Electrical Tensioners
Mechanical Tensioners
Electronic Tensioners

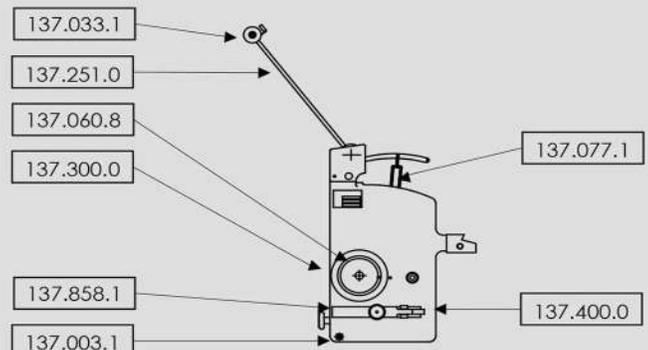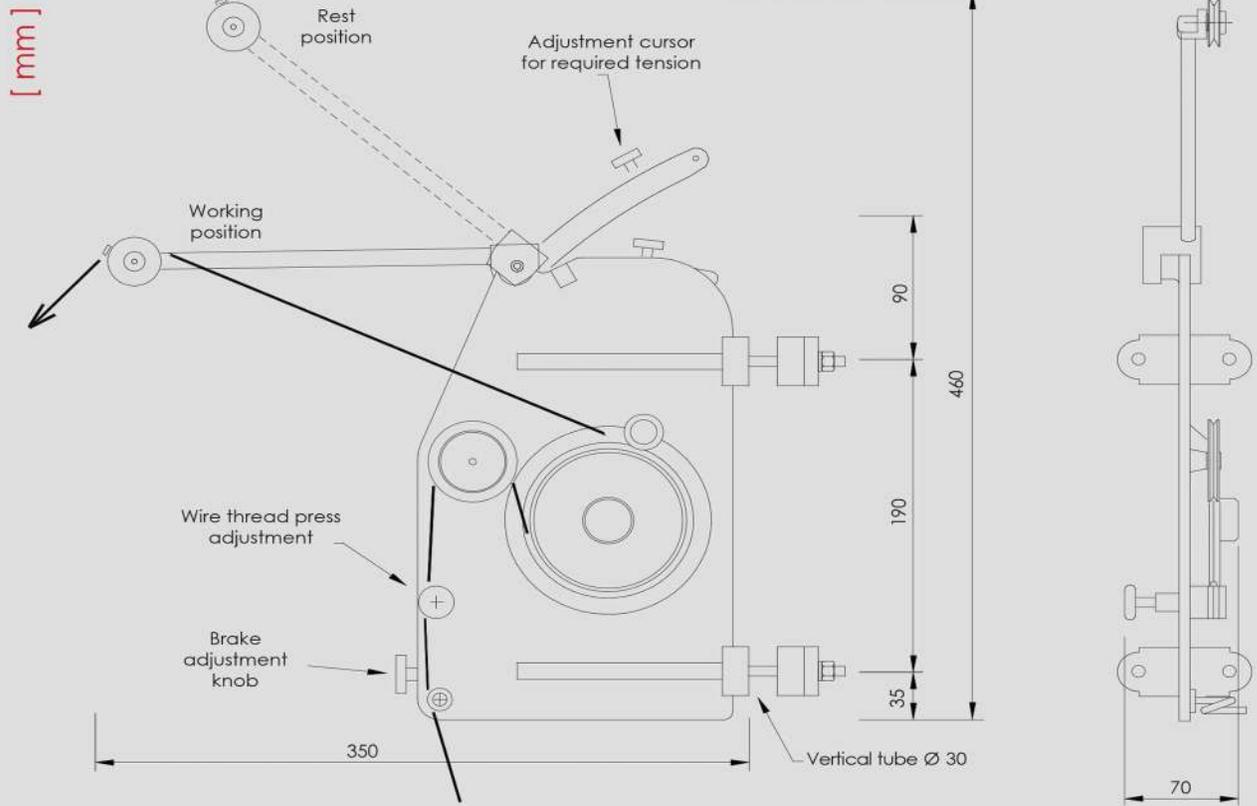- **Compact & innovative design**

