AGO

ENVIRONMENTAL ELECTRONICS LTD

Product brochure:

TWC-1 TENSIOMETER WIRE COUNTER

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OVERVIEW

The TWC-1 is a basic sheave-based combination tension and wire payout metering system that can be used with any winch as long as the site geometry (winch location relative to sheave when deployed) can be measured.

It uses the same wire counting programming as A.G.O.'s EWC-6 wire counter with an accuracy of about ±0.1m (calibration dependent).

Its tension metering calculations and their accuracy depend on user-ented site geometry measurements.

It is not designed to be a high-accuracy tension metering system and is not rated for use in applications that require high accuracy tension metering.

Use case example:

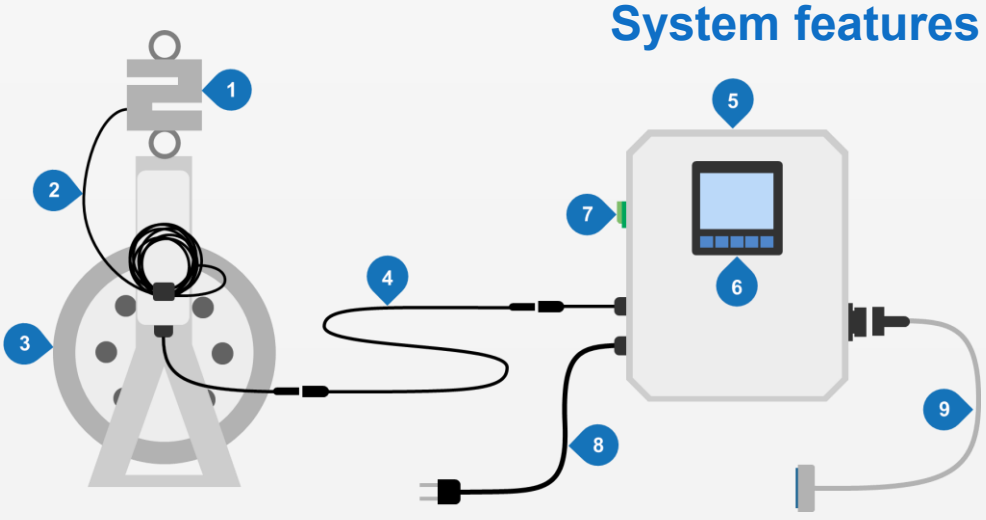
Watching for changes in tension indicating that a baited camera system has hit the sea floor

Specifications

Display values	Length paid out, Line speed, Tension
Display units	Meters and kilograms, or feet and pounds
Power	85-264 VAC 1-ph
Data output cable	~1m (3.3ft) long USB cable (D-sub serial also available)
Data output string format	NMEA sentence: $YXXDR,D,####.#,M,L,S,##.#,M,#####.#,K,R*24[CR][LF]
Max tension	800 to 2000 lbs, depending on sheave (max tension estimated as ½ SWL – refer to next page for SWL ratings of compatible sheaves)

Display box

System features



1. Load cell
2. Load cell cable
3. Encoded snatch block sheave
4. Sheave-to-display cable
5. Display box
6. PLC display
7. On/Off switch
8. Power cable
9. Data out cable

TWC-1 COMPATIBLE ENCODED SHEAVES

Brand	Sheave	Groove root diameter	Max cable size	Sheave weight	Safe Working Load[1]	Maximum Load Limit[1]
Sherman & Reilly	SR12	10” (254.0mm)	1.10” (28.1mm)	15 lbs (7 kg)	1,625 lbs (737 kg)	6,500 lbs (2,948 kg)
	SR14[2]	12.239” (310.9mm)	1.21” (30.7mm)	18 lbs (8 kg)	1,875 lbs (850 kg)	7,500 lbs (3,401 kg)
	SR16	14” (355.6mm)	1.34” (34.0mm)	22 lbs (10 kg)	2,250 lbs (1,020 kg)	9,000 lbs (4,082 kg)
	SR20	16.25” (412.8mm)	1.51” (38.4mm)	42 lbs (19 kg)	3,000 lbs (1,361 kg)	12,000 lbs (5,442 kg)
	SR22	18.125” (460.4mm)	1.51” (38.4mm)	46 lbs (21 kg)	3,000 lbs (1,361 kg)	12,000 lbs (5,442 kg)
	SR28	24” (609.6mm)	1.86” (47.3mm)	62 lbs (28 kg)	3,000 lbs (1,361 kg)	12,000 lbs (5,442 kg)
	SR35	30.25 (768.4mm)	2.09” (53.2mm)	115 lbs (52 kg)	3,000 lbs (1,361 kg)	12,000 lbs (5,442 kg)
	SR42	36” (914.4mm)	2.09” (53.2mm)	155 lbs (70 kg)	4,250 lbs (1,927 kg)	17,000 lbs (7,710 kg)

How to select a sheave

Collect the following information:

Cable diameter d = _____

Cable’s minimum dynamic bend diameter (not radius) D = _____

Maximum expected line tension X2 2T = _____

1. Select a sheave with a groove root diameter greater than or equal to your cable’s minimum dynamic bend diameter (D).
2. Check that the sheave’s maximum cable size is greater than or equal to your cable’s diameter (d). Select a larger sheave if needed.
3. Check that the sheave’s SWL is greater than or equal to twice your tension (2T). Select a larger sheave if needed.

1. Load limits refer to the maximum load applied to the sheave as measured at the shackle that supports it. It is the operator’s duty to determine the corresponding tension limit according to their particular site’s geometry and how much the cable is wrapped over the sheave. For a conservative estimate on recommended safe maximum tension for a given sheave, divide the Safe Working Load by 2.
2. These sizes are not commonly kept in stock and may have longer leadtimes compared to other more commonly-stocked sizes.