MEASURE AND CONTROL

dynafor®

dynamometer selection guide

Measure and control of forces and loads in Industry

Solution for multiple applications. Adjustment certificate. Optional ISO 376.

MODEL	CAPACITY	PRECISION	REMOTE DISPLAY	PROTECTION RATING	FUNCTIONALITIES
 **handifor®**	20 / 50 / 100 / 200 kg	0.5%	No	IP 40	**BASIC** ▪ Tare ▪ Units ▪ Peak load ▪ Automatic stop
 **LLZ2**	1 / 3.2 / 6.4 / 12.5 / 20 t	0.3%	No	IP 65	
 **LLX1**	0.5 / 1 / 2 / 3.2 / 5 / 6.3 / 12.5 / 20 t	0.2%	Yes, optional	IP 65	**STANDARD** ▪ Basic functionalities + ▪ Settable automatic stop ▪ Filtering settable dynamic effects
 **MWX**	0.5 / 1 / 2 / 3.2 / 5 / 6.3 / 12.5 /25 t	0.1%	Yes, optional	IP 65	
 **LLX2**	0.5 / 1 / 2 / 3.2 / 5 / 6.3 / 10 t	0.1%	Yes	IP 66 IP 67 optional	**ADVANCED** ▪ Standard functionalities + ▪ Settable automatic stop ▪ Functionalities listed below
 **LLXh**	15 / 25 / 50 / 100 / 250 t	0.2%	Yes	IP 66 IP 67 optional	

LLX2 display

AL63

ADVANCED SPECIFIC FUNCTIONALITITES

FUNCTIONALITY	ADDITIONAL EQUIPMENT
Backlight screen	–
Locking of setting menu	–
Multiple and settable alarms	–
Associations of multiple sensors/displays	Remote LLX2 display
High visibility wired remote LED display	AL63 or AL128 display units
Data acquisition on PC (1-8 sensors)	dynafor® connection software
IT integration (1-32 sensors)	Communication protocol

handifor®
mini weighers

The lightweight, compact and ergonomic handifor® is built for measuring small forces or loads. Specially designed for difficult load checking conditions, the handifor® will measure the weight of your packages, dispatch bags, courier, materials in laboratories and many other materials that need weighing.

TECHNICAL SPECIFICATIONS

- Built to measure small forces or loads in different environments
- Accuracy: ±0.5% of capacity
- Temperature range: from -10°C to 50°C (14°F to 122°F)
- Units of measure: lbs. and kg
- 9/16 in. (14 mm) LCD digits
- Power supply: two 1.5 V “AAA” batteries
- Operating life: 100 hours
- Protection: IP 40
- Supplied with a snap shackle and a “S” hook

MODEL	WLL	ACCURACY	MIN. DISPLAY	INCREMENT	MAX. DISPLAY	WEIGHT
handifor®	40 lbs. (20 kg)	±0.2 lbs. (±0.1 kg)	0.2 lbs. (0.1 kg)	0.2 lbs. (0.1 kg)	55 lbs. (25 kg)	1.1 lbs. (0.5 kg)
handifor®	100 lbs. (50 kg)	±0.6 lbs. (±0.3 kg)	0.4 lbs. (0.2 kg)	0.4 lbs. (0.2 kg)	65 kg (143 lbs.)	1.1 lbs. (0.5 kg)
handifor®	200 lbs. (100 kg)	±1.1 lbs. (± 0.5 kg)	0.4 lbs. (0.2 kg)	0.4 lbs. (0.2 kg)	286 lbs. (130 kg)	1.3 lbs. (0.6 kg)
handifor®	400 lbs. (200 kg)	±2.2 lbs. (±1.0 kg)	1 lbs. (0.5 kg)	1.1 lbs. (0.5 kg)	572 lbs. (260 kg)	4.2 lbs. (1.9 kg)

dynafor® LLZ2
load indicators

The dynafor® LLZ2 is rugged and lightweight precision industrial dynamometer. It measures tensile forces or suspended loads in all positions. The dynamometer displays in pounds, kilograms or decanewtons and offers more than 350 hours of battery life.

Ideal for monitoring lifting systems, check weighing in factories, for checking tension in power lines and guy ropes, and many other applications. The dynafor® LLZ2 display’s shape with beveled corners minimizes the risk of catching during operations of lifting in difficult environments.

