

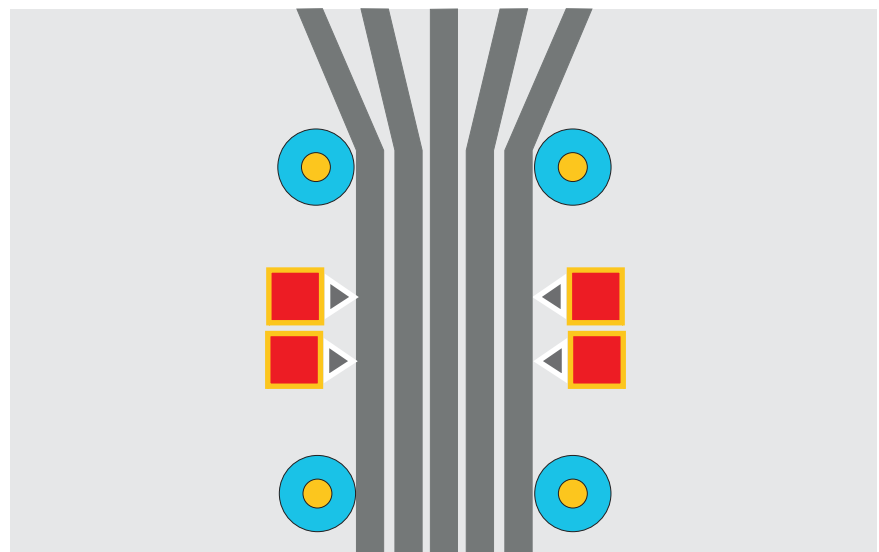
The GHH36 electrostatic ribbon tacking system is intended for use in folders and is designed to interlock the incoming paper webs using static electricity such that dog ears and creases are avoided.

The charging electrodes are mounted after the multi-layer rollers and ahead of the of the cross cutter. The paper webs run between the electrodes and are charged up in the process. The GHH36 ribbon tacking system is made in several different designs and can be installed in all commercial folders.

Benefits:

- copy collating without turned corners (with optimum mechanical setting of the collector cylinder)
- less cutting differences
- higher machine speeds
- ultimate bundle formation
- cost savings through better machine efficiency
- good converting of the finished products

Technical Information



GHH36 Ribbon Tacking

TI-en-9013-1504



System Description

GHH36 Ribbon Tacking by Eltex

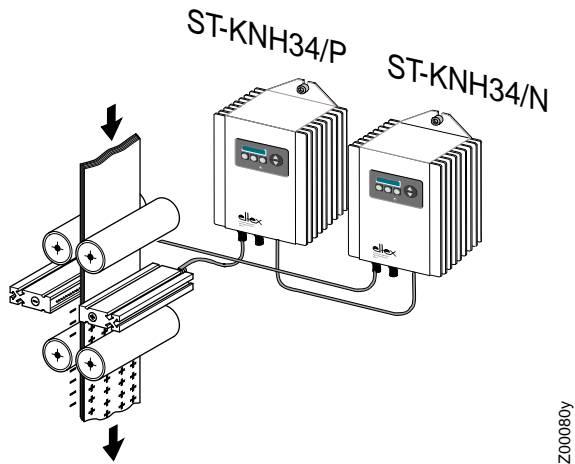
For trouble-free ribbon flow through the folders in publication and heat-set offset printing.

The Eltex GHH36 Ribbon Tacking system is engineered to electrostatically "tack" the ribbons together. Located in the upper folder section, the system charges the ribbons, so that they attract one another and remain in position as they enter and easily pass through the lower folder. Since the tacked ribbons flow much more smoothly through processing, production speeds go up, quality improves and waste is reduced.

The system is designed for ribbon applications on heat-set offset and gravure presses and works equally well on newsprint provided that the paper moisture content is not above 4,5%.

Function

Two high voltage generators generate positive and negative high voltages which are passed on to the charging electrodes mounted in the folder. The positive and negative electrodes are arranged in opposition to each other. The paper webs pass between the electrodes.



Principle of electrostatic ribbon tacking system

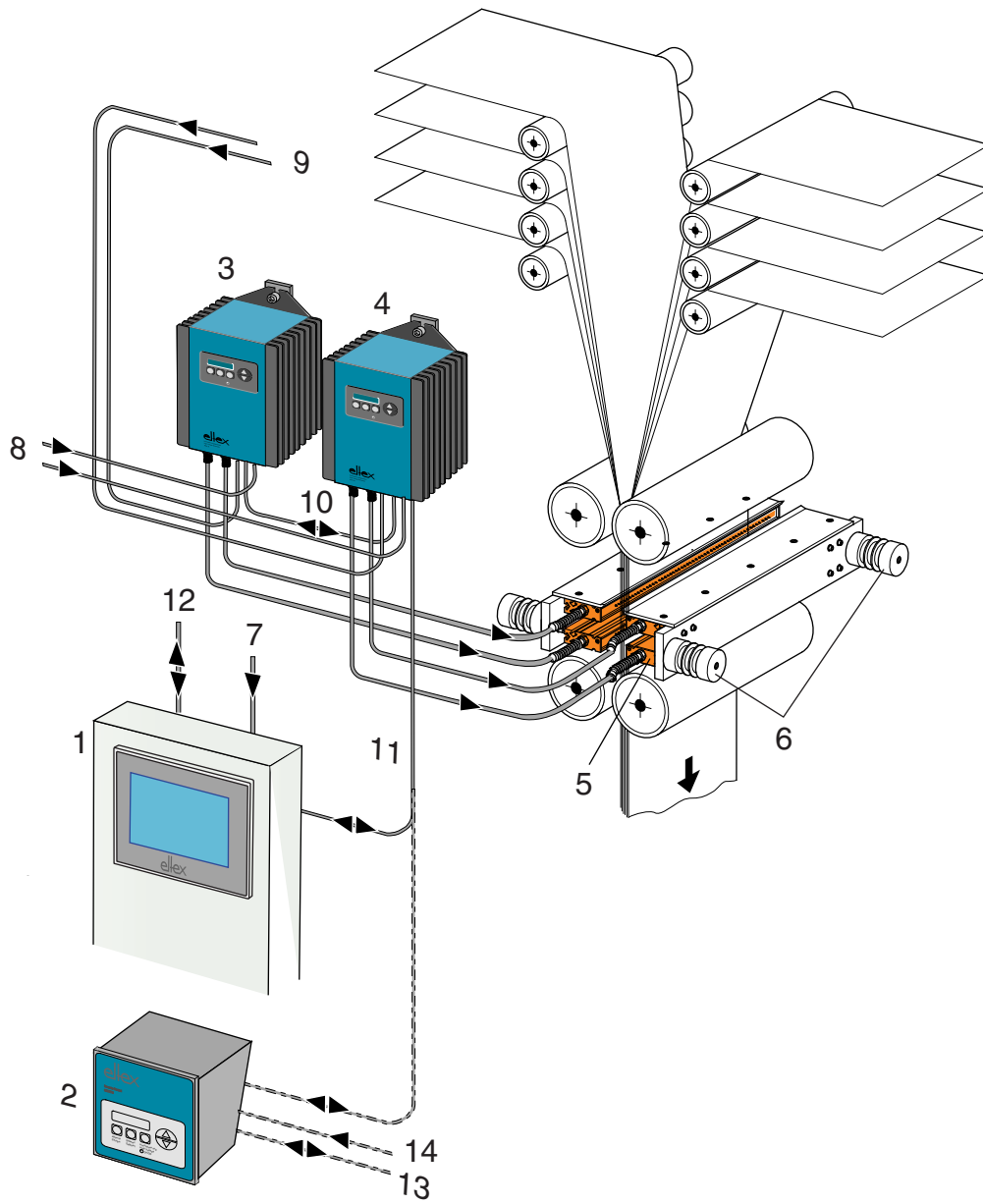
The electric charge applied by the system displaces the air between the ribbons, and results in a temporary, but highly intense bonding force between them.