- **EMP brake inside**
  - ▶ **high performances**
  - ▶ **suitable for severe working conditions**
  - ▶ **long lifetime**

- **Options remote control**
  - ▶ **external 0-to-10 V**
  - ▶ **ext. tension release**

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Electrical Tensioner

EL4000

Working range

```
0.15                          4.0
▼                             ▼
      Wire tension range           daN (~kg)
  *                        **
      Recommended wire diameter range   Ø / AWG
▲                             ▲
0.14 / 35                     1.00 / 18
```

* *Exact wire tension not guaranted at full speed (unwanted residual forces might apply along the wire path)*

** *Reduced speed range (max dissipated power zone)*

Description

Digital display
(Set point)

70

240

200

SET POINT

adjustment
potentiometer
or
External
remote control
(0 to 10 V DC)

Fixation tube
vertical or horizontal
diam. 20 to 30 mm

Features

▶ Oversized EMP brake ensuring both the highest performance and a very long lifetime.

▶ Adjustable spring giving a direct feedback of actual wire tension through the dynamometric arm position (aligned to the tensioner's frame).

Principle

The wire tension is directly given by the EMP brake's torque, which is controlled in open loop by a potentiometer or an external 0 to 10 V input voltage.

During the rest periods of the working cycles, a residual tension is applied to the wire by the dynamometric arm.

from the spool   wire   to the coil

PRINCIPLE

set point

EMP
Brake

Front face
potentiometer

0 to 10 V DC
Input

Tension release
(contact or 24 V)

Power supply : 24 v DC
Max current consumption : 0.8 Amp

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Electrical Tensioner

GR64E4

- **Reinforced design**
- **EMP brake inside**
  - ► high performances
  - ► long lifetime
- **Options remote control**
  - ► external 0-to-10 V
  - ► ext. tension release

Working range

0.15		4.0	
	Wire tension range		daN (~kg)
*		**	
	Recommended wire diameter range		Ø / AWG
0.14 / 35		**1.00** / 18	

* *Exact wire tension not guaranted at full speed (unwanted residual forces might apply along the wire path)*

** *Reduced speed range (max dissipated power zone)*

Description

Digital display

Set point : adjustment potentiometer

160

190

90

400

Features

► Oversized EMP brake ensuring both the highest performance and a very long lifetime.

► Adjustable spring giving a direct feedback of actual wire tension through the dynamometric arm position.

Principle

The wire tension is directly given by the EMP brake's torque, which is controlled by a potentiometer or a 0 to 10 V input voltage.
During the rest periods of the working cycles, a residual tension is applied to the wire by the dynamometric arm.

from the spool — wire — to the coil

set point

EMP Brake

Front face potentiometer

0 to 10 V DC Input

Tension release (contact or 24 V)

Power supply : 24 v DC
Max current consumption : 0.8 Amp

- **Reinforced design**
- **EMP brake inside**
  - ▶ **high performance**
  - ▶ **long lifetime**
- **Optional remote control**
  - ▶ **external 0-to-10 V**
  - ▶ **ext. tension release**

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Electrical Tensioner

GR64E10

Working range

0.30		10.0	
	Wire tension range		daN (~kg)

*		**

	Recommended wire diameter range		Ø / AWG
0.20 / 35		**1.60** / 19	

* *Exact wire tension not guaranted at full speed (unwanted residual forces might apply along the wire path)*

** *Reduced speed range (max dissipated power zone)*

Features

▶ Oversized EMP brake ensuring both the highest performance and a very long lifetime.

▶ Adjustable spring giving a direct feedback of actual wire tension through the dynamometric arm position.

Principle

The wire tension is directly given by the EMP brake's torque, which is controlled by a potentiometer or a 0 to 10 V input voltage.
During the rest periods of the working cycles, a residual tension is applied to the wire by the dynamometric arm.