TECHNICAL SPECIFICATIONS

- Accuracy: ±0.3% of nominal capacity
- Extended capacity range from 2,000 to 40,000 lbs. (1 to 20 t)
- Operating temperature range from -4°F to 122°F (-20°C to 50°C)
- Power supply: two 1.5 V “AAA” batteries
- Protection: IP 65 (NEMA 4)
- Display in mass or force
- 11/16 in. (18 mm) LCD digits

APPLICATIONS

- Monitoring lifting systems
- Test bench
- Checking data input and output in factories
- Checking tension in power lines and guy ropes
- Checking the pulling capacity of trawler

OPTIONAL ACCESSORIES

- Shackles
- Hooks

MODEL	WLL	ACCURACY (0.3%)	MIN. DISPLAY	INCREMENT	MAX. DISPLAY	WEIGHT
LLZ2 – 1 t	2,000 lbs. (1,000 kg)	±6.6 lbs. (±3 kg)	2 lbs. (1 kg)	2 lbs. (1 kg)	2,200 lbs. (1,100 kg)	1.8 lbs. (0.8 kg)
LLZ2 – 3.2 t	6,400 lbs. (3,200 kg)	±19.8 lbs. (±9.6 kg)	10 lbs. (5 kg)	10 lbs. (5 kg)	7,040 lbs. (3,520 kg)	2 lbs. (0.9 kg)
LLZ2 – 6.3 t	12,600 lbs. (6,300 kg)	±39.7 lbs. (±18.9 kg)	20 lbs. (10 kg)	20 lbs. (10 kg)	13,860 lbs. (6,930 kg)	3.1 lbs. (1.4 kg)
LLZ2 – 12.5 t	25,000 lbs. (12,500 kg)	±81.6 lbs. (±37.5 kg)	40 lbs. (20 kg)	40 lbs. (20 kg)	27,500 lbs. (13,750 kg)	7.1 lbs. (3.2 kg)
LLZ2 – 20 t	40,000 lbs. (20,000 kg)	±132.3 lbs. (±60 kg)	100 lbs. (50 kg)	100 lbs. (50 kg)	44,000 lbs. (22,000 kg)	11 lbs. (5 kg)

dynafor® LLX1
load indicators

The leader in industrial dynamometers
PRECISE | STRONG | RELIABLE

The dynafor® LLX1 dynamometers are precision force sensors used to measure forces and indicate loads. The shape of the dynamometers enables the use of standard shackles on both ends. The dynamometers of this range function in all positions for the measurement of force and suspended for weighing purpose.

OPERATING PRINCIPLE
Strain gauge measurement of the extension, within its limits of elasticity, of a metal body subjected to traction stress. The sensor generates an electrical signal that is proportional to the load. This signal is processed by a micro-processor analyser and then displayed on a built in LCD display.

TECHNICAL SPECIFICATIONS
- Precision: ±0.2% of the full scale
- Range: from 1,000 to 40,000 lbs. (½ up to 20 t)
- 11⁄16 in. (18 mm) LCD digits
- Long lasting (batteries included)
- Protection: IP 65 (NEMA 4)
- CEM approved
- Radio certification: – FCC Part 15 (US)
  – Approved by Industry Canada
- Safety coefficient: more than four
- Comes in a plastic carrying case
- Option: LLX1 Remote readout
- Worldwide accreditation
- Wireless range up to 131 ft. (40 m)
- Interchangeability with other displays
- Bow shackles and swivel hooks available

MODEL	WORKING LOAD LIMIT	ACCURACY	MINIMUM DISPLAY	INCREMENT	WEIGHT
LLX1 – ½ t	1,000 lbs. (500 kg)	±2.2 lbs. (±1.0 kg)	0.5 lbs. (0.2 kg)	0.5 lbs. (0.2 kg)	2.4 lbs. (1.1 kg)
LLX1 – 1 t	2,000 lbs. (1,000 kg)	±4.4 lbs. (±2.0 kg)	1 lbs. (0.5 kg)	1 lbs. (0.5 kg)	2.4 lbs. (1.1 kg)
LLX1 – 2 t	4,000 lbs. (2,000 kg)	±8.8 lbs. (±4.0 kg)	2 lbs. (1 kg)	2 lbs. (1 kg)	2.9 lbs. (1.3 kg)
LLX1 – 3.2 t	6,400 lbs. (3,200 kg)	±13.2 lbs. (±6.0 kg)	2 lbs. (1 kg)	2 lbs. (1 kg)	3.3 lbs. (1.5 kg)
LLX1 – 5 t	10,000 lbs. (5,000 kg)	±22.0 lbs. (±10.0 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	5.0 lbs. (2.3 kg)
LLX1 – 6.3 t	12,600 lbs. (6,300 kg)	±28.6 lbs. (±13.0 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	5.0 lbs. (2.3 kg)
LLX1 – 12.5 t	25,000 lbs. (12,500 kg)	±55.0 lbs. (±25.0 kg)	10 lbs. (5 kg)	10 lbs. (5 kg)	9.5 lbs. (4.3 kg)
LLX1 – 20 t	40,000 lbs. (20,000 kg)	±88.0 lbs. (±40.0 kg)	20 lbs. (10 kg)	20 lbs. (10 kg)	15.4 lbs. (7 kg)
LLX1 display	–	–	–	–	0.44 lbs. (0.2 kg)

dynafor® LLX2
load indicators

The Tractel® dynafor® LLX2 is a major innovation in industrial dynamometry, providing the highest degree of ergonomics, precision, reliability, flexibility and endurance.