Reduced emission tip spacing of the new electrode bars generates maximum tacking power with minimum voltage levels.

A single standard design is sufficient for any web width - the output power of the bars automatically adapts to the width of the ribbon.

The adhesive effect is sustained until the charge applied has leaked off again. For ribbon tacking to be effective, the paper used must keep its charge until after the collector cylinder.

System Outline



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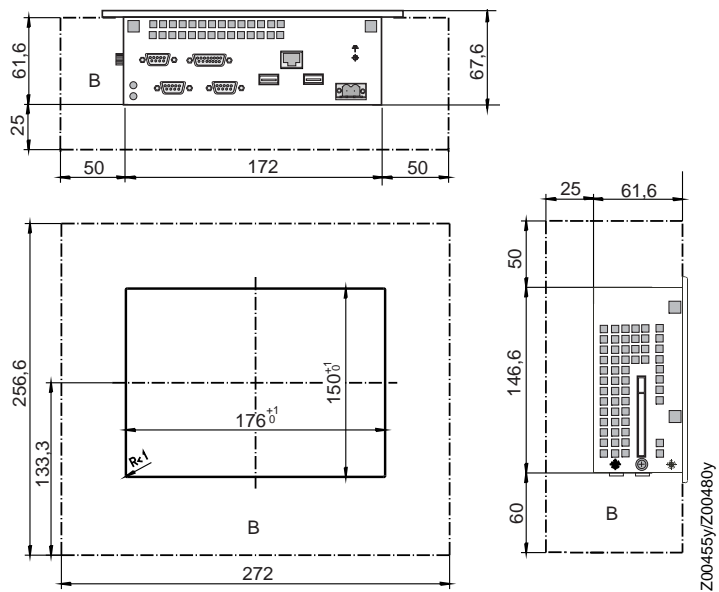
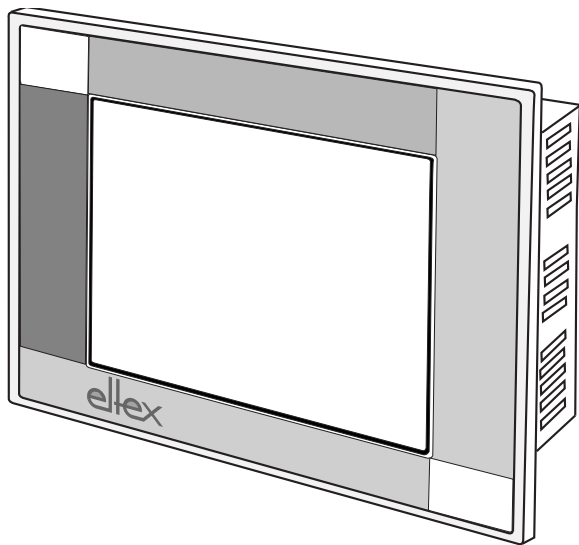
- 1 Remote control Static Control ESC2 or remote control ST-KNHFB
The entire system is operated and controlled via the optional remote control (ESC2 via touch-screen).

ESC2 options:

ESC2MODEM: modem for remote maintenance, telephone and mains connection required.
The remote control ESC2 allows to operate an Eltex Ribbon Tacking system together with an Eltex Electrostatic Printing Assist or an Eltex Remoistening unit via one remote control.

- 2 Remote control ST-KNHFB
As an alternative to the Static control ESC2 remote control, the whole system can be operated via the optional ST-KNHFB remote control.
- 3 High voltage generator ST-KNH34/P
Supplies the positive high voltage to the charging bar and monitors the releases.
- 4 High voltage generator ST-KNH34/N
Supplies the negative high voltage to the charging bar and monitors the releases.
- 5 Charging bar STR130A3
Transfers the positive or negative high voltage onto the incoming paper webs.
- 6 Brackets and insulators for the charging bars
- 7 Mains power cable KN/BD or KN/DD to the remote control
- 8 Mains cable KN/AD to the high voltage generator
- 9 Release cable KS/B from the machine room to the high voltage generator
The high voltage is released/enabled via a protective circuit.
- 10 CAN bus cable KS/A from generator to generator
- 11 CAN bus cable KS/A from the remote control to the 1st generator
- 12 Network integration
- 13 Interface for the output of fault signals (fault alarm contact)
- 14 Mains lead ST-KNHFB remote control

Remote Control ESC2/EEE built-in version small



Aspect of the Static Control ESC2/EEE / Cut-out section and dimensions of the installation
 B Area for connections and compact flash

