

# Electronic Signal Transmitting Registers

## High Speed Pickup Register

### Description

#### Transmits Solid State Signal from Sensus Turbo Meters, SR Meters and Propeller Meters

The High Speed Pickup Register, for use on Sensus SR Meters, Turbo Meters and Propeller Meters, utilizes solid state electronic circuitry to develop a high-frequency digital signal suitable for operation of ACT-PAK instruments that utilize data based on the rate of flow through the meter.

The HSP Register features magnetic drive; is permanently hermetically sealed for “wet” environments; and tamperproof. The HSP Register is fastened to the meter in any of four positions with an internal locking nut which prevents its unauthorized removal. A mechanical odometer and test circle are incorporated for direct readings and accuracy testing.



### Features

#### APPLICATIONS

The High Speed Pickup is used where information based on the rate of flow through the water meter is required. The HSP Register develops and transmits a high frequency pulse to a variety of ACT-PAK instruments. These instruments provide direct readouts of volume, rate of flow, and a variety of control functions. Examples include strip or circular charts, flow rate signals or alarms, pump controllers, and auxiliary equipment requiring inputs (analog or pulses) proportional to the flow rate.

#### WARNING

When High Speed Pickup Registers are utilized in above ground applications they must be properly shaded from direct sunlight or bright reflected light. In order to give the register unlimited life, its signal is developed via a LED (Light Emitting Diode) activated photo cell which will not function in direct sunlight or bright reflected light. A specially designed hood to protect the register is available from Sensus. However, any type of cover will provide enough protection for the register to function.

#### ELECTRONIC CONNECTION

The electrical connection is made with three terminal screws located under a plastic waterproof cover (which is to be filled with a silicone grease) on top of the High Speed Pickup. The waterproof connector's O-ring seals insure the protection from moisture necessary to operate elec-

tronic devices in high humidity or “wet” environments. Only snugly tighten seal screws to cover. Do not overtighten.

Belden #8770 or equivalent 3-conductor shielded cable is required; maximum outside diameter of the cable should be .235 inches (6mm) to effect a watertight seal at the HSP Register.

Maximum cable length between the meter and ACT-PAK instrument is 1000 feet (300m) (117 volt AC power is required at the ACT-PAK instrument location). Longer distances require a Sensus Repeater or tone telemetry equipment.

#### TROUBLE-SHOOTING FEATURES

The High Speed Pickup Register is designed for use in nonexplosive atmospheres. Flooded pits and high humidity atmospheres will not affect the operation of the HSP Register when properly installed.

#### ENVIRONMENTAL OPERATING LIMITS

The High Speed Pickup Register is equipped with two (2) internally mounted trouble-shooting lights. The continuous (non-blinking) red light (located at the rear left interior of the register enclosure when facing the odometer) indicates power from the ACT-PAK instrument is being received at the High Speed Pickup's terminal strip.

With water flowing through the meter (indicated when the odometer test circle is rotating), a red light (located at the rear right interior when facing the odometer)

will blink in proportion to the flow rate. This indicates electronic pulses are being generated and the three (3) conductor cable is continuous to the ACT-PAK instrument. If the light is not blinking, either the HSP's electronic circuit is defective or the connecting cable is not continuous.

#### WATERPROOF CONNECTOR INSTALLATION

**ASSEMBLY:** Thread the packing nut, grommet, washer, (Two washers are normally supplied; use only the washer to fit the appropriate connecting cable) and cover onto the connecting cable. Place the O-ring on the large diameter step of the register housing. Attach the connecting wire to the designated screw of the terminal strip and fill the waterproof cover with silicone grease. Install the cover with two (2) seal screws. Only snugly tighten seal screws to cover. Do not overtighten. Thread and tighten the packing nut (grommet and washer) into the cover. To avoid excessive strain on the seal screws, hold the cover at the flats while tightening the packing nut.

**DISASSEMBLY:** Before removing the seal screws, remove the packing nut. To avoid excessive strain on the seal screws, hold the cover at the flats when loosening the packing nut. To remove the cover, the packing nut must be pulled up at the cable several inches (mm). This prevents strain damage at the terminal connections.