TECHNICAL SPECIFICATIONS
- Accuracy: ±0.1% of nominal capacity
- Capacity range from 1,000 to 20,000 lbs. (½ to 10 t)
- Operating temperature range from -4 to 104°F (-20 to 40°C)
- Power supply: three 1.5 V “AA” batteries
- Sensor protection: IP 66 (NEMA 4)
- Display protection: IP 54 (NEMA 3)

FEATURES AND BENEFITS
- Removable display:
  - Radio connection 2.4 GHz
  - 260 ft. (80 m) range—very convenient to monitor loads from afar
  - Able to transmit load data to a maximum of four different displays
  - Allows for up to four sensors to send data to a single display, individual and summed
  - 1 in. (25 mm) LED digits with backlight
- Allows for use with Tractel® ’s monitoring software to print or record data being displayed
- Range of fastening accessories—uses standard grade 80 and above attachment fittings
- Crossed fastening planes allow for articulation in two axis
- Resistant to shock and weather
- Wireless link, allows up to 16 units to operate in the same proximity without interference
- Coefficient safety: minimum four
- Removable / Detachable display 1 x Li-on battery (delivered with charger)
- The standard version of the equipment comes with batteries and power pack in a carrying case
- Radio certification: – FCC Part 15 (US)
  – Approved by Industry Canada

OPTIONAL ACCESSORIES
- Monitoring software for PC
- Chain accessories with rapid connection
- Connecting shackles
- Protection: IP 67 (NEMA 6) with precision of ±0.2% of nominal capacity and range of 200 ft. (60 m)

MODEL	WORKING LOAD LIMIT	ACCURACY	MINIMUM DISPLAY	INCREMENT	WEIGHT
LLX2 – ½ t	1,000 lbs. (500 kg)	±1.1 lbs. (±0.5 kg)	0.5 lbs. (0.5 kg)	0.2 lbs. (0.1 kg)	5,1 lbs. (2.3 kg)
LLX2 – 1 t	2,000 lbs. (1,000 kg)	±2.2 lbs. (±1 kg)	2.5 lbs. (1 kg)	0.5 lbs. (0.2 kg)	5,1 lbs. (2.3 kg)
LLX2 – 2 t	4,000 lbs. (2,000 kg)	±4.4 lbs. (±2 kg)	5 lbs. (2.5 kg)	1 lbs. (0.5 kg)	5,1 lbs. (2.3 kg)
LLX2 – 3.2 t	6,400 lbs. (3,200 kg)	±6.4 lbs. (±3.2 kg)	5 lbs. (2.5 kg)	1 lbs. (0.5 kg)	5,1 lbs. (2.3 kg)
LLX2 – 5 t	10,000 lbs. (5,000 kg)	±11 lbs. (±5 kg)	10 lbs. (5 kg)	2 lbs. (1 kg)	7.5 lbs. (3,4 kg)
LLX2 – 6.3 t	12,600 lbs. (6,300 kg)	±13.9 lbs. (±6.3 kg)	10 lbs. (5 kg)	2 lbs. (1 kg)	7.5 lbs. (3,4 kg)
LLX2 – 10 t	20,000 lbs. (10,000 kg)	±22 lbs. (±10 kg)	25 lbs. (10 kg)	5 lbs. (2 kg)	14,3 lbs. (6,5 kg)
LLX2 display	–	–	–	–	0.44 lbs. (0.2 kg)

dynafor® LLXh

load indicators

dynafor® LLXh devices are load indicators to measure hanging loads in pounds or kilograms. and tensile forces (N). The radio connection (2.4 GHz) with 260 ft. (80 m) working range is permanent between the dynafor® LLXh sensor and the display unit. The shape of the dynamometers enable the use of standard shackles on both ends. The dynamometers of this range function in all positions for the measurement of force and suspended for weighing purpose.

OPERATING PRINCIPLE

Strain gauge measures the extension, within its limits of elasticity, of a metal body subjected to traction stress. The sensor generates an electrical signal that is proportional to the load. This signal is processed by a micro-processor analyser and then transmitted via radio waves to the display unit, which immediately displays the load applied to the sensor to which it is linked. The display unit is compatible with all of the dynafor® LLX2 or LLXh model sensors, irrespective of their capacity.

