

# The Line Monitor

Newsletter published by Measurement Technology NW - Winter/Spring 2004

## New LCI Drum Counter introduced

### LCI-90 and LCI-100 versions

Measurement Technology NW's new LCI Drum Counter displays are the latest addition to a growing family of winch line control products. Both our LCI-90 and LCI-100 models can now be ordered in a Drum Counter configuration.

The new LCI Drum Counters display line payout and speed utilizing a Hall Effect, quadrature encoder, or a pair of proximity sensors mounted on the

LCI Drum Counters provide the user with up to six optional visual alarms. These alarms can be assigned to either Line Speed or Payout, and can be designated as a high or low alarm. Alarms can also be assigned to any one of the four opto output modules for driving lights and/or horns, and the display's output can also be used to control variable speed drives (the PID feature is optional).

LCI Drum Counter displays are designed to be units-aware. Any of the displayed units can be switched during operation without requiring re-calibration. An internal processor automatically accommodates the changes. For example, if the RUN screen shows 3000.0 FT on the Payout display, and the Payout units are changed to meters, the screen will immediately display 914.2 MTRS with no other changes necessary.

Contact Measurement Technology NW today ([LCI@mtnw-usa.com](mailto:LCI@mtnw-usa.com), or 206-634-1308) to learn how our LCI family of products can take you to a higher level of performance.

***Designed for easy operation, with English language menus and a minimum of abbreviations that make programming and operation both intuitive and fast!***

winch drum. As in every LCI unit, the heavy-duty 316 stainless steel front panel and five sealed pushbuttons perform flawlessly in extreme environments. Our exclusive (and bright) 320x240 electroluminescent display panels are protected by an epoxy-sealed polycarbonate window, where payout and speed data are displayed as both a digital number and a horizontal bar graph. If desired, this data can easily be broadcast to remote monitoring devices such as the LCI-90R via an RS-232 or RS-485 serial communication link.

Once cable and drum geometries are entered into memory, the LCI Drum Counters will automatically adjust for variations in drum diameter during spooling or unspooling operations, and will accurately measure winch payout and speed even as drum layers change. Other calibration and configuration menus are easily accessed by using the LCI's front panel pushbuttons - once installed there is no need to access the rear of the display.



*LCI-90 Drum Counter display - call Measurement Technology NW for more details or to receive a competitive price quote for your next winch project.*

Our LCI displays are the best in the business, but they're only as accurate as the sensors they're connected to. To help solve that problem, MTNW recently completed an evaluation of counter and tensiometer suppliers and uncovered several accurate, durable models that perform very well under a wide range of conditions.

We were particularly impressed with a rugged, well designed running-line tensiometer featuring an alloy steel frame with marine grade coating and stainless steel fixtures. This RLT is easily installed or removed from the winch cable by unbolting and lifting off an instrumented center sheave.



Years of reliable performance in the unforgiving oil and gas industry has us convinced this tough, compact tensiometer is the real deal - and its price is quite reasonable compared to other models we reviewed!

**Construction Specifications:**  
(Model RL-1060K)

- ◆ Alloy steel w/marine grade coating
- ◆ 316 stainless steel hardware
- ◆ 17-4 PH stainless steel sheaves
- ◆ Sealed double roller bearings
- ◆ Removable center sheave
- ◆ Model capacity: 60,000 Lbs
- ◆ Maximum overload: 300%
- ◆ Accepts up to 1.25" wire rope
- ◆ Dimensions: 19"L x 8"W x 12"H

**Load Pin:**

- ◆ Hermetically sealed
- ◆ Stainless steel construction
- ◆ 4-20 mA output
- ◆ 50% overload without zero drift
- ◆ 5 to 12VDC excitation
- ◆ -65 to 250F temperature range
- ◆ Non linearity,  $\pm 0.1$  %FS
- ◆ Hysteresis,  $\pm 0.1$  %FS

**Count Sensor:**

- ◆ Proximity sensor or Encoder
- ◆ 7-24VDC operation range
- ◆ Quadrature output
- ◆ 20 kHz bandwidth
- ◆ Resolution (est): 4.0" (proximity)  
0.6" (encoder)



**Tensiometers can be built to any specification.**

**Available sizes range from 15,000 to 800,000 Lbs**

# Accessorize your LCI



For applications where a tension input is not required and simplicity is the name of the game, Measurement Technology NW has crafted a digital retrofit for the venerable Olympic Trawl Cable Meters, both the older 750 and the current 750-N models.

Olympic Trawl Cable Meters have been popular since their introduction in the 1950's due to their reliability and compatibility with almost any deck gear arrangement. The Meters can be put on and off the cable when convenient - it is not necessary to reeve cable through the Meter.

Free-turning stainless steel sheaves support the Meter and guide it on the cable. A variety of mounting options keep the unit in place.