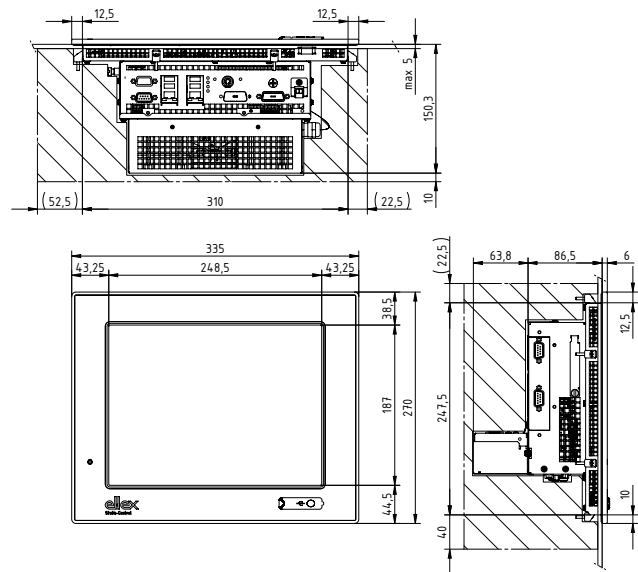
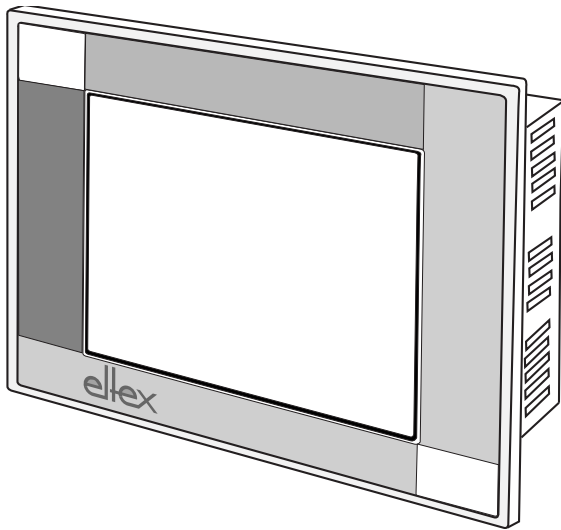
The system is controlled via the remote control unit. The system is operated directly on the monitor via touch screen where the necessary settings can be selected. The display shows the operator the status, the proper function and any error states of the system. By touching the appropriate symbol on the screen the system or individual components can be activated or deactivated or specific information can be retrieved.

Technical Specifications ESC2/EEE

Supply voltage	24 V DC power supply unit 115/230 VAC, 50/60 Hz included
Power input	max. 20 W at 24 V DC max. 120 VA at 115/230 V AC.
Ambient operating temperature	installation angle 90° (vertical) to 45°: 0...+45°C (+32...+113°F) installation angle 44° to 20°: 0...+40°C (+32...+104°F) installation angle 19° to 0° (horizontal): 0...+35°C (+32...+95°F)
Storage temperature	-20...+60°C (-4...+140°F)
Ambient humidity	80% rh max., no dewing
Housing	zinc-plated sheet steel plating
Protection class	front IP65, computer unit IP20
Dimensions	assembly recess opening: 175 x 169 mm (W x H) housing: 172 x 146.6 x 61.6 mm (W x H x D) front panel: 201.2 x 168 x 6 mm (W x H x D)
Weight	approx. 1.6 kg
Operation	TFT touch screen resistive; screen diagonal 6.5"



Remote Control ESC2/EFE built-in version large



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Aspect of the Static Control ESC2/EFE / Cut-out section and dimensions of the installation B Area for connections and compact flash

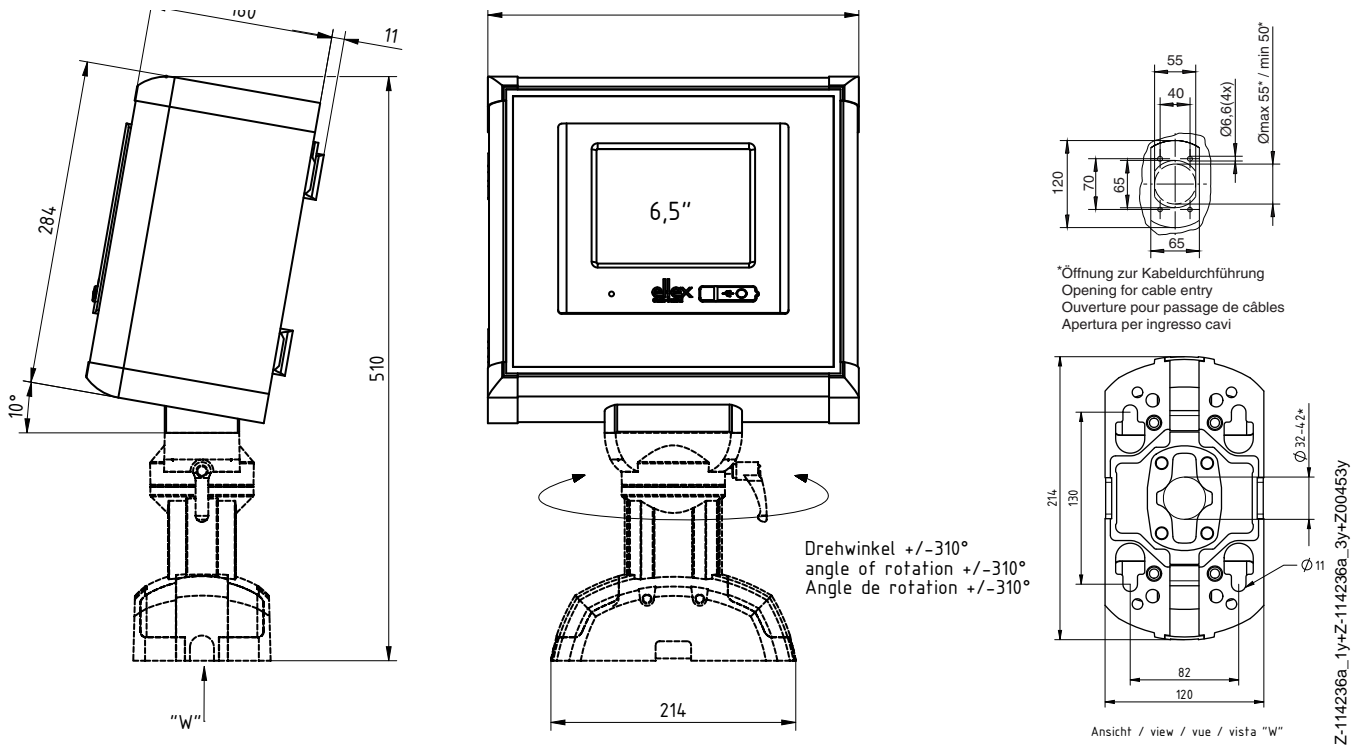
The system is controlled via the remote control unit. The system is operated directly on the monitor via touch screen where the necessary settings can be selected. The display shows the operator the status, the proper function and any error states of the system. By touching the appropriate symbol on the screen the system or individual components can be activated or deactivated or specific information can be retrieved.