TECHNICAL SPECIFICATIONS

- Accuracy: ±0.2% of nominal capacity
- Capacity range from 30,000 to 500,000 lbs. (15 to 250 t)
- Operating temperature range from -4 to 104°F (-20 to 40°C)
- Power supply: three 1.5 V “AA” batteries
- Sensor protection: IP 65 (NEMA 5)
- Optional sensor protection: IP 67 (NEMA 6)
- Display protection: IP 54 (NEMA 3)
- Radio certification: – FCC Part 15 (US)
  – Approved by Industry Canada

FEATURES

- Utilizes the same technology as the dynafor® LLX2, which permits the use of the same remote display with the following features:
  - 260 ft. (80 m) range: very convenient to monitor loads from afar.
  - Wireless link, allows up to 16 units to operate in the same proximity without interference
  - Able to transmit load data to a maximum of four different displays
  - Allows for up to four sensors to send data to a single display, individual and summed
  - 1 in. (25 mm) LED digits with backlight
- Allows for use with Tractel®’s monitoring software to print or record data being displayed

OPTIONAL ACCESSORIES

- Monitoring software for PC
- Connecting shackles
- Protection: IP 67 (NEMA 6) with precision of ±0.2% of nominal capacity and range of 200 ft. (60 m)

MODEL	WORKING LOAD LIMIT	ACCURACY	MINIMUM DISPLAY	INCREMENT	WEIGHT
LLXh – 15 t	30,000 lbs. (15,000 kg)	±66 lbs. (±30 kg)	50 lbs. (25 kg)	10 lbs. (5 kg)	8.8 lbs. (4 kg)
LLXh – 25 t	50,000 lbs. (25,000 kg)	±110 lbs. (±50 kg)	100 lbs. (50 kg)	20 lbs. (10 kg)	14.5 lbs. (6,6 kg)
LLXh – 50 t	100,000 lbs. (50,000 kg)	±220 lbs. (±100 kg)	200 lbs. (100 kg)	40 lbs. (20 kg)	33 lbs. (15 kg)
LLXh – 100 t	200,000 lbs. (100,000 kg)	±440 lbs. (±200 kg)	500 lbs. (250 kg)	100 lbs. (50 kg)	101 lbs. (46 kg)
LLXh – 250 t	500,000 lbs. (250,000 kg)	±1,100 lbs. (±500 kg)	1,000 lbs. (500 kg)	200 lbs. (100 kg)	473 lbs. (215 kg)
LLXh display	–	–	–	–	0.44 lbs. (0.2 kg)

dynafor® MWX
crane scales

The dynafor® MWX gives you the possibility to control and measure loads on cranes. It has great work autonomy of up to 350 hours battery life. The dynafor® MWX, with its LCD readout, programmable functions and remote display, is ideal for weighing with cranes. Infrared control with LCD and remote read-out available on all models.

TECHNICAL SPECIFICATIONS

- Accuracy: ±0.1% of nominal capacity
- Capacity range from 1,000 to 50,000 lbs. (½ to 25 t)
- Operating temperature from 14 to 104°F (-10 to 40°C)
- Power supply: three 1.5 V "AA" batteries, up to 350 hours
- 11⁄16 in. (18 mm) LCD digits
- Protection: IP 65 (NEMA 4)
- Temperature automatically compensates to zero adjustment when equipment is switched on free of load
- Radio certification: – FCC Part 15 (US)
  – Approved by Industry Canada

FEATURES

- LCD display
- Automatic zero when switched on
- Tare over full range
- Peak hold: maximum effort held in memory
- Low battery indicator
- Overload indicator
- Articulate in two axis: front to back and side to side
- Swivel hook or shackle is available as an option on the 50,000 lbs. (25 t) model

OPTIONAL ACCESSORIES

- Infra-red controled with 30 ft. (10 m) range
- Radio controled with 200 ft. (60 m) range

