V, EE0113	EL0300-5-15B	
SIGNAL CONDITIONERS	24 VDC	SCL - Signal conditioner & calibrator QUAD FILTER, 24 VDC, EE UNIT	EL0300-5-17U	
SIGNAL CONDITIONERS	TS10A	SCL - Signal conditioner & calibrator 10 PPL, TS10A, 24V, EE0117	EL0300-5-18B	
SIGNAL CONDITIONERS	TS15A / C	SCL - Signal conditioner & calibrator 10 PPL, TS15A / C, 24V, EE0118	EL0300-5-18C	
SIGNAL CONDITIONERS	TS15C	SCL - Signal conditioner & calibrator 10 PPL, TS15C, 24VDC, EE0119	EL0300-5-18D	
SIGNAL CONDITIONERS	TS20A/C	SCL - Signal conditioner & calibrator 10 PPL, TS20A/C, 24V, EE0120	EL0300-5-18E	

REGISTERS, PRINTERS, PRESETS - ELECTRICAL

Component	Works with	Description	Item Number	LIST PRICE
ELECTRICAL METER ACCESSORIES				
Solenoid protection kits are required (1 per solenoid). These are supplied N/C when a Tuthill solenoid valve is used, but must be purchased separately if the solenoid valve is sourced from other side.				
Solenoid Protection Kits	TS Meters	for DC Solenoids	EL846000-022	NP
Solenoid Protection Kits	TS Meters	for AC Solenoids	EL846000-MOV	
Temperature probe	TS Meters	Temperature probe	EL846000-002	

REFERENCE TABLES

FLUID GROUP	MATERIAL	ROTORS		BEARINGS	SEALS	FLUIDS
1 STANDARD FUELS	AA or SS	LV	PPS	Carbon	Viton™	Aviation Fuel, Bio-Diesel, Diesel Fuel, Light Fuel Oil, Gasoline, Glycols, Kerosene & Water.
2 E85	AA or SS	LV	PPS	Carbon	Teflon™	For E85, ethanol, methanol & solvents. Not for use on halogenated solvents!
3 Automatic Transmission Fluid (ATF) and HIGH TEMP	AA or SS	HV	PPS	Carbon	Viton™	For automatic transmission fluid, hydraulic oils, automotive lube oil & gear oil; fuel oil with viscosity > 300 cSt., Heated oils, 120-180°F (50-80°C)
4 LPG (Liquified Petroleum Gas)	AA	LV	PPS	Carbon	UL listed, Buna N & Viton™	LPG
5 DEF (Diesel Exhaust Fluid)	SS	LV	SS	Proprietary	Viton™	DEF - Dispenser (TS06C)
		LV	PPS	Teflon™	Teflon™	DEF - Bulk Transfer (TS10C-TS20C)
6 HERB/PESTICIDE	AA or SS	HV	PPS	Teflon™	Teflon™	Herbicides & Pesticides
7 FERTILIZER	AA or SS	LV	PPS	Teflon™	Viton™	Fertilizer
8 CAUSTICS	SS	LV	PPS	Carbon	Teflon™	Caustics (1-49% concentration)
		LV	PPS	Teflon™	Teflon™	Caustics (50% & higher conc.)

LV = Low Viscosity, HV = High Viscosity, AA = Anodized Aluminum, SS = Stainless Steel, PPS = Polyphenylene Sulfide resin

Fuel Sentry Specifications - Totalizers

Model 6116	Model 6127	
•	•	Calculated rate, Total, Cumulative Total
•	•	Scaled Pulse Signal
•	•	Passive Analog (4-20 mA signal)
	•	Temperature Compensation on both channels (use 2-wire or 3-wire PT100, platinum RTD - 100 Ohm at 0° C – probes)

