ARB® UTILITY MANAGEMENT SYSTEMS™

NEPTUNE TECHNOLOGY GROUP

TRICON/E3® TRANSMITTER

TRICON/E3 transmitters provide an interface between the water meter and an electronic controller for batching processes, monitoring flow totalization, and/or flow rate data.

An electronic digital pulse output with the 4–20mA option is available for customers requiring both digital and analog outputs. Reverse flow indication is available with the high frequency forward/reverse pulse output option.

The TRICON/E3 transmitter mounts between the meter maincase and the register. The bayonet-type mount allows the TRICON/E3 to be easily retrofitted to many existing Neptune meters without interruption. Contact Neptune regarding compatibility.

The TRICON/E3 with the 4–20mA option provides an analog signal that is proportional to the flow. Together, the digital pulse signal and the 4–20mA output provide information on total consumption and flow rate for close monitoring of water usage.

The TRICON/E3 with the high frequency forward/reverse pulse output option can be used in applications where directional flow monitoring is required in addition to total consumption and flow information.

Every Neptune meter meets or exceeds the latest AWWA standards ensuring accurate, dependable performance.

Neptune TRICON/E3 units are ideally suited for monitoring/controlling total flow rate data such as:

- Instantaneous readout of customer consumption via remote instrumentation or computer
- Batch or continuous process
- Water softening regeneration
- Demineralization
- Reverse osmosis
- Chemical treatment/injection
- Filtration
- Boiler feed water make-up
- Cooling tower water make-up
- Irrigation
- High or low rate alarming
- Reverse flow alarming

Dual optical switches allow the TRICON/E3 to distinguish between forward and reverse rotation, eliminating false pulse generation under low or no flow conditions.

KEY FEATURES

- Electronic pulse output proportional to the meter's rate of flow
- Electronic pulse output available with 4–20mA output or high frequency forward/reverse pulse output
- Mounts between the meter and register – Direct Read, ARB®, or ProRead AutoDetect
- Utilizes dual optical switch type design which is more accurate and reliable than the older single optical switch designs
- Stainless steel ball bearings minimize torque
- Tamperproof seal pin to prevent unauthorized access
- In-line adaptability allows installation or service without interrupting the meter service

WARRANTY

Neptune provides a limited warranty with respect to its TRICON/E3 transmitters for performance, materials, and workmanship.

PERFORMANCE DATA

Meter Type & Size	Pulses/ US Gallons	Flow Rate @ 4 mA Output (US GPM)	Flow Rate Value @ 20 mA Output (US GPM)
T-10			
5/8"	578.1	0	20
3/4"	322.6	0	30
1"	150.8	0	50
1 1/2"	67.57	0	100
2"	37.3	0	160
Tru/Flo® Compound (Turbine Side) and HP Tru/Flo (Turbine Side)			
2" HP	6.095	0	200
3"	2.890	0	450
4"	1.590	0	1,000
6"	0.464	0	2,000
HP Turbine			
1 1/2"	6.095	0	160
2"	6.095	0	200
3"	11.20	0	450
4"	7.556	0	1,200
6"	0.7273	0	3,000
8"	0.7556	0	4,000
10"	0.7556	0	6,500
12"	0.7556	0	8,000
16"	0.07556	0	13,500
20"	0.07556	0	22,000
HP Protectus III®			
4"	7.556	0	1,200
6"	0.7556	0	2,888
8"	0.6095	0	4,959
10"	0.5333	0	9,209

ELECTRICAL CHARACTERISTICS (OVER 0-70°C OPERATING TEMPERATURE)

Parameter	Description	Min	Max	Units
HF and UP/DN Digital Pulse Model				
VCC	Supply Voltage (DC)	11.5	26.5	Volts
Is	Supply Current	0.020	0.050	Amps
Vol	Low Output Voltage	0	0.4	Volts
Voh	High Output Voltage	8.5	12	Volts
Iol	Current at Vol		.010	Amps
Ioh	Current at Voh		.010	Amps
tr l-h	Output Rise Time		2*	µsec
tf h-l	Output Fall Time		2*	µsec
Measured with RL = 2.4 Kohms, CL = 50 pF				
4-20 ma Model				
VCC	Supply Voltage (DC)	22.5	26.5	Volts
Is	Supply Current		0.1	Amps
RL	Loop Resistance	0	600	Ohms
Gain	Scaling Accuracy		0.5	%FS
Zero	Offset Accruacy		0.2	%FS
Note: initial calibration is 1% total				
Both Models (unless otherwise specified)				
	Operating Temperature	0	70	Degrees C
	Storage Temperature	-40	85	Degrees C
	Supply Voltage	-30	30	Volts
	Output Load (Pulse Output)	1200		Ohms
	Output Current (Pulse Output)		0.01	Amps

SPECIFICATIONS

- Sizes:
  - T-10 (5/8"–2")
  - HP Turbine (1 ½"–20")
  - Tru/Flo Compound (2"–6"x8")
  - HP Fire Service Turbine (3"–10")
  - HP Protectus III (4"–10")
- Register Compatibility:
  - Direct Read
  - ARB®V
  - ProRead™ (ARB VI)
  - E-Coder™
  - E-Coder)R900*i*
- Connection Wire:
  - Distances up to 1000 feet – AWG
  - #22 twisted pair cable

Neptune engages in ongoing research and development to improve and enhance its products. Therefore, Neptune reserves the right to change product or system specifications without notice.

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