Description

Digital display

Set point : adjustment potentiometer

160

190

90

400

from the spool   wire   to the coil

set point

EMP Brake

Front face potentiometer

0 to 10 V DC Input

Tension release (contact or 24 V)

Power supply : 24 v DC
Max current consumption : 0.8 Amp

Rest position

Working position

Adjustment cursor for required tension

~ 90°

~ 110°

275

Ø 14

31

80

20

Adjustment knob

102

220

Wire thread press

Wire / Tension

Ø mm	AWG	cN (g)
0.090	39	70
0.070	41	45
0.050	44	24
0.030	48	10
0.010	58	1.5

working range

Linear Speed [m/s]

0   5   10

available options

Standard	Cut-out switch	Pneumatic Release	ALTIC Reference
■			137.000.1
	■		137.000.2
		■	137.000.8

spare parts

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Spare parts	Reference
Pigtail Eyelets (10 pcs)	137.003.1
Complete Brake Pulley	137.060.8
Wire Thread Press	137.400.0
Thread Press Felts (10 pcs)	137.858.1
Dynamo. Arm pulley with bearing	137.033.1
Dynamometric Springs (10 pcs)	137.077.1
Complete Dynamometric Arm	137.251.0
Complete Brake Block	137.300.0
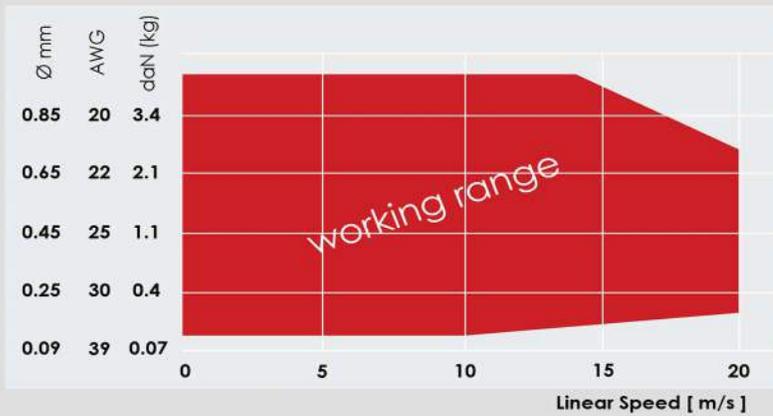
137.033.1

137.251.0

137.060.8

137.300.0

137.077.1

137.858.1

137.003.1

137.400.0

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dimensions [mm]

Rest position

Adjustment cursor for required tension

Working position

Wire thread press adjustment

Brake adjustment knob

350

90

460

190

35

Vertical tube Ø 30

70

Wire / Tension

Ø mm	AWG	daN (kg)
0.85	20	3.4
0.65	22	2.1
0.45	25	1.1
0.25	30	0.4
0.09	39	0.07

working range

Linear Speed [m/s]

0   5   10   15   20

available options

STandard	Cut-out switch	Double pulley	Pneumatic release	ALTIC Reference
■				131.000.1
	■			131.000.2
		■		131.000.3
	■	■		131.000.4
			■	131.000.7
■			■	131.000.8