½ to 12.5 t models

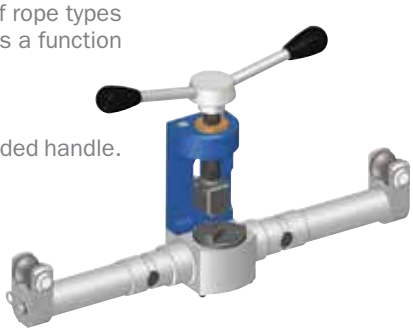
25 t model

MODEL	WORKING LOAD LIMIT	ACCURACY	MINIMUM DISPLAY	INCREMENT	WEIGHT
MWX - ½ t	1,000 lbs. (500 kg)	±1.1 lbs. (±0.5 kg)	0.5 lbs. (0.2 kg)	0.5 lbs. (0.2 kg)	9.5 lbs. (4.3 kg)
MWX - 1 t	2,000 lbs. (1,000 kg)	±2.2 lbs. (±1 kg)	1 lbs. (0.5 kg)	1 lbs. (0.5 kg)	9.5 lbs. (4.3 kg)
MWX - 2 t	4,000 lbs. (2,000 kg)	±4.4 lbs. (±2 kg)	2 lbs. (1 kg)	2 lbs. (1 kg)	9.5 lbs. (4.3 kg)
MWX - 3.2 t	6,400 lbs. (3,200 kg)	±6.4 lbs. (±3.2 kg)	2 lbs. (1 kg)	2 lbs. (1 kg)	9.5 lbs. (4.3 kg)
MWX - 5 t	10,000 lbs. (5,000 kg)	±11 lbs. (±5 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	20 lbs. (9 kg)
MWX - 6.3 t	12,600 lbs. (6,300 kg)	±13.9 lbs. (±6.3 kg)	5 lbs. (2 kg)	5 lbs. (2 kg)	20 lbs. (9 kg)
MWX - 12.5 t	25,000 lbs. (12,500 kg)	±27.5 lbs. (±12.5 kg)	10 lbs. (5 kg)	10 lbs. (5 kg)	44 lbs. (20 kg)
MWX - 25 t	50,000 lbs. (25,000 kg)	±55 lbs. (±25 kg)	20 lbs. (10 kg)	20 lbs. (10 kg)	53 lbs. (24 kg)

dynarope HF 36
tensiometer

The Dynarope is designed for measuring forces in pretensioned wire ropes (guys, aerials, pylons and masts, supports, catenaries and all textiles ropes or wire ropes) that cannot be dismantled and for which tension must be known or confirmed. The Dynarope fits directly onto the tensioned wire rope and is simply held in position by turning a handle. This device is comprised of a load cell with strain gauges and a display driven by a microprocessor. Display of the force measured by the load cell takes into account parameters you enter such as the diameter, composition and structure of the rope.

NUMERIC DISPLAY
Digital technology allows the Dynarope to contain an extremely large database of rope types and sizes. When in "special" operation, the user may create his own database as a function of specific parameters.



QUICK FITTING AND REMOVAL OPERATIONS
For repetitive measuring operations, a simple mechanical lever replaces the threaded handle.

TECHNICAL SPECIFICATIONS
- Accuracy: <1% of nominal capacity
- Capacity range from 440 to 88,000 lbs. (200 to 40,000 kg)
- Large range of wire rope sizes from 3⁄16 to 1¾ in. (5 to 44 mm)
- Operating temperature from -4 to 140°F (-20 to 60°C)
- Power supply: three 1.5 V "AA" batteries, up to 200 hours
- Displays mass or force
- Protection: IP 65 (NEMA 4)

MODEL	WORKING LOAD LIMIT	WIRE ROPE Ø	MINIMUM DISPLAY	INCREMENT	WEIGHT
HF 36/1/LPT	400–10,000 lbs. (200–5,000 kg)	3⁄16–½ in. (5–13 mm)	400 lbs. (200 kg)	10 lbs. (5 kg)	5.3 lbs. (2.4 kg)
HF 36/2/LPT	800–40,000 lbs. (400–20,000 kg)	3⁄8–1⅛ in. (9–28 mm)	400 lbs. (200 kg)	50 lbs. (25 kg)	11.5 lbs. (5.2 kg)

dynarope HF 37
small capacity tensiometer

The Dynarope HF 37 digital is designed for rope tension measurement, with fast and easy installation directly on the rope (steel, textile).

TECHNICAL SPECIFICATIONS
- Accuracy: <1% of nominal capacity
- Capacity range from 200 to 6,000 lbs. (100 to 3,000 kg)
- Range of wire rope sizes from 3⁄16 to 11⁄16 in. (5 to 18 mm)
- Operating temperature from -4 to 140°F (-20 to 60°C)
- Power supply: three 1.5 V "AA" batteries, up to 125 hours
- Displays mass or force
- Protection: IP 65 (NEMA 4)

MODEL	WORKING LOAD LIMIT	WIRE ROPE Ø	MINIMUM DISPLAY	INCREMENT	WEIGHT
HF 37/1/LPT	200–3,000 lbs. (100–1,500 kg)	3⁄16–½ in. (5–13 mm)	110 lbs. (50 kg)	2 lbs. (1 kg)	4.9 lbs. (2.2 kg)
HF 37/2/LPT	400–6,000 lbs. (200–3,000 kg)	5⁄16–11⁄16 in. (8.4-18 mm)	110 lbs. (50 kg)	5 lbs. (2 kg)	4.9 lbs. (2.2 kg)

dynasafe® HF 31 and HF 32

universal load limiter series

Tractel® universal load limiters HF 31 and HF 32, are clamp-on models designed for overhead travelling bridge cranes and feature improved durability and reliability.