Fuel Sentry Specifications - TM Meters

	TM02D				TM03A TM03D				TM04A TM04D				TM06A TM06D			
Connections: NPT or BSP	¼"				⅜"				½"				¾"			
Nominal Capacity on 1 cSt viscosity with 10:1 turndown:	US GPM **0.3**	LPM **1.1**	US GPH **18**	LPH **68**	US GPM **3**	LPM **11**	US GPH **180**	LPH **680**	US GPM **10**	LPM **38**	US GPH **600**	LPH **2250**	US GPM **20**	LPM **76**	US GPH **1200**	LPH **4500**
Pressure Rating at 100°F (38°C), with 3:1 Safety Factor:	PSI 1500		Bar 103		PSI 1500		Bar 103		PSI 1500		Bar 103		PSI 1500		Bar 103	
Temperature Rating*	°F		°C		°F		°C		°F		°C		°F		°C	
Low	-40		-40		-40		-40		-40		-40		-40		-40	
High	300		150		300		150		300		150		300		150	
Viscosity	100% Nominal capacity up to 200 cSt, reduced Capacity up to 350,000 cSt															
Pulser	Hall Effect (Quadrature)															
Nominal Pulse Resolution (PPG)	at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt	
	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL
Hall Effect	7700	2034	7300	1930	2800	740	2660	703	805	212	777	205	405	107	390	103
Reed Switch	3850	1017	3650	965	700	185	665	176	201	53	194	51	101	27	98	26
Linearity over the 10:1 Turndown range	± 2.0%				± 1.0%				± 0.5%				± 0.5%			
Repeatability	± 0.5%				± 0.5%				± 0.25%				± 0.25%			

Fuel Sentry Specifications - TS Meters

	TS10A				TS10C				TS15A				TS15C			
Connections: NPT or BSP	1"				1"				1½"				1½"			
Nominal Capacity on 1 cSt viscosity with 10:1 turndown:	US GPM **40**	LPM **150**	US GPH **2400**	LPH **9000**	US GPM **40**	LPM **150**	US GPH **2400**	LPH **9000**	US GPM **60**	LPM **230**	US GPH **3600**	LPH **13800**	US GPM **60**	LPM **230**	US GPH **3600**	LPH **13800**
Pressure Rating at 100°F (38°C), with 3:1 Safety Factor:	PSI 400		Bar 28		PSI 400		Bar 28		PSI 400		Bar 28		PSI 400		Bar 28	
Temperature Rating*	°F		°C		°F		°C		°F		°C		°F		°C	
Low	-40		-40		-40		-40		-40		-40		-40		-40	
High	257		125		257		125		257		125		257		125	
Viscosity	100% Nominal capacity up to 300 cSt, reduced Capacity up to 350,000 cSt															
Pulser	Hall Effect (Quadrature)															
Nominal Pulse Resolution (PPG)	at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt		at 1 cSt		at 100 cSt	
	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL	PPG	PPL
Hall Effect	1728	457			2176	575			1013	268			1152	304		
Linearity over the 10:1 Turndown range	± 0.25%				± 0.25%				± 0.25%				± 0.25%			
Repeatability	± 0.05%				± 0.05%				± 0.05%				± 0.05%			

Model 6116	Model 6127	
•	•	Calculated rate, Total, Cumulative Total
•	•	Scaled Pulse Signal
•	•	Passive Analog (4-20 mA signal)
	•	Temperature Compensation on both channels (use 2-wire or 3-wire PT100, platinum RTD - 100 Ohm at 0° C – probes)

Viscosity Table - TS Meters

Rotor / Flow / Visc. Key

Category	Rotor Type	% of Rated Meter Flow	Maximum Viscosity
A	HV	11%	100,000
B	HV	19%	50,000
C	HV	41%	10,000
D	HV	65%	3,000
E	HV	**100%**	3,000
F	LV	54%	3,000
G	LV	**100%**	300

NOTE:
Preset -
Mechanical Preset Valve Limit = 1,000 cSt
Electronic Preset Valve Limit = 50 cSt