spare parts

Spare parts	Reference
Pigtail eyelet (10 pcs)	131.003.1
Complete brake pulley	131.060.2
Wire thread press	131.400.0
Thread press felts (100 pcs)	131.089.1
Arm pulley with bearings	131.027.7
Arm pulley with bushing	131.027.3
Return pulley with bushing	131.006.1
Dynamometric spring (10 pcs)	131.075.1
Complete dynam. Arm	131.251.0
Complete brake block	131.300.0
Fixing clamp	135.002.4
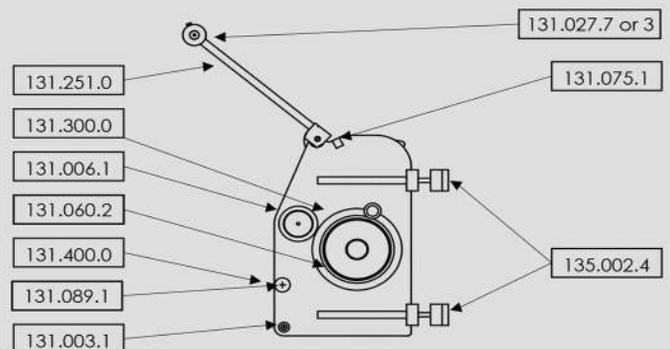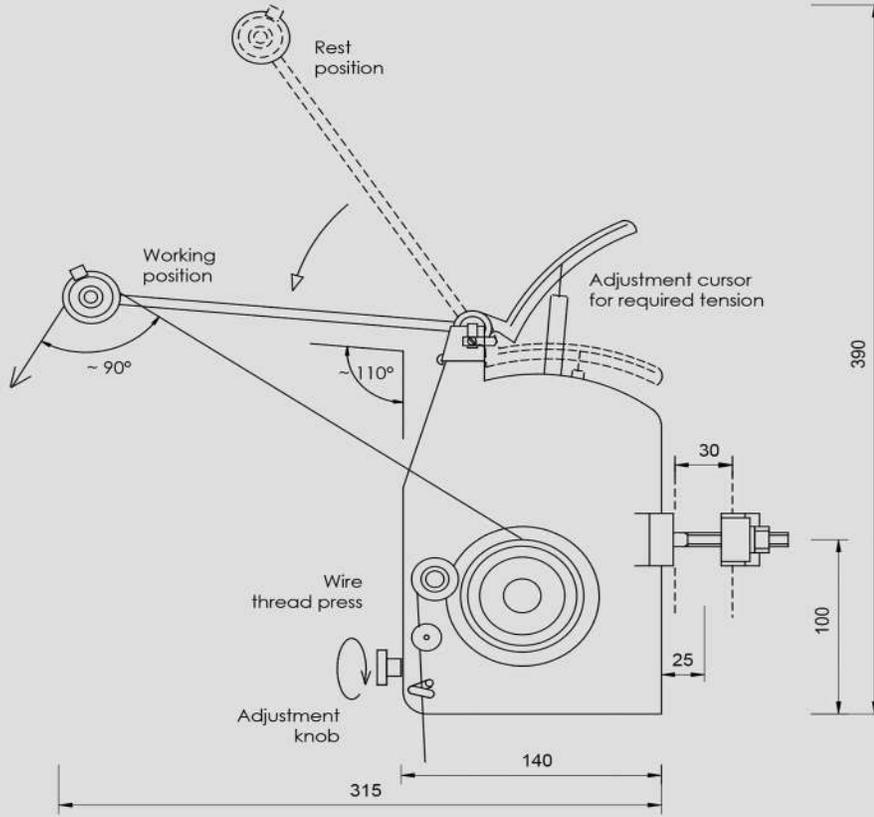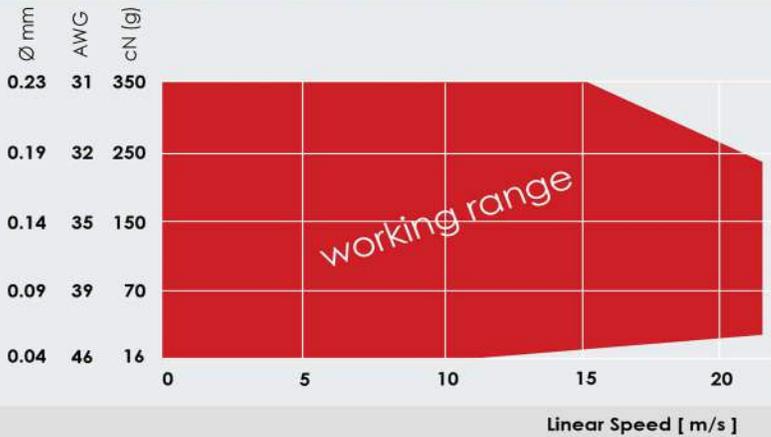
131.027.7 or 3

131.075.1

131.251.0

131.300.0

131.006.1

131.060.2

131.400.0

131.089.1

131.003.1

135.002.4

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dimensions [mm]

Rest position

Working position

Adjustment cursor for required tension

~ 90°

~110°

390

30

100

25

Wire thread press

Adjustment knob

140

315

Wire / Tension

Ø mm	AWG	cN (g)
0.23	31	350
0.19	32	250
0.14	35	150
0.09	39	70
0.04	46	16

working range

Linear Speed [m/s]

0   5   10   15   20

available options

Standard	Cut-out switch	Double pulley	Pneumatic release	ALTIC Reference
■				135.000.1
	■			135.000.2
		■		135.000.3
	■	■		135.000.4
			■	135.000.8