HF 31 MODEL

- Repeatability: ±1% of nominal capacity
- Capacity range from 450 to 6,400 lbs. (200 to 3,200 kg), per part of hoisting line
- Range of wire rope sizes from 3⁄16 to 5⁄8 in. (5 to 16 mm)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Operates on 220 V consuming 4 A, maximum
- Weather protection to IP 63 (NEMA 3)
- Two integrated micro switches, allowing for one or two safety thresholds (two set points)
- Easy to install, does NOT require any dismantling of any hoist load ropes
- Manufactured from aerospace quality aluminum with anodized surface treatment
- No maintenance required
- Requires no other interfaces
- Includes both NO and NC contacts
- Supplied with 6 ft. (2 m) connection lead

HF 32 A-SERIES STANDARD MODEL

- Repeatability: ±1% of nominal capacity
- Capacity range from 600 to 24,000 lbs. (300 to 12,000 kg)
- Wire rope sizes from 11⁄16 to 1 3⁄8 in. (17 to 36 mm)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Maximum switching power 220 V/5 A
- Protection: IP 55 (NEMA 4)
- Mounts directly on the dead end of the rope
- Supplied with 6 ft. (2 m) connection lead
- Does not require a monitor (includes both NO and NC contacts)
- Fast installations

HF 32 B-SERIES HIGH PRECISION MODEL

- Repeatability: ±0.5% of nominal capacity
- Capacity range from 200 to 12,000 lbs. (100 to 6,000 kg)
- Wire rope sizes from 11⁄16 to 1 in. (17 to 26 mm)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Switching power up to 12 V DC
- Protection: IP 55 (NEMA 4)
- Optional protection: IP 67 (NEMA 6)
- Adjustable damper to compensate for dynamic effects HF 85
- Output for audible siren, visual strobe and two switches (No and NC)
- Requires HF 85 mechanical monitor
- Supplied with 6 ft. (2 m) connection lead

Complies with ANSI/ASME HST-4M overload limiting device.

MODEL	WIRE ROPE Ø	SINGLE LINE CAPACITY
HF 31/1/A2	3⁄16–5⁄8 in. (5–16 mm)	400–6,400 lbs. (200–3,200 kg)
HF 32/2/A	11⁄16–1 in. (17–26 mm)	600–12,000 lbs. (300–6,000 kg)
HF 32/3/A	1 1⁄16–1 3⁄8 in. (27–36 mm)	2,000–24,000 lbs. (1,000–12,000 kg)
HF 32/1/B*	3⁄16–5⁄8 in. (5–16 mm)	400–6,400 lbs. (200–3,200 kg)
HF 32/2/B*	11⁄16–1 in. (17–26 mm)	200–12,000 lbs. (100–6,000 kg)
HF 32/3/B*	1 1⁄16–1 3⁄8 in. (27–36 mm)	2,000–24,000 lbs. (1,000–12,000 kg)

** The B type has to be used with a monitor HF 85 in order to amplify the micro switch signal. The B type with monitor HF 85 is recommended when the crane dynamics effects should be absorbed.*

dynasafe® HF 05

tension load limiting cell | in-line mechanical load cell

The dynasafe® HF 05 mechanical load cell has been designed to provide a trip point in lifting systems, which have a dead-end wire rope. The trip point load limiter generates an “all or nothing” type signal in the event that a programmable target value is exceeded. Available in one or two thresholds versions.

TECHNICAL SPECIFICATIONS

- Repeatability: ±1%
- Capacity range from 1,000 to 24,000 lbs. (500 to 12,000 kg)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Protection: IP 54 (NEMA 3)
- Includes 6 ft. (2 m) connection lead
- Switching power up to 220 VAC/4 A
- Simple adjustment procedure and easy to install
- Mounts directly to wedge socket at dead end

MODEL	CAPACITY	MODEL A WITH 1-TRIP POINT	MODEL A WITH 2-TRIP POINT	MODEL B WITH 1-TRIP POINT AND HF 85 MONITOR	WEIGHT
HF 05/1	1,000 lbs. (500 kg)	■	■	■	0.5 lbs. (0.23 kg)
HF 05/2	2,500 lbs. (1,250 kg)	■	■	■	0.5 lbs. (0.23 kg)
HF 05/3	4,000 lbs. (2,000 kg)	■	■	■	1 lbs. (0.45 kg)
HF 05/4	6,400 lbs. (3,200 kg)	■		■	2 lbs. (0.9 kg)
HF 05/5	10,000 lbs. (5,000 kg)			■	1.5 lbs. (0.7 kg)
HF 05/6	16,000 lbs. (8,000 kg)			■	1.5 lbs. (0.7 kg)
HF 05/7	24,000 lbs. (12,000 kg)			■	1.5 lbs. (0.7 kg)

dynasafe® HF 35

electronic load limiter

The dynasafe® HF 35 is a electronic load cell that is designed for measuring the effort applied in lifting systems that have a dean end wire rope. This load cell is recommend for it's simplicity and quick fitting capability.