Viscosity Table

	°F	0		10		20		30		40		50		60		70		80		90		100	
	°C	-18		-12		-7		-1		4		10		16		21		27		32		38	
		Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.
LUBE OIL	85W140	170,000	A	70,000	A	32,000	B	17,000	B	8,000	C	5,000	C	3,000	D	1,800	D	1,100	D	750	E/F	480	E/F
	SAE50	55,000	A	28,000	B	12,000	B	6,500	C	3,800	C	2,100	D	1,300	D	820	E/F	550	E/F	385	E/F	270	G
	SAE40	30,000	B	14,000	B	6,800	C	3,800	C	2,150	D	1,300	D	800	E/F	500	E/F	335	E/F	245	G	175	G
	15W40	10,000	C	5,500	C	3,000	C	1,850	D	1,150	D	750	E/F	490	E/F	330	E/F	240	G	175	G	135	G
	SAE30	14,000	B	8,000	C	3,800	C	2,150	D	1,300	D	775	E/F	480	E/F	340	E/F	235	G	165	G	120	G
	20W40	7,500	C	4,500	C	2,400	D	1,500	D	950	E/F	650	E/F	400	E/F	300	G	200	G	155	G	120	G
	10W30	2,000	D	1,100	D	800	E/F	500	E/F	355	E/F	240	G	180	G	135	G	100	G	78	G	65	G
	5W20	850	E/F	530	E/F	340	E/F	220	G	155	G	115	G	82	G	64	G	49	G	39	G	31	G
HYDRAULIC OIL	ISO360	175,000	A	70,000	A	35,000	B	16,000	B	7,900	C	4,400	C	2,500	D	1,500	D	850	E/F	600	E/F	360	E/F
	ISO260	80,000	A	38,000	B	17,000	B	8,000	C	4,400	C	2,500	D	1,500	D	840	E/F	550	E/F	360	E/F	260	G
	ISO160	35,000	B	16,000	B	7,500	C	4,000	C	2,300	D	1,300	D	800	E/F	550	E/F	340	E/F	240	G	160	G
	ISO99	15,000	B	7,500	C	3,700	C	1,950	D	1,150	D	750	E/F	430	E/F	290	G	200	G	140	G	99	G
	ISO68	6,000	C	3,000	D	1,500	D	940	E/F	600	E/F	370	E/F	240	G	170	G	120	G	85	G	68	G
	ISO46	3,000	D	1,600	D	900	E/F	550	E/F	350	E/F	235	G	155	G	110	G	78	G	58	G	46	G
	ISO32	1,250	D	780	E/F	460	E/F	300	G	200	G	140	G	95	G	70	G	52	G	39	G	32	G
	ATF (Shell Donax TG)	800	E/F	480	E/F	325	E/F	230	G	165	G	125	G	95	G	70	G	55	G	45	G	37	G
	Propylene Glycol	1,400	D	900	D	480	E/F	300	G	180	G	130	G	90	G	60	G	40	G	28	G	23	G
	P66 Transformer Oil	135	G	90	G	65	G	48	G	37	G	29	G	22	G	17	G	15	G	12	G	9.5	G

Viscosity Table - TM Meters

Rotor / Flow / Visc. Key

Category		% of Rated Meter Flow	Maximum Viscosity
A		4%	50,000
B		12%	7,500
C		35%	2,000
D		60%	800
E		100%	200

Viscosity Table

	°F	0		10		20		30		40		50		60		70		80		90		100	
	°C	-18		-12		-7		-1		4		10		16		21		27		32		38	
		Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.	Viscosity (cSt)	Rotor / Flow / Visc.
LUBE OIL	85W140	170,000	n/a	70,000	n/a	32,000	A	17,000	A	8,000	A	5,000	B	3,000	B	1,800	C	1,100	C	750	D	480	D
	SAE50	55,000	n/a	28,000	A	12,000	A	6,500	B	3,800	B	2,100	B	1,300	C	820	C	550	D	385	D	270	D
	SAE40	30,000	A	14,000	A	6,800	B	3,800	B	2,150	B	1,300	C	800	D	500	D	335	D	245	D	175	E
	15W40	10,000	A	5,500	B	3,000	B	1,850	C	1,150	C	750	D	490	D	330	D	240	D	175	E	135	E
	SAE30	14,000	A	8,000	A	3,800	B	2,150	B	1,300	C	775	D	480	D	340	D	235	D	165	E	120	E
	20W40	7,500	B	4,500	B	2,400	B	1,500	C	950	C	650	D	400	D	300	D	200	E	155	E	120	E
	10W30	2,000	C	1,100	C	800	C	500	D	355	D	240	D	180	E	135	E	100	E	78	E	65	E
	5W20	850	C	530	D	340	C	220	D	155	E	115	E	82	E	64	E	49	E	39	E	31	E
HYDRAULIC OIL	ISO360	175,000	n/a	70,000	n/a	35,000	A	16,000	A	7,900	A	4,400	B	2,500	B	1,500	C	850	C	600	D	360	D
	ISO260	80,000	n/a	38,000	A	17,000	A	8,000	A	4,400	B	2,500	B	1,500	C	840	C	550	D	360	D	260	D
	ISO160	35,000	A	16,000	A	7,500	B	4,000	B	2,300	B	1,300	C	800	C	550	D	340	D	240	D	160	E
	ISO99	15,000	A	7,500	B	3,700	B	1,950	C	1,150	C	750	D	430	D	290	D	200	E	140	E	99	E
	ISO68	6,000	B	3,000	B	1,500	C	940	C	600	D	370	D	240	D	170	E	120	E	85	E	68	E
	ISO46	3,000	B	1,600	C	900	C	550	D	350	D	235	D	155	E	110	E	78	E	58	E	46	E
	ISO32	1,250	C	780	D	460	D	300	D	200	E	140	E	95	E	70	E	52	E	39	E	32	E
ATF (Shell Donax TG)		800	D	480	D	325	D	230	D	165	E	125	E	95	E	70	E	55	E	45	E	37	E
Propylene Glycol		1,400	C	900	C	480	D	300	D	180	E	130	E	90	E	60	E	40	E	28	E	23	E
P66 Transformer Oil		135	E	90	E	65	E	48	E	37	E	29	E	22	E	17	E	15	E	12	E	9.5	E

