

# GD0375 thru GD4000

## Wireless Line Riding Tensiometer and Rope Payout Sensor

### Features

- All stainless frame and hardware, treated 4140 steel sheaves and fully sealed bearings.
- Wire rope dimensions from 3/8" (9.5mm) to 4" (102mm) diameter
- Single line capacity up to 450,000 lb (250 000 kg)
- Load reading precision: +/-3% of rope capacity
- Rope payout resolution: 1" (25.4 mm)
- Optimized for crane or marine vessel applications; load and rope payout are transmitted up to four times per second.
- Swing arm or permanent feet installation options
- Radio range with line of sight: 4000 ft. (1300 m)
- Operates with one 'D' cell battery lithium 3.6V or alkaline 1.5V.
- 1 to 2 years battery life for typical applications
- ISM license free radio; wavelength and modulation optimized for radio communication in industrial environments.
- Temperature range: -40°C to 85°C (-40°F to 185°F)
- Temperature compensated
- Potted electronics for increased water protection

### Applications

Measurement of wire rope tension (load) and/or rope payout with payout speed in all environments, including offshore.

### General Description

The Line Riding Tensiometer operates by displacing a cable thru 3 sheaves and reading the bending force. In order to have a reliable load reading, the cable must contact all 3 sheaves in all operation positions.

The payout sensor reads magnet encoders on the center sheave to compute a payout and speed value.

Transmitter box mounted to the line riding tensiometer houses the battery, radio transmitter, load converter, and payout sensor.



Line Riding Tensiometer Family

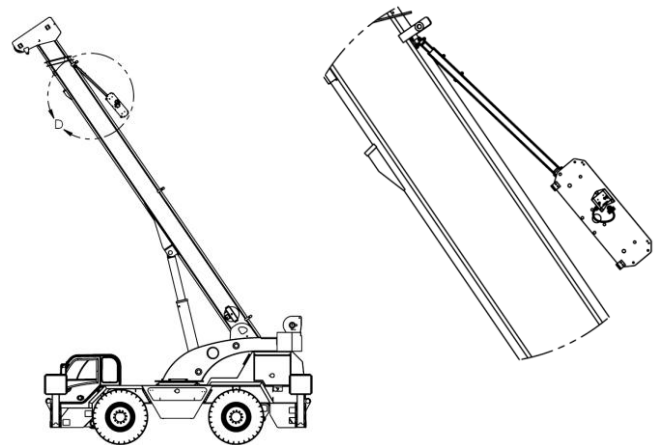


Figure: Typical installation on the main boom of a crane for the measurement of load and rope payout

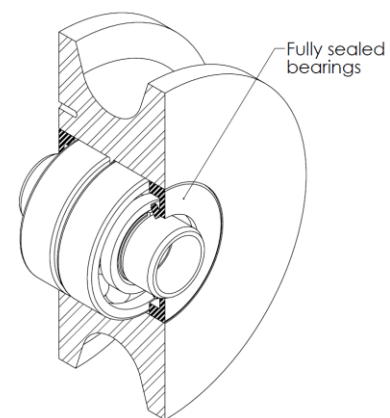


Figure: Integral sheave's bearings sealing for ultimate corrosion protection

# GD0375 thru GD4000

## Table of Contents

Features .....	1
Applications .....	1
General Description .....	1
Table of Contents .....	2
Ordering Information .....	2
Specifications .....	3
Absolute Maximum Ratings .....	3
Certifications .....	3
Dimensions.....	4
Model Specifications and Options .....	4
Materials: .....	4

## Ordering Information

Model	Description
GDXXXX	Line Riding Tensiometer frame with appropriate sheaves for the wire rope. The four 'X' digits are the wire rope diameter in micro inches. For example, GD2500 is for a 2.5" diameter cable, GS1417 is for a 36mm cable.
GS007-01	Load only RF transmitter
GS007-02	Load and Rope Payout/Speed RF Transmitter
GD01X	Appropriate swing arm for the frame size (see table page 6)
GD02X	Appropriate feet kit for the frame size (see table page 6)

