



If you have to live by the numbers, get some numbers that are easy to live with.

The most livable, usable, believable numbers you can get are written all over the faces of our new Digimax™ line.

Our 2760 PDVM, for instance. It gives you a 5+ digit look at five standard dc voltage ranges, plus optional 10 mV, ac, ohms and current ranges. Fully auto-ranging on all ranges.

With all controls right at your fingertips.

And it hardly ever takes a calibration vacation. A simple, on-site, front-panel standardization helps you maintain accuracy.

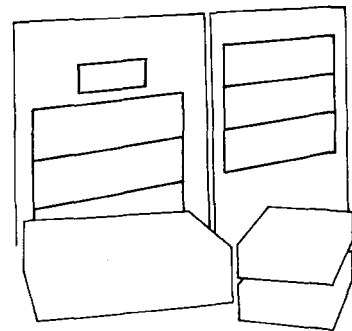
Or, if you prefer your readout in engineering units, consider our Numatrons: best way to get 3+ or 4+ digit looks at a non-linear input. Thanks to very sophisticated signal conditioning, conversion, and linearization techniques and hardware, conformity is, typically, $\pm 0.2C$ or better to the IPTS68 tables.

Readouts on all the instruments, as you can see, are highly legible—even from as far as twenty feet away.

You're not looking at just another pretty face. All of our experience in the care and feeding of low-level signals is packed in the back.

And as your workload grows, our Numatrons and PDVM will grow right along, into full-fledged automatic scanning facilities.

Take a minute to browse through the brief specs below. Then use the reader service card to get the help you need.



1. 2760 PDVM. 5+ digit precision DVM.

Accurate to $\pm (0.0015\%$ of reading $+ 0.001\%$ of range). Sensitivity: 100 nV on the optional 10 mV range. Fully autoranging over all ranges, with 60% overrange on most ranges.

Circle No. 301

2. Numatron. Your choice of 3+ digit Numatron 913 or 4+ digit Numatron 914. Either instrument with up to three linearized ranges, with remote or manual range switching. Patented signal conditioning and digital linearization provide high accuracy, good noise rejection, long-term stability, freedom from drift, and excellent conformity. Circle No. 302

3. 8239 Manual Scanner. You can connect our new Numatrons to ten, twenty, or more points with manual scanning units. Available in 10- or 20-point modules. Add as many as you like, up to whatever limit you find practical. Numbered pushbuttons; illuminated if desired. Circle No. 303

4. 2740 Scanner/Programmer. Got a lot of sensors to look at? The 2740 Scanner/Programmer will give you speed reading of up to 100 points. Scan time adjustable. Remotely programmable. Low thermal ($<1\mu V$) guarded inputs. All programming inputs and digital outputs DTL/TTL-compatible. Circle No. 304

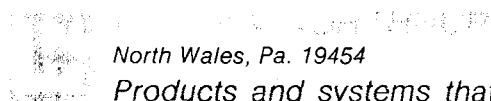
5. 2730 Digital Printer. 21-column rotating-drum printer, with a three-line-per-second print rate. DTL/TTL compatible, with nine floating decimal points. Six optional thumbwheels set static data such as date, time, batch number and the like. Saves time. Reduces errors. Makes data more useful.

Circle No. 305

6. 10199 Digital Clock. Real time in 12- or 24-hour cycles, or system time up to 24 hours, on a Sperry display. Interval timer can be thumbwheel-set over a range of 10 minutes to 39 hours, 50 minutes. Circle No. 306

7. Multi-input PDVM Facility. Mix and match the 2760 PDVM with our scanner/programmer, printer, and clock and you've got the facility you need for automated electrical testing. Circle No. 307

8. Multi-input Numatron Facility. Just as the 2760 joins forces with our other digital equipment to oversee up to 100 voltage, resistance, or current inputs, Numatron can do as much for other linear or non-linear signals. Circle No. 308



North Wales, Pa. 19454

Products and systems that measure and control.



How to keep your answers from being part of the problem.

It's no fun.

You feed your carefully prepared sample into the ever-so-sophisticated analyzer and you get back . . . what?

A useful record?

Half a useful record?

Half-a-yard of unfile-able chart paper?

A definite feeling that you should have called the serviceman three days ago?