W&M Certification		US	Canada	EU	Australia
EMR4 Electronic Register (Veeder Root)		YES	YES	YES	
TS06	with SCL	YES	Pending		
TS10	Mechanical	YES			
	Electronic, with EMR4	YES			
	Electronic, with SCL	YES			
	Electronic, with Wave Form	YES			
TS15	Mechanical	YES	YES		
	Electronic, with EMR4	YES	YES		
	Electronic, with SCL	YES			
	Electronic, with Wave Form	YES	Pending		
TS20	Mechanical	YES	YES	YES	YES
	Electronic, with EMR4	YES	YES	YES	
	Electronic, with SCL	YES			
	Electronic, with Wave Form	YES	Pending	YES	
TS30	Mechanical	YES	YES	YES	YES
	Electronic, with EMR4	YES	YES	YES	
	Electronic, with SCL	YES			
	Electronic, with Wave Form	YES	Pending	YES	

In high viscosity applications, limits on maximum differential across the flow meter apply.

		AA	SS	Rotor Type	Rotor Material	Rotor Bearing Material	Seals	Meter max rating with this combination
Alcohols	Ethanol, Iso-propanol, Methanol, etc.	●	●	LV	PPS	Carbon	Teflon™	100%
Aldehydes	Benaldehyde, Formaldehyde, etc.	●	●	LV	PPS	Carbon	Teflon™	100%
Automotive fluids	Transmisstion fluid, hdraulic oil, glycol & water	●	●	LV	PPS	Carbon	Viton™	***
Caustics	Potassium Hydroxide & Sodium Hydroxide (< 50%)		●	LV	PPS	Carbon	Teflon™	100%
Caustics	Potassium Hydroxide & Sodium Hydroxide (> 50%)		●	LV	PPS	Teflon™	Teflon™	80%
Esters & Ethers	Amyl Acetate, Butyl Acetate, Dibutyl Phtalate, etc.	●	●	LV	PPS	Carbon	Teflon™	100%
Fertilizer	Clear nitrogen solutions	●	●	HV*	PPS	Teflon™	Viton™	80%
Glycols	Ethylene, Diethylene, Triethylene & Propylene	●	●	LV	PPS	Carbon	Viton™	100%
Halogenated solvents	Hydrocarbon solvents with Fluorine, Chlorine, Bromine, Iodine & Astatine (Perchlorethylene)		●	LV	PPS	Carbon	Teflon™	100%
Herbicides	Atrazine, Lasso™, Round-Up™, etc.	●	●	HV*	PPS	Teflon™		80%
Ketones	Acetone, Cyclohexanone, MEK, MIBK, etc.	●	●	LV	PPS	Carbon	Teflon™	100%
LPG	Butane, Propane, Pentane & mixtures	●	●	LV	PPS	Carbon		100%
Lube oil	Automotive lubricants, gear oil & grease	●	●	HV	PPS	Carbon	Viton™	***
Organic acids	Acetic acid, Formic acid, Lactic acid, Vinegar	●	●	LV	PPS	Teflon™	Teflon™	80%
Refined Petroleum Products	Avition fuels (Avgas & Jet Fuel), gasoine, disesl fuel, Gasohol, Kerosene & Light fuel oil	●	●	LV	PPS	Carbon	Viton™	100%
Refined Petroleum Products	Fuel Sentry meters on diesel & fuel oil	●	●	HV*	PPS	Carbon	Viton™	100%
Refined Petroleum Products	Medium & Heavy Fuel Oils, Automotive lubricants	●	●	HV*	PPS	Carbon	Viton™	***
Shear sensitive liquids	Type IV glycol, many resins & polymers, etc.	**	**	HV*	PPS	Teflon™	Teflon™	*** (usually<50%)
Solvents	Benzene, Mineral Spirits, Toluene, Xylene, etc.	●	●	LV	PPS	Carbon	Teflon™	100%
Syrups	Corn Syrup, Sugar Syrup, liquid sugar	●	●	HV*	PPS	Teflon™	Viton™	*** (usually<25%)
Vegetable oils	Corn, Cotton, Olive, Peanut, Soya, etc.	●	●	LV	PPS	Carbon	Viton™	100%
Water	Drinking & Process Water (< 50°C/120°F)	●	●	LV	PPS	Carbon	Viton™	100%
Water	Drinking & Process Water (> 50°C/120°F)	●	●	LV	PPS	Carbon	Viton™	75%
Water	Distilled, Deionized or otherwise treated water (< 50°C/120°F)	●	●	LV	PPS	Teflon™	Viton™	75%
Water	Distilled, deionized or otherwise treated water	●	●	LV	PPS	Teflon™	Viton™	50%