TECHNICAL SPECIFICATIONS

- Accuracy: ±3% of nominal charge
- Maximum load capacities from 40 to 40,000 lbs. (20 to 20,000 kg)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Mounts directly on the dead end of the wire rope
- Fast installation
- Monitor required (HF 80)

CABLE Ø	CAPACITY	OUTPUT SIGNAL			
		MV/V	FREQUENCY	0–10 V	4–20 MA
3⁄16–1¾ in. (5–45 mm)	40–40,000 lbs. (20–20,000 kg)	■	■	■	■

dynasafe® HF 10

electronic load limiting cell

The dynasafe® HF 10 has been designed for measuring effort applied in lifting systems, which have a dead end wire rope. It is recommended for installations where a high degree of accuracy is required. Another advantage is it's small size there as very little headroom is lost. To be used in connection with HF 80 monitors or HF 87 displays.

Size the HF 10 by simply matching the capacity. To do so, choose a model with a capacity higher than the crane capacity divided by the number of falls.

TECHNICAL SPECIFICATIONS

- Accuracy: ±0.3% of nomimal charge
- Maximum load capacities from 40 to 40,000 lbs. (20 to 20,000 kg)
- Operating temperature from -22 to 176°F (-30 to 80°C)
- Protection: IP 65 (NEMA 4)
- Mounts directly to the wedge socket at the dead end
- Easy wire rope replacement (no recalibration necessary)
- Suitable for weight display
- Monitor required (HF 80) and/or display AL63

CABLE Ø	CAPACITY	OUTPUT SIGNAL			
		MV/V	FREQUENCY	0–10 V	4–20 MA
–	40–40,000 lbs. (20–20,000 kg)	■	■	■	■

NOTE: Scale accuracy is dependent upon the number of falls present.

dynasafe® HF 50

dynometric axle

Load pin based on the strain gauges technology and used in particular to limit and display loads. To be used in connection with HF 80 monitors or HF 87 displays. The load pin will be designed according to the customer's specifications.

Since the HF 50 axles are made on a custom basis, each one is quoted individually from the factory.

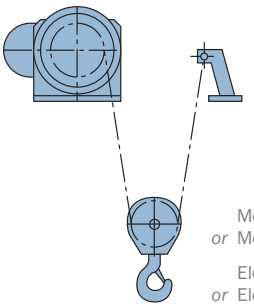
TECHNICAL SPECIFICATIONS

- Accuracy: ±0.5%
- Operating temperature from -4 to 176°F (-20 to 80°C)
- Protection: IP 65 (NEMA 4)
- Custom-made to replace the pin of either the upper block (most accurate) or idle sheave (least expensive)
- Ideal for accurate weight display
- No headroom loss
- The only solution available when there is no dead end
- Monitor required (HF 80) and/or display AL63

CABLE Ø	CAPACITY	OUTPUT SIGNAL			
		MV/V	FREQUENCY	0–10 V	4–20 MA
¾–11 13/16 in. (19–300 mm)	Custom made by project	■	■	■	■

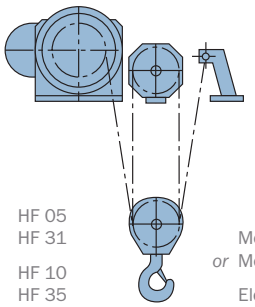
dynasafe® solutions

load cells for typical sheaving systems of overhead cranes



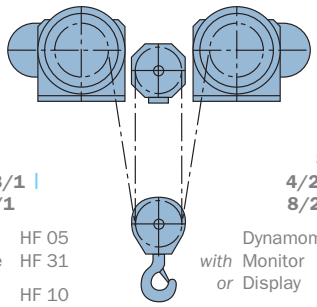
Sheaving 2/1

	Mechanical, in-line	HF 05
or	Mechanical, on-line	HF 31
	Electronic, in-line	HF 10
or	Electronic, on-line	HF 35
with	Monitor	HF 80
or	Display	AL63



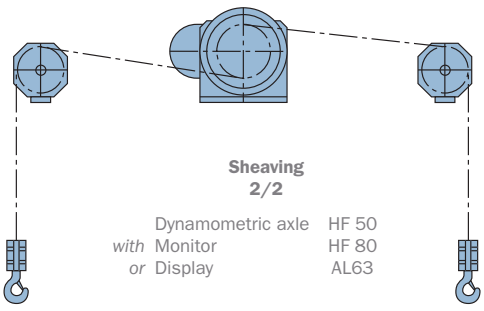
Sheaving 4/1 | 6/1 | 8/1 | 10/1 | 12/1

	Mechanical, in-line	HF 05
or	Mechanical, on-line	HF 31
	Electronic, in-line	HF 10
or	Electronic, on-line	HF 35
or	Dynamometric axle	HF 50
with	Monitor	HF 80
or	Display	AL63