# GD0375 thru GD4000

## Specifications

Parameter	Test Condition	Min	Typ	Max	Unit
<b>Rope Tension Measurement</b>					
Resolution	+/-	0.05	0.2	0.5	% of SWL
Accuracy	+/-	1	2	6	% of SWL
<b>Rope Movement Measurement</b>					
Payout Resolution (see page 6 for more precise values)	+/-	0.5 (12.7)	0.6 (15)	1 (25.4)	in. (mm)
<b>Radio Power</b>					
	GS007	0.013 11	0.016 12	0.020 13	W dBm
<b>Radio Frequency</b>					
North American version	GS007	902	916	928	MHz
<b>Battery life</b>					
	'D' cell battery life depends on usage	12	24	28	Month

## Absolute Maximum Ratings

Parameter	Test Condition	Min	Typ	Max	Unit
Temperature range	Operating	-40		+85	°C
		-40		+185	°F

## Certifications

FCC/IC

# GD0375 thru GD4000

## Specifications by Model and Options

Line Rider model	Max load (lb)	Max Load (kg)	Payout resolution* (in)	Payout resolution* (mm)	Cable diameter (in)	Weight lb [kg]	Load Only RF Transmitter	Load and Rope Payout RF Transmitter	Swing Arm option	Feet Kit Option	
GD0375	4743	2156	0.57	14.46	3/8	29 [13]	GS007-01	GS007-02	GD012	GD030	
GD0500	8343	3792	0.53	13.47	½						
GD0563	10571	4805	0.51	12.97	9/16						
GD0625	12971	5896	0.49	12.47	5/8	62 [28]				GD013	GD030
GD0750	18514	8416	0.75	18.95	¾						
GD0875	25029	11377	0.71	17.95	7/8						
GD0945	32514	14779	0.68	17.21	24mm						
GD1000	32514	14779	0.67	16.96	1						
GD1125	40857	18571	0.63	15.96	1 1/8	100 [45.5]				GD014	GD031
GD1250	50229	22831	0.52	13.30	1 ¼						
GD1260	60571	27532	0.52	13.30	32mm						
GD1375	60571	27532	0.50	12.63	1 3/8						
GD1417	71429	32468	0.48	12.30	36mm						
GD1500	71429	32468	0.47	11.97	1 ½						
GD1625	83429	37922	0.45	11.30	1 5/8	250 [113.5]				GD022	GD031
GD1750	96571	43896	0.68	17.29	1 ¾						
GD1890	124000	56364	0.63	16.13	48mm						
GD2000	124000	56364	0.62	15.79	2						
GD2250	155429	70649	0.56	14.30	2 ¼	1010 [459]				GD023	GD032
GD2500	214857	97662	1.05	26.60	2 ½						
GD3000	307429	139740	0.92	23.27	3						
GD4000	528571	240260	0.72	18.29	4						

\*Do not use Payout data as a precise measurement.

### Materials:

The frame, load sensing pin, and hardware are made of stainless steel (AISI 304 and 17-4PH1025), this includes the optional swing arm and brackets. The sheaves are in nitrided 4140 steel and the bearings are integrally sealed from the environment.