NOTE * HV (High Viscosity) rotors are required when viscosity can exceed 300cSt (1,500 SSU) OR if temperatures exceed 120°F (50°C).
NOTE ** Depends upon pH
NOTE *** Subject to differential pressure limits!

SIGNAL RESOLUTION CHART - WAVE FORM DESIGN

EXAMPLE - Signal Frequency (Hz) and Minimum Signal Width Calculation

GPM		150
PPG		395
Pulses Per Minute	(150 x 395) =	59,250
Pulses Per Second (Hz)	(59,250 / 60) =	988
1 pulse =	(1 / 988) =	0.0010 second
1 pulse =	(.0010 x 1,000) =	1.01 millisecond
Minimum Signal Width ON time (1/2 p	(1.01 / 2) =	0.51 millisecond

Manufacturer	Model	Pulse/Signal Frequency Limit (Hz)
Veeder Root	EMR3	700
Liquid Controls	LCR II	700
MID:COM	Smartlink	700
Actars/Neptune	E4000	
Pegasus	R2000	

STANDARD (Raw) PULSE RESOLUTION - Hall Effect Pulser

This chart shows nominal values. Always field calibrate on actual fluid of operation.

Number of Magnets = 1

Pulses Per Revolution = 64

	Nominal		K-factor at			*Continuous duty on low viscosity refined petroleum fluids*										*Intermittent only*	
	GPM	LPM	PPG	PPL		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%
TS06A	20	75	405	107	Flow (US gpm)	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0
					Flow (liters per minute)	7.6	15.1	22.7	30.3	37.9	45.4	53.0	60.6	68.1	75.7	83.3	90.8
					Signal Frequency (Hz)	14	27	41	54	68	81	95	108	122	135	149	162
					Signal ON time (mS)	37.0	18.5	12.3	9.3	7.4	6.2	5.3	4.6	4.1	3.7	3.4	3.1
TS10A	40	150	1728	457	Flow (US gpm)	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	115	230	346	461	576	691	806	922	1037	1152	1267	1382
					Signal ON time (mS)	4.3	2.2	1.4	1.1	0.9	0.7	0.6	0.5	0.5	0.4	0.4	0.4
TS10C	40	150	2176	575	Flow (US gpm)	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	145	290	435	580	725	870	1015	1161	1306	1451	1596	1741
					Signal ON time (mS)	3.4	1.7	1.1	0.9	0.7	0.6	0.5	0.4	0.4	0.3	0.3	0.3
TS15A	60	230	1013	268	Flow (US gpm)	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	101	203	304	405	507	608	709	810	912	1013	1114	1216
					Signal ON time (mS)	4.9	2.5	1.6	1.2	1.0	0.8	0.7	0.6	0.5	0.5	0.4	0.4
TS15C	60	230	1152	304	Flow (US gpm)	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	115	230	346	461	576	691	806	922	1037	1152	1267	1382
					Signal ON time (mS)	4.3	2.2	1.4	1.1	0.9	0.7	0.6	0.5	0.5	0.4	0.4	0.4
TS20A & C	150	570	395	104	Flow (US gpm)	15.0	30.0	45.0	60.0	75.0	90.0	105.0	120.0	135.0	150.0	165.0	180.0
					Flow (liters per minute)	56.8	113.6	170.3	227.1	283.9	340.7	397.4	454.2	511.0	567.8	624.5	681.3
					Signal Frequency (Hz)	99	198	296	395	494	593	691	790	889	988	1086	1185
					Signal ON time (mS)	5.1	2.5	1.7	1.3	1.0	0.8	0.7	0.6	0.6	0.5	0.5	0.4
TS30A & C	250	760	275	73	Flow (US gpm)	25.0	50.0	75.0	100.0	125.0	150.0	175.0	200.0	225.0	250.0	275.0	300.0
					Flow (liters per minute)	94.6	189.3	283.9	378.5	473.1	567.8	662.4	757.0	851.6	946.3	1040.9	1135.5
					Signal Frequency (Hz)	115	229	344	458	573	688	802	917	1031	1146	1260	1375
					Signal ON time (mS)	4.4	2.2	1.5	1.1	0.9	0.7	0.6	0.5	0.5	0.4	0.4	0.4