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Spare parts

Spare parts	Reference
Pigtail Eyelets (10 pcs)	135.003.1
Complete Brake Pulley	135.060.2
Wire Thread Press	135.400.0
Thread Press Felts (100 pcs)	135.089.1
Arm Pulley + Bearing	135.027.1
Return Pulley + Bearing	135.006.1
Dynamometric Springs (10 pcs)	135.077.1
Complete Dynamometric Arm	135.251.0
Complete Brake Block	135.300.0
Fixing Clamp	135.002.4

135.027.1
135.251.0
135.060.2
135.006.1
135.300.0
135.400.0
135.089.1
135.003.1
135.077.1
135.002.4

Rest
Position

Working
Position

Adjustment cursor
for required tension

~ 90°

110°

vertical Tube
D14 mm

275

Ø 14

Wire thread
press adjustment

80

31

Brake
adjustment
knob

20

102

220

Wire / Tension

Ø mm	AWG	cN (g)
0.026	50	8.0
0.020	52	5.0
0.015	54	3.0
0.010	58	1.5
0.008	60	1.0

working range

0   1   2   3   4   5   6   7

Linear Speed [m/s]
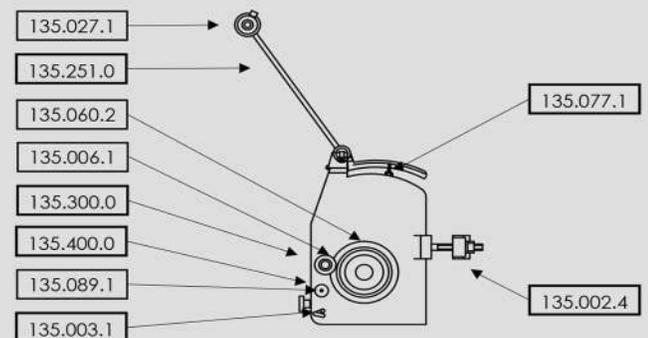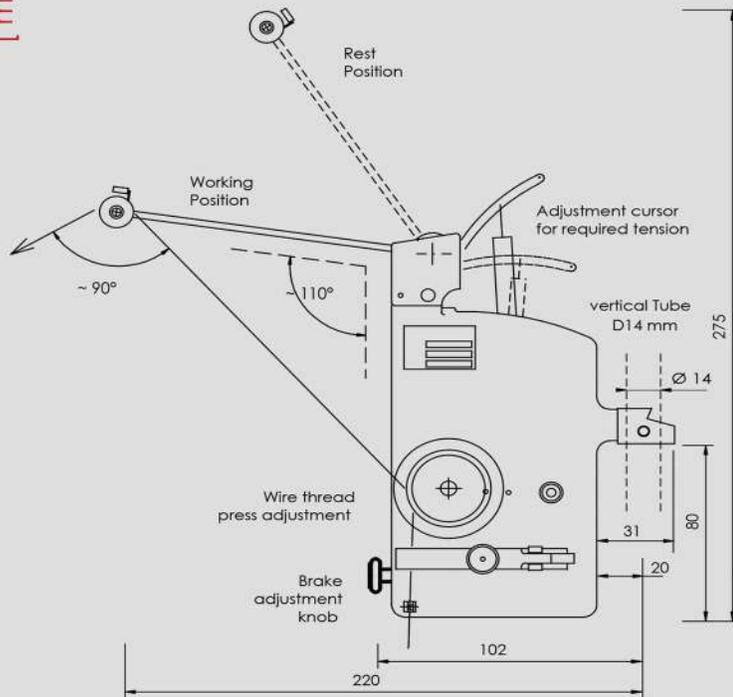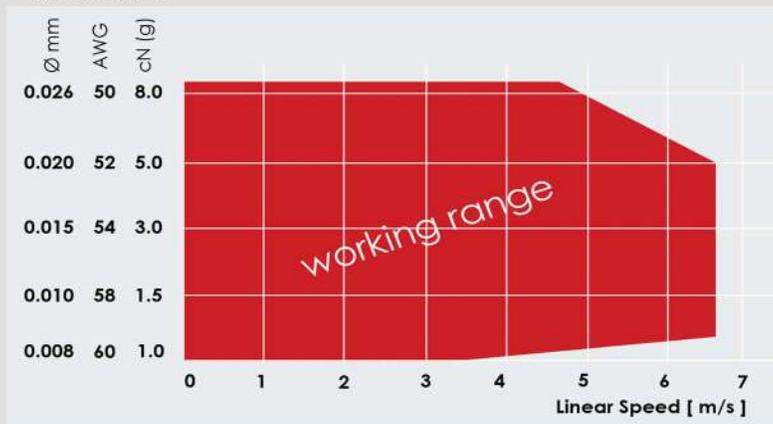
available version

