

Next Generation Line Monitoring Display Features

Required

Display

High visibility/day light readable on the equator at noon

Dimmable for night operations

High reliability

High uptime

Low failure rate

Platform stability

Upgrade Path

Drop in replacement

Parameter Configuration

Externally load via Ethernet and or USB

Network Capability

Broadcast UDP to a subnet not to one address

Receive from multiple sources not from one address

More mesh, less master/slave

Number of Winches

Each winch has a unique ID and name

Typically each instrument is connected locally to one winch, four winch inputs not required

Ability to display data from any instrument local to a winch (remote qty 7? 10?)

Trivial to add portable systems to mesh using

External inputs

Digital

Zero wire

Tare load

Winch select (for x number of winches, could be binary to limit required inputs 4 bits for 16? inputs)

Reset Max

Local Winch Active

Event Flag

Analog

Screen Dimmer

Alarms

Tension warning

Over tension

Speed/payout warning

UNOLS Winch String

This is a multi-field string separated by commas. Unfilled positions can be left blank

Field	Description	Type	Example
1	Feed Identifier	String	\$WNC
2	Year	Integer	2016
3	Month	Integer	06
4	Day	Integer	31
5	Hour	Integer	24
6	Minute	Integer	59
7	Second	Integer	59
8	Millisecond	Integer	050
9	Winch ID	String	CTD, ECWP1
10	Mission ID	String	Wecoma00500
11	Cable ID	String	NSF12345-10
12	Cable Installation Year	Integer	2015
13	Cable Month	Integer	02
14	Cable Day	Integer	28
15	Tension	Float	12000.5
16	Payout	Float	10000.0
17	Speed	Float	100.0
18	Tension Warning	Float	4000.0
19	Payout Warning	Float	3000.0
20	Speed Warning	Float	60.0
21	Tension Alarm	Float	5000.0
22	Payout Alarm	Float	3500.0
23	Speed Alarm	Float	85.0
24	Tension Unit	Integer	0 = lbf 1 = kips 2 = kN 3 = kg 4 = ton 5 = tonne 6-9 = Reserved
25	Payout Unit	Integer	0 = m 1 = ft 2 = km 3 = mi 4 = nautical mi 5 = Fathoms 6-9 = Reserved
26	Speed Unit	Integer	0 = m/min 1 = m/s 2 = ft/min 3 = km/hr 4 = mi/hr 5 = knots 6-9 = Reserved
27	Tension Member Warnings	Binary Byte	Bit 0 = Tension Bit 1 = Payout Bit 2 = Speed

			Bit 3 = Event Bit 4 = Render Bit 5-7 = Reserved
28	Tension Member Alarms	Binary Byte	Bit 0 = Tension Bit 1 = Payout Bit 2 = Speed Bit 3 = Load Pin Fault Bit 4 = Counter Fault Bit 5-7 = Reserved
29	Winch Status	Binary Byte	Bit 0 = Winch Active Bit 1 = Levelwind Active Bit 2 = Tension Limiting on/off Bit 3 = Local/remote Control Bit 4 = Auto/Manual Bit 5 = Levelwind auto/manual Bit 6 = Winch Fault Bit 7 = Levelwind Fault
30	Winch Mode	Integer	0 = Stopped 1 = Haul 2 = Payout 3 = Rendering 4 = AHC 5 = Auto payout to target 6 = Auto haul to Target 7 = Auto Haul to Surface 8 = Auto Tow Target 9 = Reserved
31	Tension Member Diameter	Float	0.322
32	Spooling Pattern	Integer	0 = 1:1 1 = 2:1 2 = 3:1 3 = 4:1 4-9 = Reserved
33	Joystick Command Percent	Float	45.0
34	Current Layer Number	Integer	25
35	Current Turn Count	Float	160.5
36	Hour Count	Float	237.6
37-45	Reserved For Vendor Parameters And Future Developments		

Desired

Hour Counter

Triggered when local is active

Maintenance Log

Checklist that records common tasks

- Grease
- Oil change

- Calibration
- Wire change
- Wire lube
- Other
- Ability to export data / report
- Stored on external media IE SDHC card, can be removed and move to new display to retain history in the event of failure.
- Ability to retrieve data via Ethernet
- Winch name

Wire Log

Log that contains wire data

- Name/serial number
- Maximum wire out and tension (based on active flag)
- Maximum tension and wire out (based on active flag)
- Lube date / hours
- Spool date /hours
- Ability to export data/simple report
- Stored on external media IE SDHC card, can be removed and move to new display to retain history in the event of failure.
- Ability to retrieve data via Ethernet
- Winch name
- Alarm settings for tension member

Display

Automatic display of winch data with active flag

Remote Assistance

Ability for MTNW or suitable personnel to access unit from shore. Could just use an industrial remote access VPN (IE eWon Cosy) depending on arrangements could be provided by MTNW for site monitoring, or by ship to offer access.

Buttons

Ability to reconfigure display button(s) to one or more of the above parameter