SCALED (SCL - 100 Pulses Per Gallon) PULSE RESOLUTION - Hall Effect Pulser

This chart shows nominal values. Always field calibrate on actual fluid of operation.

Number of Magnets = 1

Pulses Per Revolution = 64

	Nominal		K-factor at			*Continuous duty on low viscosity refined petroleum fluids*										*Intermittent only*	
	GPM	LPM	PPG	PPL		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%
TS06A	20	75	100	26	Flow (US gpm)	2.0	4.0	6.0	8.0	10.0	12.0	14.0	16.0	18.0	20.0	22.0	24.0
					Flow (liters per minute)	7.6	15.1	22.7	30.3	37.9	45.4	53.0	60.6	68.1	75.7	83.3	90.8
					Signal Frequency (Hz)	3	7	10	13	17	20	23	27	30	33	37	40
					Signal ON time (mS)	150.0	75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
TS10A	40	150	100	26	Flow (US gpm)	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	7	13	20	27	33	40	47	53	60	67	73	80
					Signal ON time (mS)	75.0	37.5	25.0	18.8	15.0	12.5	10.7	9.4	8.3	7.5	6.8	6.3
TS10C	40	150	100	26	Flow (US gpm)	4.0	8.0	12.0	16.0	20.0	24.0	28.0	32.0	36.0	40.0	44.0	48.0
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	7	13	20	27	33	40	47	53	60	67	73	80
					Signal ON time (mS)	75.0	37.5	25.0	18.8	15.0	12.5	10.7	9.4	8.3	7.5	6.8	6.3
TS15A	60	230	100	26	Flow (US gpm)	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	10	20	30	40	50	60	70	80	90	100	110	120
					Signal ON time (mS)	50.0	25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
TS15C	60	230	100	26	Flow (US gpm)	6.0	12.0	18.0	24.0	30.0	36.0	42.0	48.0	54.0	60.0	66.0	72.0
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	10	20	30	40	50	60	70	80	90	100	110	120
					Signal ON time (mS)	50.0	25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
TS20A & C	150	570	100	26	Flow (US gpm)	15.0	30.0	45.0	60.0	75.0	90.0	105.0	120.0	135.0	150.0	165.0	180.0
					Flow (liters per minute)	56.8	113.6	170.3	227.1	283.9	340.7	397.4	454.2	511.0	567.8	624.5	681.3
					Signal Frequency (Hz)	25	50	75	100	125	150	175	200	225	250	275	300
					Signal ON time (mS)	20.0	10.0	6.7	5.0	4.0	3.3	2.9	2.5	2.2	2.0	1.8	1.7
TS30A & C	250	760	100	26	Flow (US gpm)	25.0	50.0	75.0	100.0	125.0	150.0	175.0	200.0	225.0	250.0	275.0	300.0
					Flow (liters per minute)	94.6	189.3	283.9	378.5	473.1	567.8	662.4	757.0	851.6	946.3	1040.9	1135.5
					Signal Frequency (Hz)	42	83	125	167	208	250	292	333	375	417	458	500
					Signal ON time (mS)	12.0	6.0	4.0	3.0	2.4	2.0	1.7	1.5	1.3	1.2	1.1	1.0

SCALED (SCL - 10 Pulses Per Liter) PULSE RESOLUTION - Hall Effect Pulser

This chart shows nominal values. Always field calibrate on actual fluid of operation.

