AquaPDA

Waiting for a current meter discharge measurement flow computer that includes the front page from the standard USGS discharge measurement note sheet? It's probably already sitting in your home or office.

Rickly Hydrological now offers the USGS-HIF designed Current Meter Signal Processor (CMSP) with H2O-IQ® software not only to calculate discharge for a stream gaging measurement, but to complete a gaging station site visit...all on your PDA. No PDA or just need a dedicated flow computer? Rickly also offers the HP ipaq with software loaded and a waterproof PDA Otterbox with rod mount for a top setting wading rod.

Computing power in the palm of your hand!

FEATURES

- Works with any Windows CE compatible hand-held PDA.
- H2O-IQ® flow measurement software duplicates USGS measurement and computation methods.
- USGS-HIF patented and licensed Current Meter Signal Processor (CMSP).
- Fully downloaded to Excel spreadsheet.
- Waterproof Otterbox with rod mount for wading rod.

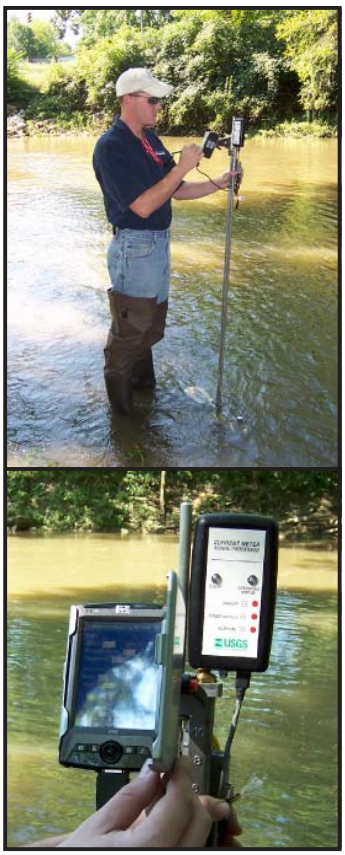
HOW DOES IT WORK?

The CMSP is a small electronic device that "cleans" the signal from a mechanical current meter such as a Price AA or Pygmy meter and directly interfaces with a PDA to compute velocity and discharge. The CMSP produces a clean, noise-free signal from meters using a cat whisker head contact to perform a mechanical switch closure. When connected to a hand-held PDA while a current meter completes a contact closure, the CMSP simultaneously produces a buzzer tone, a flash from a front panel LED, and transmits a serial data value through the serial interface connector at 1-second intervals to represent the number of contact closures and elapsed time .

The CMSP uses two AA batteries and connects between the current meter and the PDA. PDA software sends commands to the CMSP to perform a measurement, typically at 40-second intervals. During the measurement, the CMSP sends to the PDA the cumulative number of meter contact closures and elapsed time at 1-second intervals. Upon measurement completion, the CMSP sends a final count of contact closures and total measurement time. From this data, the PDA computes an average discharge velocity. The CMSP operates with Price AA current meter velocities from less than 0.55 ft/sec to more than 20 ft/sec. It also operates in slow-speed mode to improve measurement with slow rotating current meters (velocities less than 0.25 feet per second).

The H2O-IQ® software duplicates the standard USGS form 9-275-F "Discharge Measurement Notes" and stores complete gage readings, water quality measurements, and gage inspection in the PDA during the site visit for later download to an Excel spreadsheet.

The H2O-IQ® software calculates discharge using the USGS two-point method as detailed in the U. S. Geological Survey water supply paper 2175 *Measurement of Computation of Streamflow:* Volumes 1 & 2.



No more headphones, stopwatch, notes, or rating tables to juggle. It's all in the PDA!

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Standard rating equations No. 2 for AA and Pygmy current meter are used. The timer starts simultaneously with the first signal (counted as “zero”, not “one”) and the count ends at the first count past the standard USGS 40-second measurement, though users may set the timer for longer or shorter periods. The area of subsection uses the midsection method, and the H2O-IQ® auto distance feature helps the hydrographer insure no more than 5% of flow occupies a particular observation vertical. Calculate observation depth using the 0.6 or 0.2 and 0.8 method; settings automatically increment depending on observation depth and meter selected. The software averages velocity for a given observation vertical under the 0.2 and 0.8-depth method. At the end of a measurement, it calculates and displays total discharge and stores the complete measurement. Download the measurement later as an Excel spreadsheet, and output a standard report similar to the one below.

H2O-IQ®
Rickly Hydrological Company®
Observation Report for Friday, August 25, 2005

Calculations:

Gage ID:	Alum Creek at Mock Rd.
User ID:	S. Clark
Beginning Staff Height:	1.22
Ending Staff Height:	1.22
Beginning Gage Height:	0
Ending Gage Height:	0
Start Measure:	REW
Meter Type:	AA
Measuring System:	English
Total Width:	0
Total Area:	36.062
Total Discharge:	18.5292
Mean Velocity:	0.4574

HIGHLIGHTS

- Replaces headphone, stopwatch, rating table and discharge measurement note sheet with PDA.
- More functions than digital impulse counter/time or current meter digitizer (CMD). No need to write down counts, time or velocity – H_2O-IQ® software saves all data to the PDA.
- Use it like a CMD for velocity. It simultaneously displays velocity, counts (revolutions), and time.
- Waterproof case.
- Compatible with standard cat whisker or magnetic head AA and Pygmy Current Meter.

Observations:

Observation #	Distance	Depth	Revoltuions	Time	Location	Clock	Velocity	Area	Flow
1	0	0	0	0	6	9:54 AM	0	0	0
2	2.7	0.1	0	0	6	9:55 AM	0	0	0
3	5.4	0.2	0	0	6	9:55 AM	0	0	0
4	8.1	0.35	0	0	6	9:56 AM	0	0	0
5	10.8	0.5	3	30.1	6	9:59 AM	0.2375	1.350	0.3206
6	13.5	0.55	3	24.6	6	10:01 AM	0.2867	1.485	0.4257
7	16.2	0.6	4	23.3	6	10:03 AM	0.3963	1.620	0.6420
8	18.9	0.6	5	25.0	6	10:07 AM	0.4588	1.620	0.7433
9	21.6	0.6	5	22.5	6	10:09 AM	0.5078	1.620	0.8226
10	24.3	0.65	5	20.8	6	10:10 AM	0.5478	1.890	1.0353
11	27.0	0.7	6	21.9	6	10:11 AM	0.6219	1.890	1.1754
12	29.7	0.7	6	21.7	6	10:12 AM	0.6274	1.890	1.1858
13	32.4	0.65	6	20.5	6	10:13 AM	0.6631	1.755	1.1637
14	35.1	0.75	5	22.2	6	10:14 AM	0.5144	2.025	1.0417
15	37.8	0.8	7	22.2	6	10:15 AM	0.7130	2.160	1.5401
16	40.5	0.7	7	21.6	6	10:16 AM	0.7323	1.890	1.3840
17	43.2	0.85	7	23.5	6	10:18 AM	0.6745	2.295	1.5480
18	45.9	0.95	6	20.8	6	10:19 AM	0.6538	2.565	1.6770
19	48.6	1.05	7	22.8	6	10:21 AM	0.6947	2.835	1.9695
20	51.3	0.85	5	22.0	6	10:22 AM	0.5189	2.295	1.1909
21	54.0	0.65	7	20.9	6	10:24 AM	0.7562	0.8775	0.66357

AquaPDA - Call Rickly today!

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