ALTIC Reference	
Standard	138.000.1

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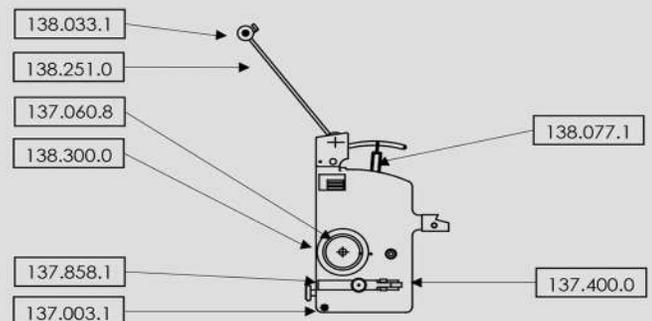
138.033.1

138.251.0

137.060.8

138.300.0

138.077.1

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137.400.0

ETC SERIES

When Wire Tension accuracy and higher level of Quality control are the requisites of the coil winding production process, ALTIC's Electronic Tensioners are the ultimate solution.

Based on an up-to-date **closed loop force control system**, an exclusive **electro-mechanical Brake technology**, and including **high accuracy load cells**, Altic's electronic tensioners provide **high precision tension control** at an **affordable price**.

Offers

► Low profile frame (width < 46 mm)
► Digital display readout
► Operator interface through the front face keyboard or an external remote control
► Highly reliable braking technology
► Wire compensation up to 150 mm
► Easy setting-up
► Low consumption (< 1 Amp - 24 V DC)
► Broken wire signal ouptut available
► External 0 → 10 V remote control option

### ALTIC Wire Tensioners improve your competitiveness.

- Closed loop control electro-mechanical brake
- Real time force tension feedback from a precision load cell
- Embedded microcontroller including an advanced PID regulator and providing additional automation functions and input-output data exchange (option)

working range

- Wire Tension Range
  5 → 120 cN   **~ 5 → 120 gr**
- Wire diameter
  0.03 → 0.12   **AWG 48 → 36**
- Max. Linear speed
  25 m/sec

description

ETC SERIES

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technical data

Offers

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ALTIC Wire Tensioners improve your competitiveness.

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features

- Closed loop control electro-mechanical brake
- Real time force tension feedback from a precision load cell
- Embedded microcontroller including an advanced PID regulator and providing additional automation functions and input-output data exchange (option)

working range

- Wire Tension Range
  80 → 250 cN   ~ 80 → 250 gr
- Wire diameter
  0.10 → 0.20   AWG 38 → 32
- Max. Linear speed
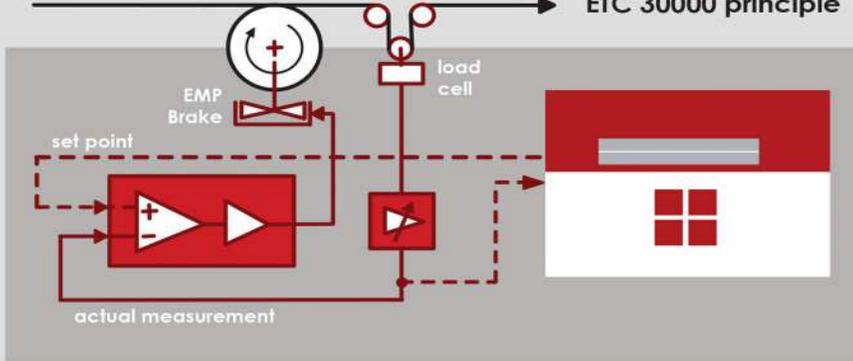 25 m/sec

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ITASCA AUTOMATION SYSTEMS, LLC

Based on an up-to-date **closed loop force control system**, highly reliable **EMP Brakes**, and high accuracy **load cells**, ALTIC's Electronic Tensioners are the ultimate wire tension control solution !