Technical Specifications ESC2/EFE

Supply voltage	24 V DC power supply unit 115/230 VAC, 50/60 Hz included
Power input	max. 36 W at 24 V DC max. 120 VA at 115/230 V AC.
Ambient operating temperature	installation angle 90° (vertical) to 45°: 0...+45°C (+32...+113°F) installation angle 44° to 20°: 0...+40°C (+32...+104°F) installation angle 19° to 0° (horizontal): 0...+35°C (+32...+95°F)
Storage temperature	-20...+60°C (-4...+140°F)
Ambient humidity	75% rh max., no dewing
Housing	zinc-plated sheet steel plating
Protection class	front IP65, computer unit IP20
Dimensions	assembly recess opening: 315 x 250 mm (W x H) housing: 310 x 247.5 x 150.3 mm (W x H x D) front panel: 335 x 270 x 6 mm (W x H x D)
Weight	approx. 4.75 kg
Operation	TFT touch screen resistive; screen diagonal 12.1"



Remote Control ESC2/GEE and ESC2/NEE enclosure version small



Dimensions Static Control ESC2/GEE (pedestal shown in broken outline) and ESC2/NEE

The remote control ESC2/GEE has been designed for free-standing installation. The unit can be mounted as machine attachment component, against a wall or on the floor. The unit pivots around its vertical axis by 10° and is rotatable, allowing the best possible viewing angle to be selected.

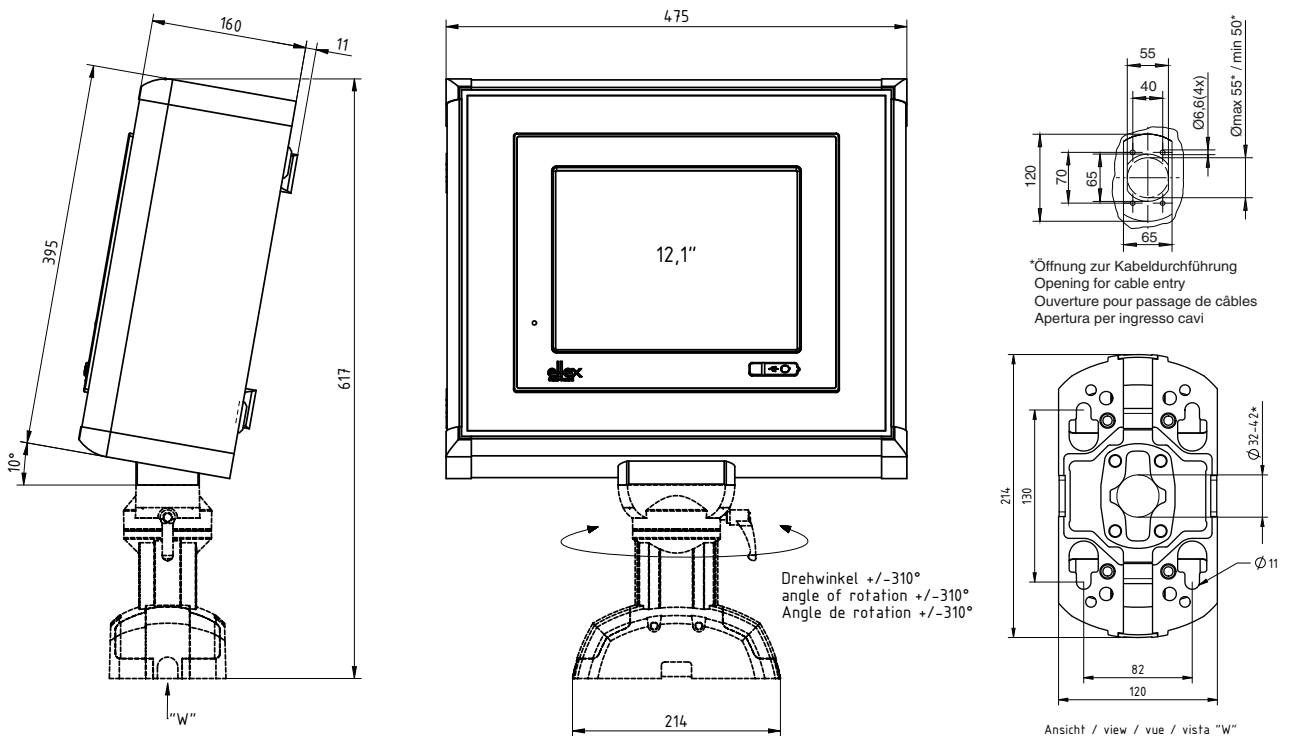
The remote control ESC2/NEE is a enclosure version without pedestal.

Technical specifications ESC2/GEE and ESC2/NEE

Supply voltage	24 V DC power supply unit 115/230 VAC, 50/60 Hz included
Power input	max. 20 W at 24 V DC max. 120 VA at 115/230 V AC
Ambient operating temperature	0...+35°C (+32...+95°F)
Storage temperature	-20...+60°C (-4...+140°F)
Ambient humidity	80% rh max., no dewing
Body	anodized aluminium
Protection class	IP64
Dimensions (w/o pedestal)	324 x 284 x 160 mm (W x H x D)
Weight	with pedestal approx. 12 kg; w/o pedestal approx. 9 kg
Operation	TFT touch screen resistive; screen diagonal 6.5"



Remote Control ESC2/GFE and ESC2/NFE enclosure version large



Dimensions Static Control ESC2/GFE (pedestal shown in broken outline) and ESC2/NFE

The remote control ESC2/GFE has been designed for free-standing installation. The unit can be mounted as machine attachment component, against a wall or on the floor. The unit pivots around its vertical axis by 10° and is rotatable, allowing the best possible viewing angle to be selected.