We can help.

With more recorders, more variations of recorders, and better recorders than anyone else can give you.

For example, our XL 620 X-t flatbed.

It starts, unassumingly enough, as a high-level, one-speed, one-pen model. For \$675, in quantities of one. 0.25% accurate.

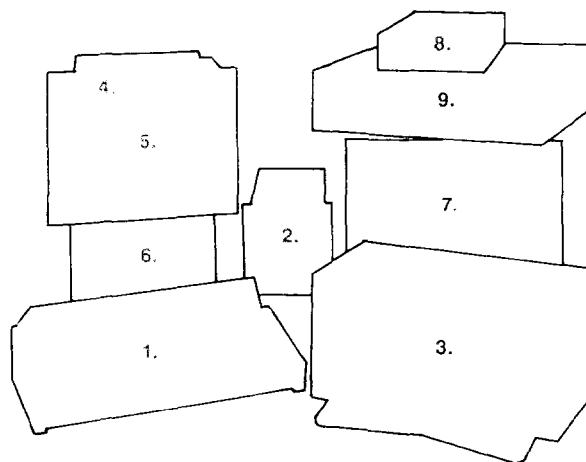
Where it goes from there is entirely up to you.

Because there's designed-in room for dozens of options: Single, dual, or multi-spans. Any span from 400 μ V to 100 V. Up to ten speeds. Complete local and remote controls.

There's more, but you get the idea: you get—and pay for—only what you need.

And that's only one example. Below, you'll find individual descriptions of low-profile recorders, card-chart recorders, wide-chart recorders, multi-point Cleertrend recorders, (with optional random point selection), and one-, two-, and six-pen recorders, for bench, rack or panel.

The point, however, is not to overwhelm you with recorders, but to supply you with records—accurate records, in their most useful form, every time. Browse through the brief specs below and see if there isn't something you like. Then use the reader service card.



1. XL 620 Flat-bed. The recorder that's as versatile as you want it to be. One or two pens, each with one or two fixed ranges or adjustable zero, adjustable range (AZAR)[®]. Zero right or left. English or metric calibration. Roll or fanfold chart. Jewel or fiber tip pens. Remote-operation terminals standard. *Circle No. 309*

2. Infotrak[®] Card Chart Recorder. New idea in record-keeping. And record finding. Lets you record periodic measurements on individual 5" x 8" Keysort[®] cards—so you can file them, and find them, fast. Pushbutton speed selection. *Circle No. 310*

**Registered trade name of Automated Business Systems.*

3. XL 600 Low-Profile. One- or two-channel recording on a 9 $\frac{7}{8}$ " vertical strip chart; fixed mV or thermocouple ranges; AZAR (adjustable zero, adjustable range) spans from 100 μ V to 100 V with optional calibrated $\pm 1000\%$ zero adjustment. Single; dual; ten- or twenty-speed chart drive. *Circle No. 311*

4. Speedomax[®] W. For a 9 $\frac{7}{8}$ " wide look at up to 276 points, with multi-point, multi-bank option. Or for just one point, as is. Response to full scale change of variable: one to five seconds, chart speeds from $\frac{1}{4}$ " per hour to 1" per second. *Circle No. 312*

5. Cleertrend[®] Printing. Keeps the many tracks of multi-point recording as clear as a road map. Periodically numbered tracks of dots in six colors ensure that crossovers and even closely spaced records are readily legible. *Circle No. 313*

6. Flexelect[®] Switching. Gives you random selection of any one, or any combination, of up to 24 points. Mounts below a Speedomax W with Cleertrend printing, remotely, or internally. *Circle No. 314*

7. New Speedomax 880. Continuous-line recording of up to six independent channels, on a 9 $\frac{7}{8}$ " chart. Bench, panel, or rack mounting. *Circle No. 315*

8. Numatron Digital Display. For the variables you don't want to record. 3+ or 4+ digit indication of linear or non-linear inputs with optional analog or digital outputs in case you change your mind about recording. *Circle No. 316*

9. 2760 Precision DVM. Highly accurate, 5+ digit indication of dc volts, plus optional Vac. K Ω , mAdc, and mAac. Easy to use, easy to standardize—without a trip back to the standards lab. *Circle No. 317*



LEEDS & NORTHRUP
North Wales, Pa. 19454

Products and systems that measure and control.