The pivoted Measuring Head is spring-loaded for correct pressure against the winch cable, thus assuring long service from the neoprene-tired Measuring Wheel.

The current 750-N model features an industrial grade Zamak housing, stainless steel shafts and oil-less bronze bearings. MTNW's digital upgrade replaces the standard mechanical counter unit with highly accurate proximity sensors outputting analog signals easily processed by an LCI-90 display.

Line speed and payout resolutions of one inch have been achieved in the 750-N model, and resolutions of six inches are possible with the older 750 model.

# LCI Quick Comparison Guide

**LCI-90 or LCI-100?** Use these comparison tables to select the winch Line Control Instrument right for your application



## LCI-90 Display:



- Four alarms
- Two analog outputs
- DC power only (9-18VDC or 18-36VDC)
- One RS-232 and one RS-485 serial outputs
- Drop-in panel replacement for LM-2000
- Supports WinchDAC and 1-32 remote LCI-90R displays

## LCI-100 Display:



- Six alarms
- Four analog outputs
- AC or DC power (85-250VAC or 9-18VDC / 18-36VDC)
- Two RS-485 (or one RS-232 and one RS-485) outputs
- Faster processor permits PID control capabilities
- Supports WinchDAC and 1-32 remote LCI-90R displays

LCI Model	Parameters	Available As
<b>Standard</b>	Speed Tension Payout	LCI-100 or LCI-90
<b>Dual Tension "Standard"</b>	Tension 1 Tension 2	LCI-100 or LCI-90
<b>Dual Tension "Quad"</b>	Tension 1 Tension 2 Speed Payout	LCI-100 only
<b>Drum Counter</b>	Speed Payout	LCI-100 or LCI-90
<b>Drum Counter with PID Control</b>	Speed Payout	LCI-100 only



Don't miss hearing what our customers have had to say about the LCI system and after-the-sale service provided by Measurement Technology NW. Coming soon are three new MTNW Project Profile stories, #4 - Everett Engineering, #5 - NOAA, and #6 - PW Adamson.

All our Project Profiles can be found on the MTNW website under the category "Background". Or, use this direct link to our website: (<http://www.mtnw-usa.com/linesystems/casestudies.html>) to access them directly. Check often for the latest MTNW news and reviews!

MEASUREMENT  
Technology  
NORTHWEST

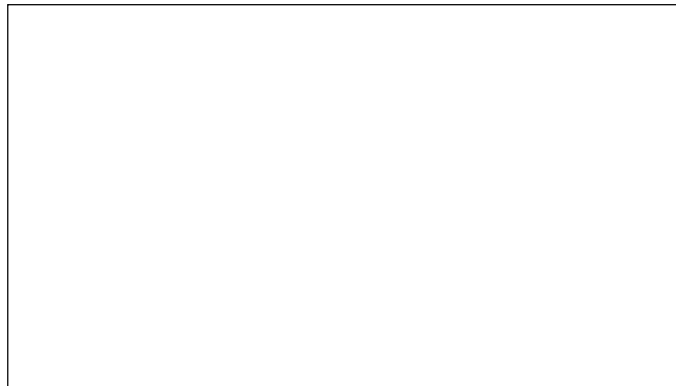
4211 - 24th Avenue West  
Seattle, WA 98199 USA

Phone: 206 634 1308

Fax: 206 634 1309

Email: [lici@mtnw-usa.com](mailto:lici@mtnw-usa.com)

Measurement Technology NW designs and manufactures rugged, multi-channel winch line control instruments used to monitor speed, payout, and tension (both cable and chain) in single or multi-winch systems used for ROV/equipment deployment, barge and platform positioning, fixed-place mooring, drawbridge controls, helicopter or ship towed arrays, mining and oilfield drilling, and wherever accurate and reliable line control is required.



## "Roger Revelle" full shipset upgrade

Scripps Institution of Oceanography research vessels make up one of the largest academic fleets in the world. The San Diego, California based organization's premier research vessel, the 274-foot *Roger Revelle*, is in constant demand for scientific studies of marine life, the oceans, the seafloor, and the atmosphere.

When built in 1996, the *Roger Revelle* used Measurement Technology NW's original "S" series displays paired with research winches from Markey Machinery Company. While still

accurate and still providing trouble free operation, the old "S" series LCD screens were difficult to read in poor lighting conditions and their software could not be updated.



These two issues are history now, thanks to eleven LCI-90 displays the *Roger Revelle* will be installing in the months ahead as part of a full shipset upgrade. All nine winch stations (and two spares) are being updated - a nice project for us, but just a small part of the Scripps Institute's overall effort to maintain the *Roger Revelle* as the most advanced research vessel operating on the Pacific coast.

Upon completion in mid-2004, look for a more detailed MTNW "Project Profile" story about this installation.