Number of Magnets = 1

Pulses Per Revolution = 64

	Nominal		K-factor at			*Continuous duty on low viscosity refined petroleum fluids*										*Intermittent only*	
	GPM	LPM	PPG	PPL		10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%
TS06A	20	75	38	10	Flow (US gpm)	2	4	6	8	10	12	14	16	18	20	22	24
					Flow (liters per minute)	7.6	15.1	22.7	30.3	37.9	45.4	53.0	60.6	68.1	75.7	83.3	90.8
					Signal Frequency (Hz)	1	3	4	5	6	8	9	10	11	13	14	15
					Signal ON time (mS)	396.0	198.0	132.0	99.0	79.2	66.0	56.6	49.5	44.0	39.6	36.0	33.0
TS10A	40	150	38	10	Flow (US gpm)	4	8	12	16	20	24	28	32	36	40	44	48
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	3	5	8	10	13	15	18	20	23	25	28	30
					Signal ON time (mS)	198.0	99.0	66.0	49.5	39.6	33.0	28.3	24.8	22.0	19.8	18.0	16.5
TS10C	40	150	38	10	Flow (US gpm)	4	8	12	16	20	24	28	32	36	40	44	48
					Flow (liters per minute)	15.1	30.3	45.4	60.6	75.7	90.8	106.0	121.1	136.3	151.4	166.5	181.7
					Signal Frequency (Hz)	3	5	8	10	13	15	18	20	23	25	28	30
					Signal ON time (mS)	198.0	99.0	66.0	49.5	39.6	33.0	28.3	24.8	22.0	19.8	18.0	16.5
TS15A	60	230	38	10	Flow (US gpm)	6	12	18	24	30	36	42	48	54	60	66	72
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	4	8	11	15	19	23	27	30	34	38	42	45
					Signal ON time (mS)	132.0	66.0	44.0	33.0	26.4	22.0	18.9	16.5	14.7	13.2	12.0	11.0
TS15C	60	230	38	10	Flow (US gpm)	6	12	18	24	30	36	42	48	54	60	66	72
					Flow (liters per minute)	22.7	45.4	68.1	90.8	113.6	136.3	159.0	181.7	204.4	227.1	249.8	272.5
					Signal Frequency (Hz)	4	8	11	15	19	23	27	30	34	38	42	45
					Signal ON time (mS)	132.0	66.0	44.0	33.0	26.4	22.0	18.9	16.5	14.7	13.2	12.0	11.0
TS20A & C	150	570	38	10	Flow (US gpm)	15	30	45	60	75	90	105	120	135	150	165	180
					Flow (liters per minute)	56.8	113.6	170.3	227.1	283.9	340.7	397.4	454.2	511.0	567.8	624.5	681.3
					Signal Frequency (Hz)	9	19	28	38	47	57	66	76	85	95	104	114
					Signal ON time (mS)	52.8	26.4	17.6	13.2	10.6	8.8	7.5	6.6	5.9	5.3	4.8	4.4
TS30A & C	250	760	38	10	Flow (US gpm)	25	50	75	100	125	150	175	200	225	250	275	300
					Flow (liters per minute)	94.6	189.3	283.9	378.5	473.1	567.8	662.4	757.0	851.6	946.3	1040.9	1135.5
					Signal Frequency (Hz)	16	32	47	63	79	95	110	126	142	158	174	189
					Signal ON time (mS)	31.7	15.8	10.6	7.9	6.3	5.3	4.5	4.0	3.5	3.2	2.9	2.6

PRESSURE RATING TABLE

Meter pressure rating depends on temperature as well as the pressure rating of the lowest-rated component. The following table shows the maximum operating pressure for a given operating temperature and component configuration (meter only, strainer, air eliminator, etc.)