technical data
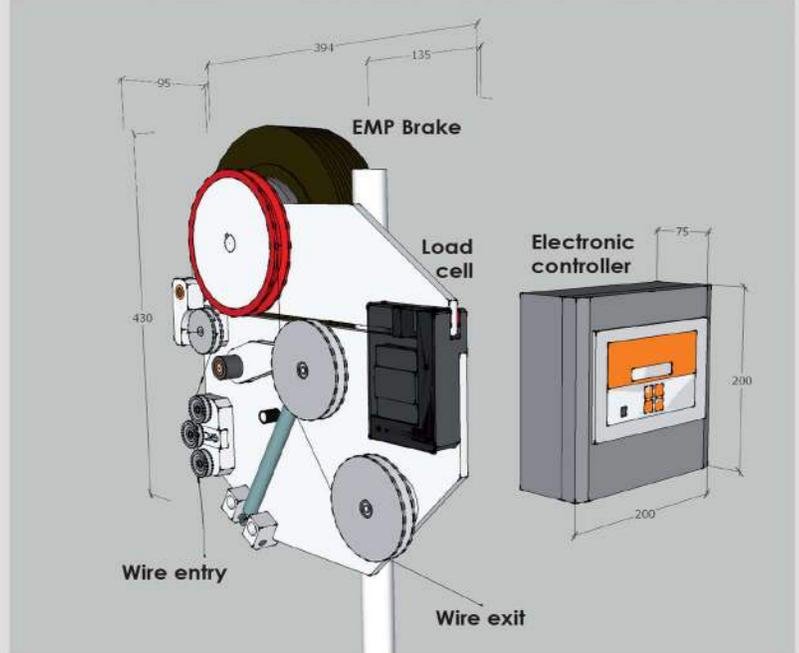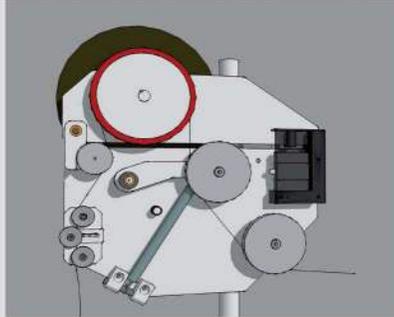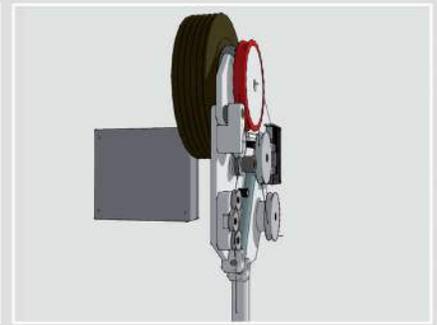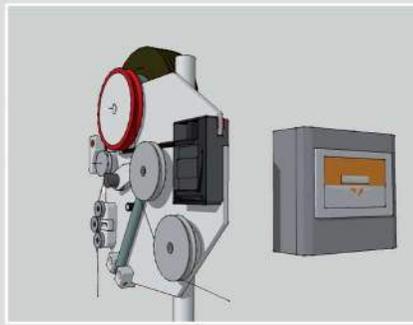
Direct tension closed loop control:

The torque in the EMP brake is monitored by the internal digital controller, by using the real time difference between the set point value (coil winding tension) and the actual tension on the wire.
The wire tension is fully available as an analogue output voltage.

EMP Brake

Load cell

Electronic controller

Wire entry

Wire exit

ETC 30000 principle

EMP Brake

load cell

set point

actual measurement

Power supply : 24 v DC
Max current consumption : 1.8 Amp

features

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Wire / Tension

Ø mm	AWG	daN (kg)
3.00	9	30.0
2.00	12	15.0
1.50	14	9.0
1.00	18	4.5
0.40	26	1.0

working range

Linear Speed [m/s]

Working range
• wire tension range from 1 to 30 kg,
• copper wire diameter from 0.4 to 3.0 mm

Features
• easy-to-read digital display showing both the wire tension set point and the actual measured tension.
• two keys can be programmed to memorize two different wire sizes
• adjustable dynamic (operating) tension, static (back) tension, size of wire, and speed threshold.