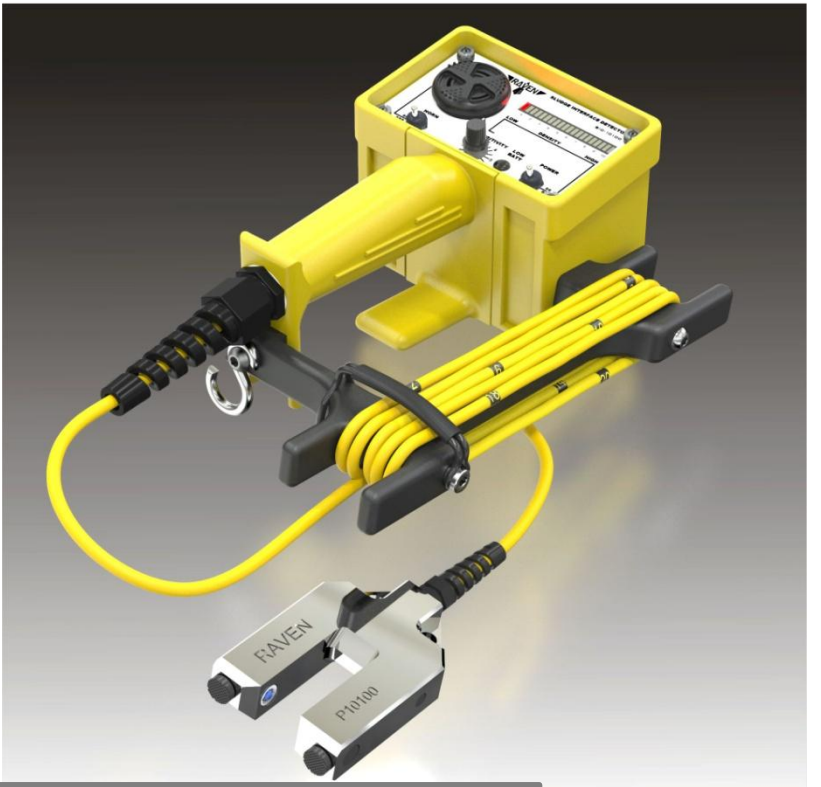
SLUDGE INTERFACE DETECTOR
MODEL SID-10200

RAVEN ENVIRONMENTAL PRODUCTS
MADE IN USA



Thank you for purchasing a Raven Environmental Products process control instrument. Please contact our Customer Service Department at 800-545-6953 for service or visit us at RavenEP.com.

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TOOL DESCRIPTION

The Raven SID-10200 Sludge Interface Detector (*SID*) is a rugged portable field instrument specifically designed to detect sludge density and measure sludge blanket elevation in sedimentation tanks and clarifiers. Precision electronics and the latest IRED technology enable accurate and repeatable measurements. Operator features like single-handed operation, belt clip and onboard cable stowage make it easy to use.

SET UP

1. Switch power-off.
2. Remove 4 screws on faceplate, pull away faceplate to expose case chamber.
3. Connect battery snap to battery cradle.
4. Inspect the foam gasket attached to the backside of the faceplate. It should be securely affixed and uniformly routed around the perimeter.
5. Secure faceplate to the case with the 4 screws.

TOOL FAMILIARITY

Before using the *SID*, take a minute to observe how it works.
Two on/off switches – one for Power and one for Horn.
A single lightbar segment lights up when the *SID* is powered-on.
Lightbar segments increase with horn as sludge density increases.
Horn may be muted by rotating the sounder vent or can be silenced by the switch. The probe sensor emits an IRED beam that is invisible and harmless. Low battery lamp will flash when battery replacement is due.

Quick check

Switch-on the POWER and HORN.

Place your finger over one of the sensor eyes in the probe gap. All lightbars illuminate and the horn sounds off. The horn can be switched-off without affecting the operation of the unit.

TOOL CARE

To prolong the life of the signal cable, avoid winding it too tightly around the cable stowage bracket. **NEW FEATURE:** The cable stowage strap should be latched onto the stainless steel post to keep the cable from unwinding from the bracket when not in use.

NEW FEATURE: It is recommended when transporting the tool to support the weight of the sensor probe on the hook mounted on the handle. Do not allow the sensor probe to dangle from the signal cable while transporting the tool.

Never replace less than all six batteries. The tool is most reliable when all six batteries are replaced with new alkaline AA batteries.