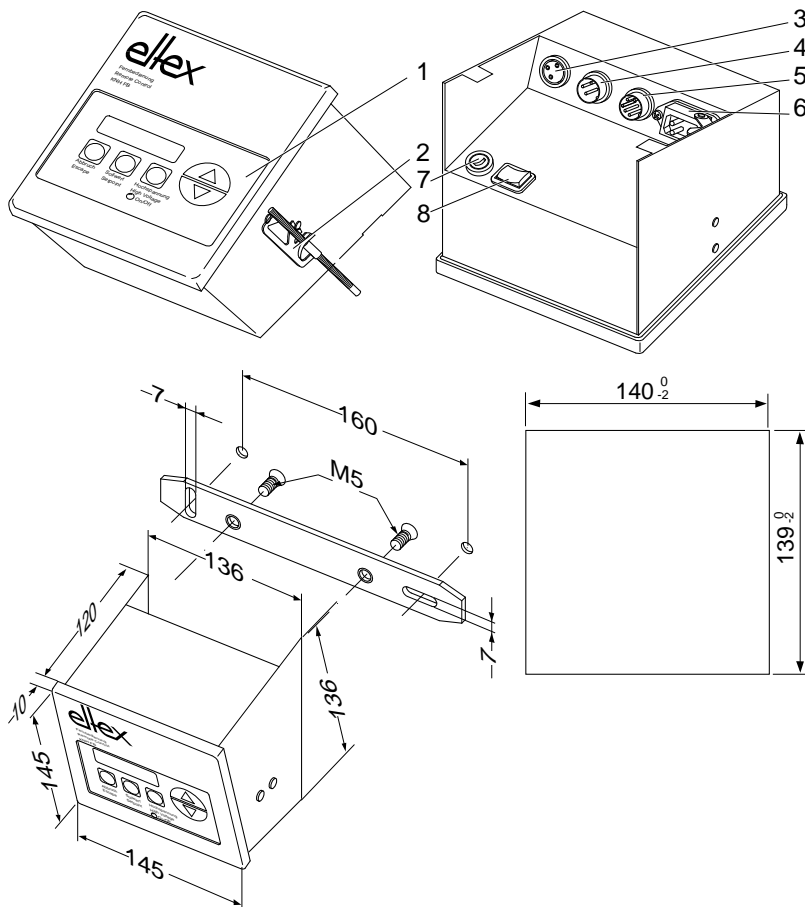
The remote control ESC2/NFE is a enclosure version without pedestal.

Technical specifications ESC2/GFE and ESC2/NFE

Supply voltage	24 V DC power supply unit 115/230 VAC, 50/60 Hz included
Power input	max. 36 W at 24 V DC max. 120 VA at 115/230 V AC
Ambient operating temperature	0...+35°C (+32...+95°F)
Storage temperature	-20...+60°C (-4...+140°F)
Ambient humidity	75% rh max., no dewing
Body	anodized aluminium
Protection class	IP64
Dimensions (w/o pedestal)	475 x 395 x 160 mm (W x H x D)
Weight	with pedestal approx. 15 kg; w/o pedestal approx. 12 kg
Operation	TFT touch screen resistive; screen diagonal 12.1"



Remote Control ST-KNHFB



- 1 Operator interface, two-line display, keypad
- 2 Attachment for installation in control panel
- 3 Socket CAN bus (female)
- 4 Socket CAN bus (male)
- 5 Socket RS232 interface, malfunction
- 6 Socket supply voltage
- 7 Fuse (0,04 A, slow blow)
- 8 Master switch ON/OFF

Assembly of the remote control ST-KNHFB via the assembly bracket; cut-out for the installation of the control panel

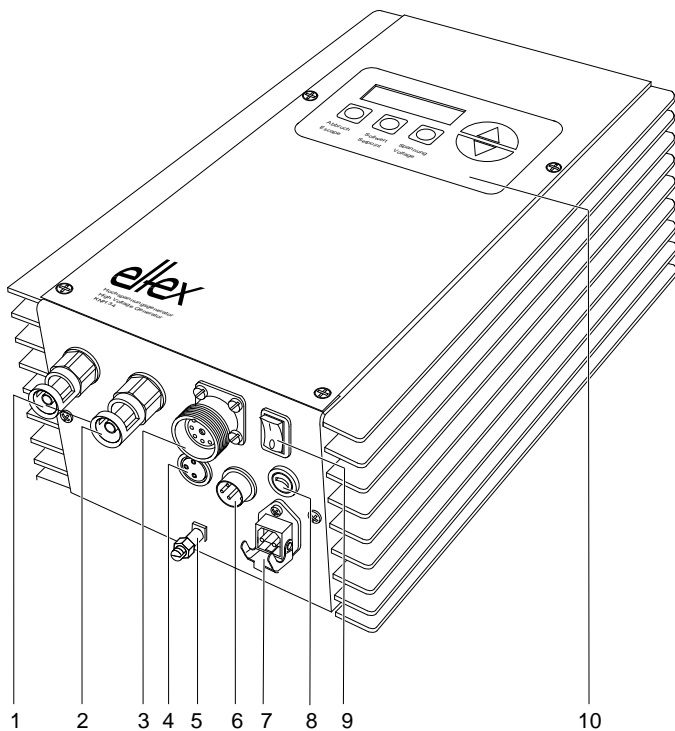
The remote control ST-KNHFB is available for remote operation and monitoring of the high voltage generators. The unit is designed for wall mounting, table mounting or installation in a control panel. The CAN bus concept allows up to 20 generators and remote controls to be interlinked in a network. Optional integration into control panels via the RS232 interface.