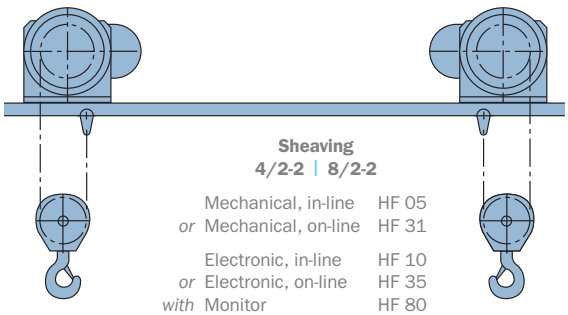
Sheaving 4/2-2 | 6/2-2 | 8/2-2 | 10/2-2

	Dynamometric axle	HF 50
with	Monitor	HF 80
or	Display	AL63



Sheaving 2/2

	Dynamometric axle	HF 50
with	Monitor	HF 80
or	Display	AL63



Sheaving 4/2-2 | 8/2-2

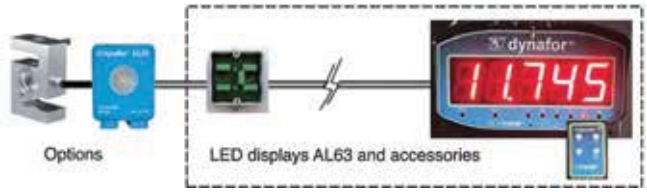
	Mechanical, in-line	HF 05
or	Mechanical, on-line	HF 31
	Electronic, in-line	HF 10
or	Electronic, on-line	HF 35
with	Monitor	HF 80
or	Display	AL63

dynafor® and dynasafe®

monitors, displays and connectors

DYNASAFE® AL63 KIT DISPLAY

- From 1 to 4 sensors with automatic sum function.
  - Tare, peak hold, unit selection with TLC remote control
  - Adjustable dynamic effects filter
  - Network communication through BUS RS 485 cable
- Kit includes:
  - dynasafe® AL63 display
  - TLC 2.4 GHz remote control
  - Connection box
  - Four silent blocks
  - Two extra strain reliefs
- Available accessories:
  - dynafor® LLXt RS 485 signal conditionner
  - dynafor® connection box
  - dynafor® BUS RS 485 cable
  - Power supply 12 Vcc for dynasafe® AL63
  - Power supply 5 Vcc for dynafor® LLXt RS
  - dynafor® adjustment software
  - TLC 2.4 GHz remote control



DYNAFOR® LLXt SIGNAL CONDITIONER

Converts existing cell to a RS 485 output cell.

- Available accessories:
  - dynafor® LLXt wireless module
  - dynafor® LLXt RS 485 module
  - Adjustment sofware

DYNASAFE® HF 80 MONITOR

Used for frequency output cells

HF 80/1

- Standard monitor with adjustable trip point
- Three levels of adjustable thresholds
- Two relays outputs: 220 V AC 10 A
- Dynamic effect filtering

DYNASAFE® HF 84 FREQUENCY CONVERTER

HF 84/1

- Converts existing cell to a frequency output cell
- Adjustable gain and zero
- For 1 load cell

MECHANICAL LOAD LIMITING ACCESSORIES

HF 90/1

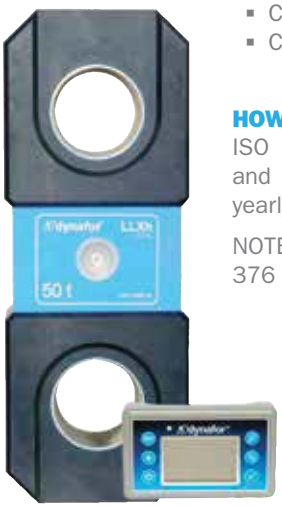
- Electronic alarm

HF 90/2

- Flashing light

tractel® services

Tractel® at your service, we offer dynafor® calibration services and have a full service department for repairs and maintenance of all the equipment we sell.



LOAD CELL CALIBRATION Z REPAIRS!

At Tractel® our dynafor® lab will calibrate your full range of product.

- Quick turn around
- Calibration certificate provided
- Capacity up to 250 t

HOW IMPORTANT IS CALIBRATION?

ISO certified companies need to calibrate tools and instrument yearly. Tractel® recommends this yearly calibration to avoid lapse in use.

NOTE: Our testing equipment is traceable to ISO 376 Standards.

SERVICE AND REPAIRS

Factory trained technicians for all your service and epair requirements, keeps your equipment running right, resulting in many benefits:

- **Lengthens equipment life** – properly maintained equipment simply lasts longer.
- **Enhanced operator efficiency** – ensures that the equipment operates at peak performance levels.
- **Prevents costly downtime** – anticipating and preventing future problems before they occur helps avoid downtime.
- **Check for proper operation** – Ensure machine and its components are operating correctly.

PARTS

- Large inventory of parts for quick delivery.
- Reliable factory authorized replacement parts to maintain your equipment to factory standards.