## SPECIFICATIONS

<b>INPUT POWER REQUIREMENT TYPE</b>	12 Volt DC $\pm 5\%$ , 50 milliamps, or a compatible ACT-PAK unit which will supply 12 Volt DC power.
<b>OUTPUT SIGNAL</b>	Compatible with ACT-PAK instruments. If instrumentation other than ACT-PAK or Sensus is to be utilized, a Model 7103N ACT-PAK instrument should be used to provide the appropriate interface.

## MAXIMUM FLOW RATE SCALES

ACT-PAK instruments with flow rate indicators or recorders, ordered for use with meters equipped with the High Speed Pickup Register, will be calibrated for full scale readings at the following maximum meter flow rates unless otherwise specified:

Size/Type	Gallons Per Minute	m3Per Minute
W-120 DR/HSP	160	0.6
W-160 DR/HSP	200	0.7
W-350 DR/HSP	400	1.5
W-1000 DR/HSP	1,200	4.5
W-2000 DR/HSP	2,500	10.0
W-3500 DR/HSP	4,400	16.6
W-5500 DR/HSP	7,000	25.0
W-10,000 DR/HSP	12,500	47.3

Size/Type	Gallons Per Minute	Liters Per Minute
5/8" SR <sup>®</sup>	20	75
3/4" SR	30	100
1" SR	50	200
1 -1/2" SR	100	400
2" SR	160	700

Size/Type	Gallons Per Minute	m3Per Minute
3" Mainline Prop.	300	1.5
4" Mainline Prop.	600	3
6" Mainline Prop.	1,500	6
8" Mainline Prop.	2,000	8
10" Mainline Prop.	3,000	10
12" Mainline Prop.	4,000	15
14" Mainline Prop.	5,000	15
16" Mainline Prop.	6,000	20
18" Mainline Prop.	8,000	30
20" Mainline Prop.	10,000	40
24" Mainline Prop.	15,000	50
30" Mainline Prop.	20,000	80
36" Mainline Prop.	30,000	100

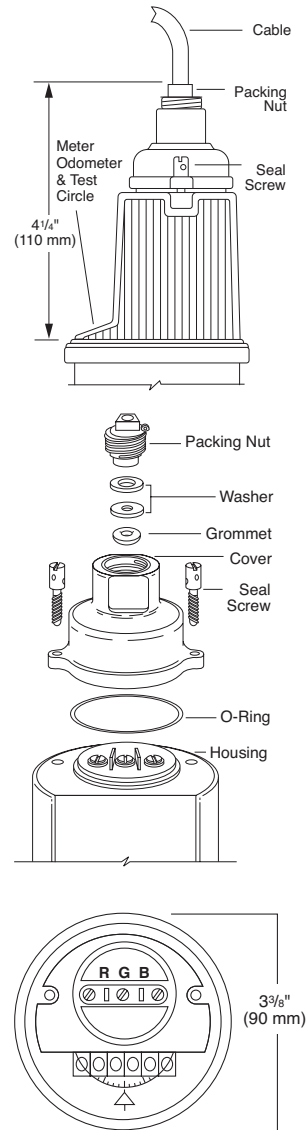
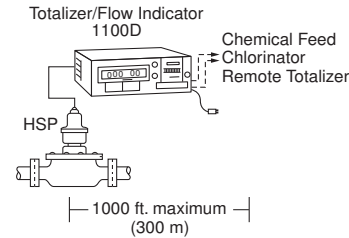
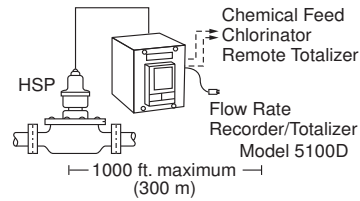
### Terminal Connections:

#### Terminals Wire Color (Belden 8770)

- R Red (+ 12 VDC)
- G White or Clear (Signal)
- B Black (Common)

#### Note:

The drain (bare) wire of the connecting cable is to be attached only at the instrument's terminals. The drain (bare) wire should be cut off at the end of the outer insulation at the meter location. It must not touch the meter or any grounded component in the system.



## WHEN ORDERING SPECIFY

1. Size of the meter and type of pipeline connection, if other than U.S. Standard
2. Units of Registration
3. Connection or companion flanges, if required.

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