ALUMINUM METERS

				PRESSURE											
				Electronic Meters						Mechanical Meters					
		Anodized Al	**CS ANSI Adapt.**	Meter Only		Meter + Carbon Steel ANSI Flanges		Meter with any combination of Strainer, Air Eliminator, or Preset Valve		Meter Only		Meter + Carbon Steel ANSI Flanges		Meter with any combination of Strainer, Air Eliminator, or Preset Valve	
°F	°C			psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
100	38	100%	100%	400	27.6	290	20.0	150	10.3	150	10.3	150	10.3	150	10.3
150	66	89%	94%	356	24.5	273	18.8	134	9.2	134	9.2	141	9.7	134	9.2
200	93	79%	90%	316	21.8	261	18.0	119	8.2	119	8.2	135	9.3	119	8.2
225	107	75%	88%	300	20.7	255	17.6	113	7.8	113	7.8	132	9.1	113	7.8
250	121	71%	84%	284	19.6	244	16.8	107	7.3	107	7.3	126	8.7	107	7.3
275	135	62%	81%	248	17.1	235	16.2	93	6.4	93	6.4	122	8.4	93	6.4
300	150	43%	43%	172	11.9	125	8.6	65	4.4	65	4.4	65	4.4	65	4.4

STAINLESS METERS

				PRESSURE											
				Electronic Meters						Mechanical Meters					
		Stainless	**SS ANSI Adapt.**	Meter Only		Meter + Stainless Steel ANSI Flanges		Meter with any combination of Strainer, Air Eliminator, or Preset Valve		Meter Only		Meter + Stainless Steel ANSI Flanges		Meter with any combination of Strainer, Air Eliminator, or Preset Valve	
°F	°C			psi	bar	psi	bar	psi	bar	psi	bar	psi	bar	psi	bar
100	38	100%	100%	400	27.6	275	19.0	150	10.3	150	10.3	150	10.3	150	10.3
150	66	91%	89%	364	25.1	245	16.9	137	9.4	137	9.4	134	9.2	137	9.4
200	93	83%	82%	332	22.9	226	15.5	125	8.6	125	8.6	123	8.5	125	8.6
225	107	79%	80%	316	21.8	220	15.2	119	8.2	119	8.2	120	8.3	119	8.2
250	121	74%	78%	296	20.4	215	14.8	111	7.7	111	7.7	117	8.1	111	7.7
275	135	70%	76%	280	19.3	209	14.4	105	7.2	105	7.2	114	7.9	105	7.2
300	150	67%	74%	268	18.5	204	14.0	101	6.9	101	6.9	111	7.7	101	6.9

EXAMPLE 1:

System Flow Rate	50 gpm				Meter Flow Correction Due to Viscosity	Achieves desired flow rate?	System Flow Rate within 50% to 80% of meter's corrected rated flow?	
Fluid	Lube Oil - SAE 30							
Operating Temperature	**40° F (4° C)**							
Viscosity at Operating Temperature	1,300 cSt			TABLE 3B				
Recommended Flow factor	**D = 65% (HV Rotors)**			TABLE 3B				
	Nom. Flow		Flow Factor					
Recommended Flow TS10A (40 gpm nominal)	40	x	**65%**	=	26.0	NO	192%	NO
Recommended Flow TS15A (60 gpm nominal)	60	x	**65%**	=	39.0	NO	128%	NO
Recommended Flow TS20A (150 gpm nominal)	150	x	**65%**	=	97.5	YES	51%	YES

USE: **TS20A with <u>High Viscosity</u> rotors**

Example meter item number for Electronic meter with no register, HV rotors: **TS<u>20</u>AW04X<u>V</u>TU**

EXAMPLE 2:

System Flow Rate	SAME AS ABOVE				Meter Flow Correction Due to Viscosity	Achieves desired flow rate?	System Flow Rate within 50% to 80% of meter's corrected rated flow?	
Fluid	SAME AS ABOVE							
Operating Temperature	**80° F (21° C)**							
Viscosity at Operating Temperature	235 cSt			TABLE 3B				
Recommended Flow factor	**G = 100% (LV Rotors)**			TABLE 3B				
	Nom. Flow		Flow Factor					
Recommended Flow TS10A (40 gpm nominal)	40	x	**100%**	=	40.0	NO	125%	NO
Recommended Flow TS15A (60 gpm nominal)	60	x	**100%**	=	60.0	YES	83%	NO, but OK
Recommended Flow TS20A (150 gpm nominal)	150	x	**100%**	=	150.0	YES	33%	YES

USE: **TS20A with <u>Low Viscosity</u> rotors**

Example meter item number for Electronic meter with no register, LV rotors: **TS<u>15</u>AW04X<u>A</u>TU**