Never allow the faceplate to remain unattached from the yellow meter for more than 30 minutes. Moisture may corrode the electronics and shorten the life of the tool. A foam gasket prevents moisture and debris from entering the meter. The four stainless steel shoulder screws prevent mashing of the foam gasket.

SLUDGE INTERFACE DETECTION

1. Rotate Sensitivity Knob to position [1] low sensitivity.
2. Lower the *SID* probe all the way to the bottom of the tank. NOTE: If needed, increase sensitivity just enough to light up all the lightbars. THIS IS THE SENSITIVITY BASELINE FOR THIS TANK.
3. Grasp the signal cable at the top of the railing. Using this as a reference point, slowly raise the *SID* probe out of the sludge blanket until most or all of the lightbars go out. At this level, you have detected the sludge blanket interface.
4. The amount of cable pulled away from the reference point (top safety railing) represents the height of the blanket from the bottom of the tank.

SENSITIVITY ADJUSTMENTS

The Sensitivity Knob is used to compensate for varying types of sludge density.

KNOB SETTING	PROBE ATTITUDE	SENSITIVITY
1	Ignores the smallest solids	Low
5	Detects the smallest solids	High

Note: Sensitivity range is set at factory. Range modification instructions available upon request.

FINE TUNING

Now that you've established the baseline sensitivity for this tank, you can fine-tune the *SID* by increasing the sensitivity above the baseline.

At the baseline sensitivity setting determined in the previous step, the probe is exhibiting an "all or nothing" reading.

At sensitivities higher than your baseline, you can detect the ragged edge on top of the sludge blanket.

By lowering and raising the *SID* probe in and out of the sludge blanket interface at various sensitivity settings above your baseline, you will get a feel for the *SID's* "personality" and how it reacts to the particular influents at your plant.

Sludge blankets rarely have a well defined interface with the supernatant. Experience with the Sensitivity adjustment will allow the keen operator to measure the ragged edge of the sludge blanket. It is not uncommon in a dynamic environment such as a secondary clarifier to identify several feet of gradual density change on top of the sludge blanket.

It is interesting to measure the amount of lift the sludge blanket experiences just after the skimmer passes under the tank bridge. A steady hand lowering the sensor probe will allow the operator to track the settling of the blanket after the skimmer passes under the bridge. With experience, you will come to expect a certain rate of settling after the skimmer passes. Unexpected settling differences may indicate a process problem.

Always be aware of the skimmer location prior to lowering the sensor probe into the tank.

Check for uniformity of blanket height by walking the length of the bridge while maintaining the sensor probe just above the identified blanket.

Please feel free to share with Raven any other creative ways that you have found to use this interactive tool in your process. Just logon to Ravenep.com and leave us a note on the Contact page – feedback@ravenep.com.

MAINTENANCE

- Replace all 6 batteries as a group with new AA alkaline batteries of the same type and brand.
- Switch *SID* power switch-off when not in use to conserve batteries
- Store *SID* for long periods with the batteries removed
- Store *SID* in cool dry place and out of direct sunlight
- Clean probe sensor eyes with mild detergent

TROUBLESHOOTING

NO POWER – remove faceplate and verify connections between battery cradle and printed circuit board.

NO POWER – replace all six batteries with new of same brand

ALL RED LIGHTS ILLUMINATED with no blockage of sensor probe gap – indicates failure of signal cable. Likely point is near sensor probe. Bend and wiggle signal cable along five foot section of cable

starting near sensor probe. If red lights go out or flicker while bending signal cable, the cable has broken conductors and must be replaced. See next section for part number. Replacement signal cable and sensor is simple to replace.

REPLACEMENT PARTS

This tool, well taken care of, will provide many years of reliable service.

NAME	PART #	UNIT of MEASURE
Signal Cable & Probe	SID-10203-n	Feet (n = feet)
Battery Holder	S-10055	Each
Battery Snap Connector	S-10057	Each

WARRANTY

Sensor probe and signal cable is warranted for six (6) months from the date of purchase. If this part should fail during this period of time, Raven will replace the part at no charge. Raven reserves the right to request proof of purchase and to examine the failed part at the expense of purchaser to return the failed part to Raven.

Meter is warranted for one (1) year from the date of purchase. If this part should fail during this period of time, Raven will replace the part at no charge. Raven reserves the right to request proof of purchase and to examine the failed part at the expense of purchaser to return the failed part to Raven.


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