Technical specifications ST-KNHFB

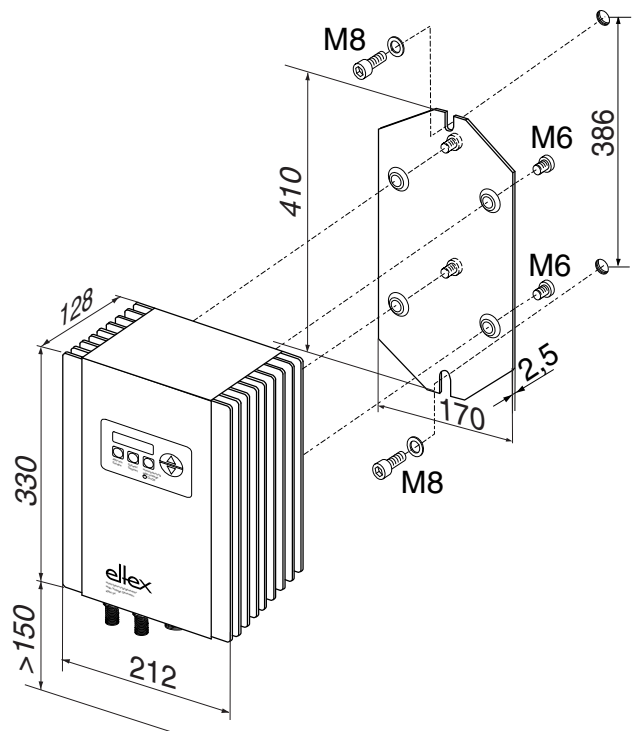
Supply voltage	230/115 V AC, ±10%, 50/60 Hz
Power input	max. 8 VA
Ambient operating temperature	+5...+40°C (+41...+104°F)
Storage temperature	-20...+70°C (-4...+158°F)
Ambient humidity	80% rh max., no dewing
Enclosure	Sheet metal steel, enameled
Protection class	IP54
Dimensions	Enclosure: 145 x 145 x 130 mm (H x W x D)
Weight	1.5 kg
Operation	two-line display, 5 operating keys



High Voltage Generator ST-KNH34



- 1 Terminal charging electrode
- 2 Terminal charging electrode
- 3 Socket analog interface
- 4 Socket CAN bus female
- 5 Ground terminal
- 6 Socket CAN bus male
- 7 Socket supply voltage
- 8 Fuse (see name plate)
- 9 Master switch ON/OFF
- 10 Operator interface



Installing the high voltage generator with assembly plate

Z00083y / Z00373y

The high voltage generator ST-KNH34 supplies the charging bars with the required high voltage. The high voltage generator can be programmed either via the remote control ESC2, the remote control ST-KNHFB or directly via the keyboard. Once programmed, a reprogramming will not be necessary.

Messages are shown on the display in plain text.

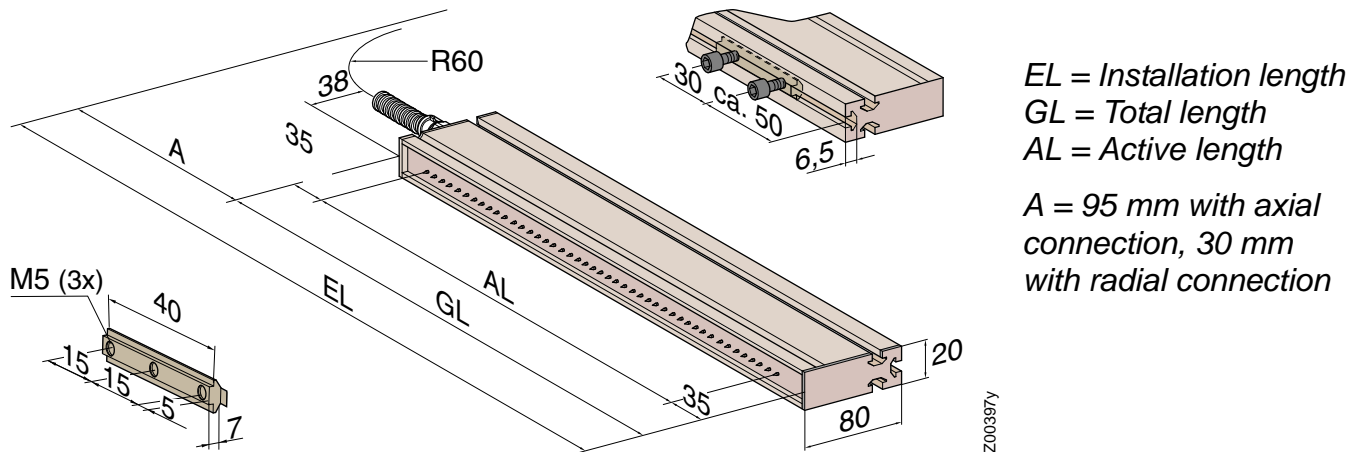
The generator is installed at the folder.

Technical specifications High Voltage Generator ST-KNH34

Supply voltage	230 VAC $\pm 10\%$, 50 Hz 115 VAC $\pm 10\%$, 60 Hz (50 Hz: -5%)
Power input	max. 250 VA
Ambient operating temperature	+5...+40°C (+41...+104°F)
Storage temperatur	-20...+70°C (-4...+158°F)
Ambient humidity	max. 80% r.h., no dewing
Enclosure	sheet metal steel, 1.5 mm, enamelled, aluminium anodised
Protection class	IP 54
Dimensions with wall bracket	410 x 212 x 135 mm (H x W x D)
Weight	10,5 kg
Charging	
Output voltage ST-KNH34/P	0...+30 kV $\pm 0,2$ kV DC (accuracy 2% of full scale); display resolution 100 V, adjustable in increments of 100 V
Output voltage ST-KNH34/N	0...-30 kV $\pm 0,2$ kV DC (accuracy 2% of full scale); display resolution 100 V, adjustable in increments of 100 V
AC component output	<3% at U_{\max} and I_{\max}
Output current	0...5 mA $\pm 0,05$ mA (accuracy 2% of full scale); display resolution 0.01 mA, adjustable in increments of 0.01 mA
Operating modes	voltage constant; system deviation <2%
Feedback control	I-Controller, load-adapted



Charging Bar STR130A3



EL = Installation length
GL = Total length
AL = Active length

A = 95 mm with axial
connection, 30 mm
with radial connection

Plastic or metal sliding nuts and bolts
Bolt depth max. 6.5 mm
Torque 4 Nm (metal)
Torque 0.4 Nm (plastic)
If necessary, cut bolt to size and secure (e.g. Loctite 243)

The charging bar STR130A3 transfers positive or negative high voltage onto the incoming webs and interlocks them. Positive and negative electrodes are arranged in opposition to each other.