### Replacement parts:

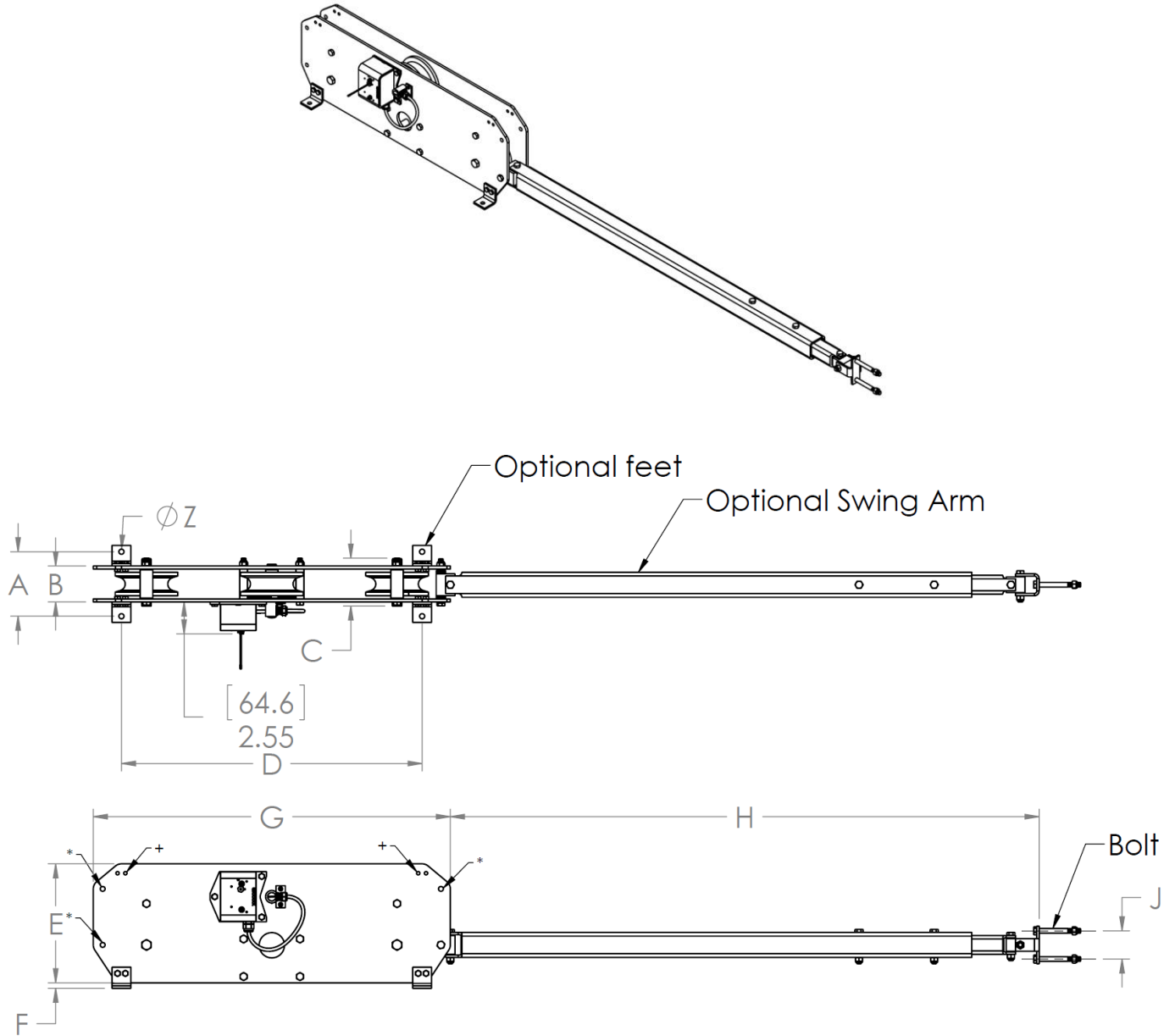
Line Rider model	Cable Roller	Bearing	Seal
GD0375/GD0500/GD0563/ GD0625	PF504	5205**	CR 25x52x7 HMS5 RG
GD0750/GD0875/GD0945/GD1000/GD1125	PF604	6205	CR 25x52x7 HMS5 RG
GD1250/GD1260/GD1375/GD1417/GD1500/GD1625	PF704	6207	CR 35x72x12 HMS5 RG
GD1750/GD1890/GD2000/GD2250	PF804	6210	CR 50x90x10 HMS5 RG
GD2500/GD3000/GD4000	PF904	33113	CR 70x110x10 HMS5 RG

All bolting can be replaced with UNC nuts and bolts. Material is AISI 304 stainless steel or better.

\*\*Bearing number 4205 on models sold before 2012.

GD0375 thru GD4000

**Dimensions**



Line Riding Tensiometer (not to scale)

Units are in inches [millimeters]  
\* Alternative mounting holes for the swing arm  
+ Secondary feet mounting holes