We'll take you inside any liquid in your lab. Even if it isn't in your lab.

Any time, and just about any place, that you want a look at ion activity in a liquid, we can help.

Take our lowest-priced lab pH meter, the 7410, for instance.

The 7410 will give you a full-scale look at pH. Or an expanded-scale view of any 2 pH span.

And a two-decade log look at monovalent cations and anions. And a four-decade log look at divalent varieties.

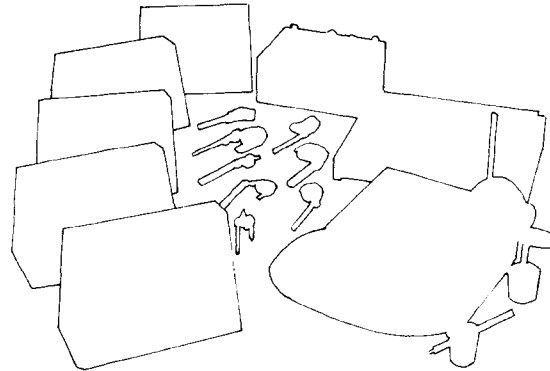
And "known increment" and "known decrement" scales for easy, direct readout of specific ion concentrations.

Now, how do you take full advantage of a meter like that? Very easily, with our pH and specific ion electrodes, covering ion activity from bromide to water hardness.

There are four other laboratory ion-watchers in the line, all described below. And for out-of-the-lab pH checking, there's a lab-unto-itself, Model 7417, you can take with you. Anywhere.

And if conductivity is your bag, we have you covered with portable and laboratory conductivity bridges.

All told, it's the most complete line of electrical insight gatherers you could have in a lab. Or out. Browse through the brief specs below. Then use the reader reply card.



1. 7410 Specific Ion/pH Meter. What we didn't mention above is that the 7410 is also one of the easiest meters to use: its 8.2" scale gives you a good look at ion values anywhere on the scale; the controls are up front for easy use. You don't even have to plug it in: it's battery powered for portability and freedom from line-voltage problems. *Circle No. 318*

2. 7417 Portable pH Meter. Lets you take the lab to the ions. Rugged, compact, lightweight, and fully gasketed. Gives lab-like ± 0.05 pH accuracy in severe field environments. All-solid-state for reliability and stability. Optional lab-in-a-lid holds electrode, buffers, beakers, thermometer, all other accessories needed for accurate field measurement. *Circle No. 319*

3. 7411 General Purpose Model. A steady, dedicated bench performer. Handles the majority of pH measurement chores with ease. And economy. *Circle No. 320*

4. 7413 Expanded Scale Model. More versatile than the 7411; provides two- and four-decade log scales and "known-increment" scales for simple specific ion measurements. *Circle No. 321*

5. 7415 Research Model. The ultimate combination of features in a scale-type meter. Expands any 1.4 pH or 140 mV span to full scale. *Circle No. 322*

6. 7421 Digital Model. All the good built-in features of the line, behind a 4+ digit face. Just push a button and read pH or mV values, right down to the last 0.1 mV. Analog and BCD outputs. *Circle No. 323*

7. pH Electrodes. Combination or separate measuring and reference electrodes with L&N's field-proven rugged design. Full range meets just about any requirement. *Circle No. 324*

8. Specific Ion Electrodes. 14 specific ion electrodes, used with our versatile meters, give you direct measurement of the activity or concentration of a wide variety of ions: fluoride, nitrate, cyanide, you name it. *Circle No. 325*

9. 4959 Resistance/Conductance Bridge and 4866 Resistivity/Conductivity Indicator (not illustrated). For in-the-lab or on-the-go measurement over a range from demineralized water to concentrated acids. *Circle No. 326*

10. 4966 Jones Bridge (not illustrated). For the most precise measurements of electrolytic conductivity. 60,000 ohm range—in 0.1 ohm steps. Slidewire adjustment to ± 0.001 ohm. *Circle No. 327*

11. XL 620 Recorders. Single- or two-pen flat-bed recorders accept outputs from any of our pH and specific ion lab meters. *Circle No. 328*

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