Use the three assembly slide grooves for installation.

Technical specifications Charging Bar STR130A3

Material, bar element	GRP, casting compound PU
Emission tips	encapsulated and electrically decoupled, low capacitance
Ambient operating temperature	0...+60°C (+32...+140°F)
Ambient humidity	max. 60% r.h., no dewing
Operating voltage	max. -30 kV DC/+20 kV DC

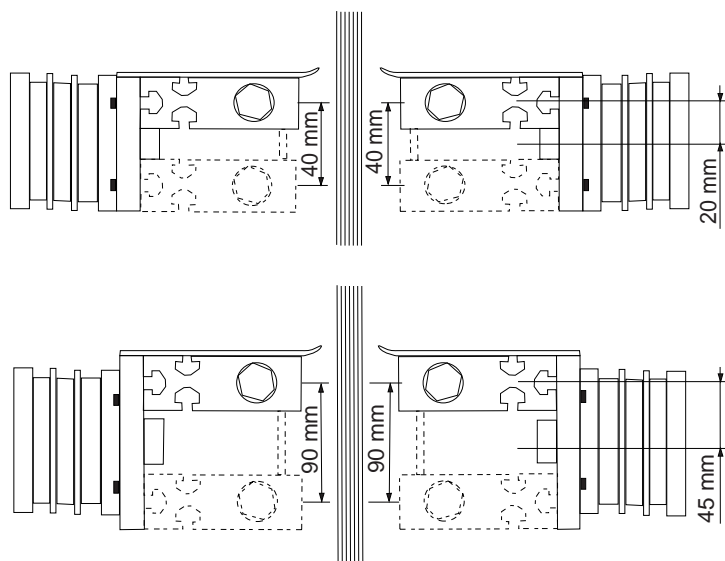


System GHH36-1

Two charging electrodes are mounted opposite each other.

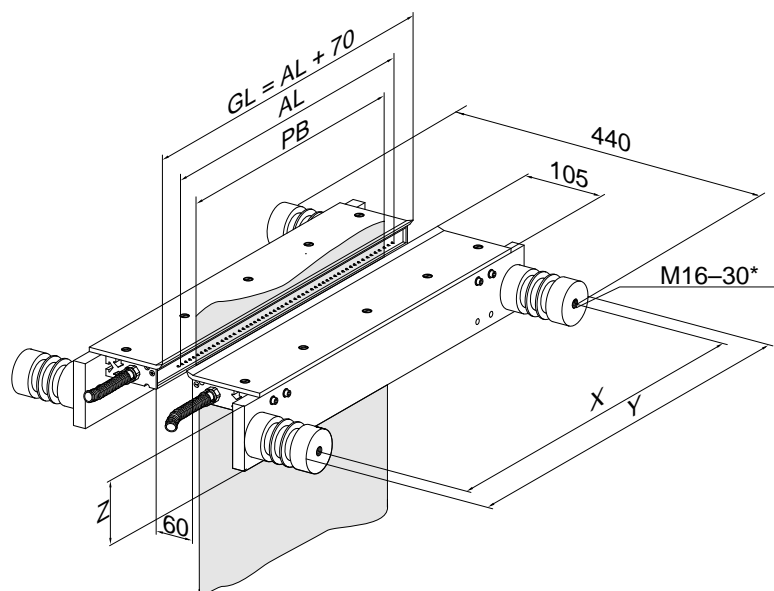
The bracket is designed such that a second row of electrodes can be retrofitted.

The electrode spacing is then:
40 mm with bracket ST/T1 and
90 mm with bracket ST/H1.



Z00088y + Z00087y

Dimensions



Z00344y

GL = Total length
AL = Active length
PB = Paper width

** = deep*

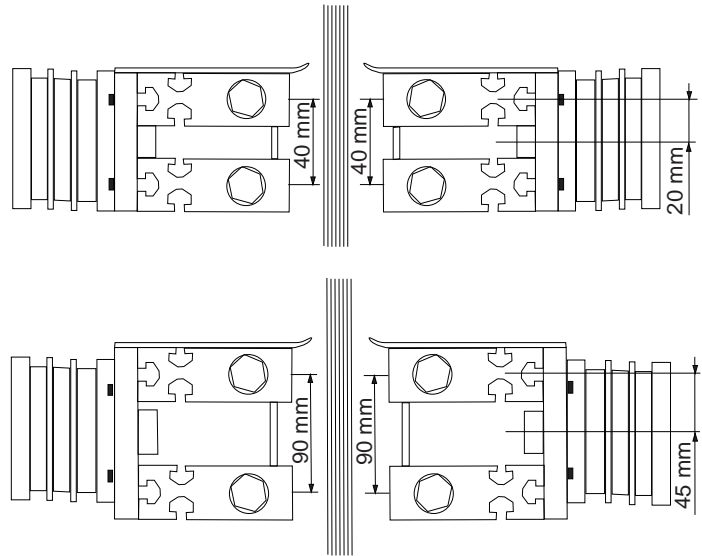
Bracket	Max. paper width	Max. active length AL of the electrode	X	Y	ST/T1:Z	ST/H1:Z
A	300	315	420	480	60	110
B	500	515	620	680	60	110
C	620	635	740	800	60	110
D	700	715	820	880	60	110
E	800	815	920	980	60	110
F	1000	1015	1120	1180	60	110