# GD0375 thru GD4000

Line Rider model	D I M E N S I O N S (inches)										
	A	B	C	D	E	F	G	H adjustable in 6" [152mm] increments	J	Z	Bolt
GD0375	4.53	2.25	3.32	18.00	7.38	0.44	21.5	47.00-77.00	2.25	0.41	3/8-16
GD0500	4.53	2.25	3.32	18.00	7.38	0.44	21.5	47.00-77.00	2.25	0.41	3/8-16
GD0563	4.53	2.25	3.32	18.00	7.38	0.44	21.5	47.00-77.00	2.25	0.41	3/8-16
GD0625	4.53	2.25	3.32	18.00	7.38	0.44	21.5	47.00-77.00	2.25	0.41	3/8-16
GD0750	5.15	2.88	3.82	24.00	9.50	0.44	28.50	48.00-78.00	2.25	0.41	3/8-16
GD0875	5.15	2.88	3.82	24.00	9.50	0.44	28.50	48.00-78.00	2.25	0.41	3/8-16
GD0945	5.15	2.88	3.82	24.00	9.50	0.44	28.50	48.00-78.00	2.25	0.41	3/8-16
GD1000	5.15	2.88	3.82	24.00	9.50	0.44	28.50	48.00-78.00	2.25	0.41	3/8-16
GD1125	5.15	2.88	3.82	24.00	9.50	0.44	28.50	48.00-78.00	2.25	0.41	3/8-16
GD1250	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1260	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1375	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1417	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1500	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1625	5.88	3.50	5.02	32.00	10.75	0.80	36.00	46.75-76.75	2.25	0.53	3/8-16
GD1750	6.91	4.54	6.70	42.00	14.50	0.25	48.50	64.06-88.06	3.25	0.53	1/2-13
GD1890	6.91	4.54	6.70	42.00	14.50	0.25	48.50	64.06-88.06	3.25	0.53	1/2-13
GD2000	6.91	4.54	6.70	42.00	14.50	0.25	48.50	64.06-88.06	3.25	0.53	1/2-13
GD2250	6.91	4.54	6.70	42.00	14.50	0.25	48.50	64.06-88.06	3.25	0.53	1/2-13
GD2500	11.90	7.50	10.04	60.50	21.00	0.50	68.00	63.81-87.81	3.25	1.00	1/2-13
GD3000	11.90	7.50	10.04	60.50	21.00	0.50	68.00	63.81-87.81	3.25	1.00	1/2-13
GD4000	11.90	7.50	10.04	60.50	21.00	0.50	68.00	63.81-87.81	3.25	1.00	1/2-13

Line Rider model	D I M E N S I O N S (mm)										
	A	B	C	D	E	F	G	H adjustable in 6" [152mm] increments	J	Z	Bolt
GD0375	115.1	57.2	84.3	457.2	187.5	11.2	546.1	1194-1956	57.2	10.4	3/8-16
GD0500	115.1	57.2	84.3	457.2	187.5	11.2	546.1	1194-1956	57.2	10.4	3/8-16
GD0563	115.1	57.2	84.3	457.2	187.5	11.2	546.1	1194-1956	57.2	10.4	3/8-16
GD0625	115.1	57.2	84.3	457.2	187.5	11.2	546.1	1194-1956	57.2	10.4	3/8-16
GD0750	130.8	73.2	97.0	609.6	241.3	11.2	723.9	1219-1981	57.2	10.4	3/8-16
GD0875	130.8	73.2	97.0	609.6	241.3	11.2	723.9	1219-1981	57.2	10.4	3/8-16
GD0945	130.8	73.2	97.0	609.6	241.3	11.2	723.9	1219-1981	57.2	10.4	3/8-16
GD1000	130.8	73.2	97.0	609.6	241.3	11.2	723.9	1219-1981	57.2	10.4	3/8-16
GD1125	130.8	73.2	97.0	609.6	241.3	11.2	723.9	1219-1981	57.2	10.4	3/8-16
GD1250	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1260	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1375	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1417	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1500	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1625	149.4	88.9	127.5	812.8	273.1	20.3	914.4	1187-1949	57.2	13.5	3/8-16
GD1750	175.5	115.3	170.2	1066.8	368.3	6.4	1231.9	1627-2237	82.6	13.5	1/2-13
GD1890	175.5	115.3	170.2	1066.8	368.3	6.4	1231.9	1627-2237	82.6	13.5	1/2-13
GD2000	175.5	115.3	170.2	1066.8	368.3	6.4	1231.9	1627-2237	82.6	13.5	1/2-13
GD2250	175.5	115.3	170.2	1066.8	368.3	6.4	1231.9	1627-2237	82.6	13.5	1/2-13
GD2500	302.3	190.5	255.0	1536.7	533.4	12.7	1727.2	1621-2330	82.6	25.4	1/2-13
GD3000	302.3	190.5	255.0	1536.7	533.4	12.7	1727.2	1621-2330	82.6	25.4	1/2-13
GD4000	302.3	190.5	255.0	1536.7	533.4	12.7	1727.2	1621-2330	82.6	25.4	1/2-13