System GHH36-2

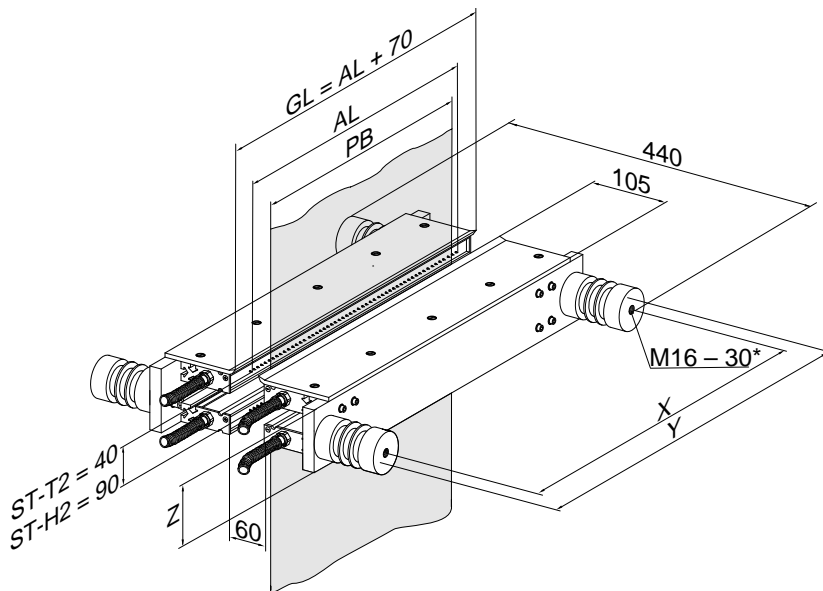
Two charging electrodes each (4 in total) are mounted in opposition to each other.

The electrode spacing is:
40 mm with bracket ST/T2 and
90 mm with bracket ST/H2.



Z00089y + Z00088y

Dimensions



GL = Total length
AL = Active length
PB = Paper width

** = deep*

Z00344y

Bracket	Max. paper width	Max. active length AL of the electrode	X	Y	ST/T2:Z	ST/H2:Z
A	300	315	420	480	60	110
B	500	515	620	680	60	110
C	620	635	740	800	60	110
D	700	715	820	880	60	110
E	800	815	920	980	60	110
F	1000	1015	1120	1180	60	110

Cable Connections

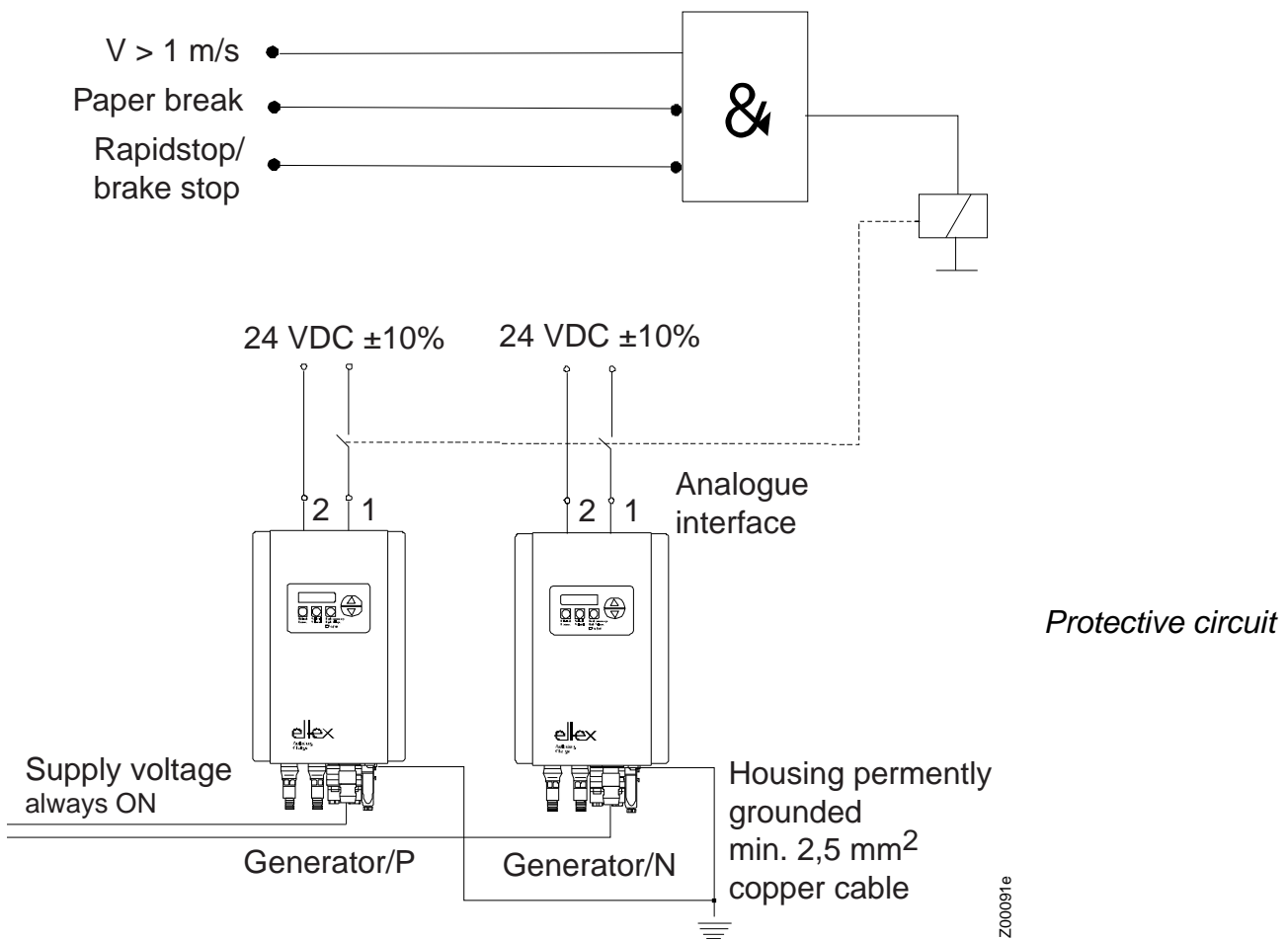
Item	Designation	Connections on Site (Customer)	Type	Number
1	Option ESC2MODEM: mains lead modem and telephone connecting cable	230 V mains power outlet close to the system (max. 2 meters) and telephone connecting cable with RJ11 plug required	-	1/system
7	Mains cable remote control ESC2 Power supply	Wire end ferrules	KN/DD____ 106028	1/system
14	Mains cable remote control ST-KNHFB	Wire end ferrules	KN/BD____	1/system
8	Mains cable generator	Wire end ferrules	KN/AD____	1/generator
9	Enable cables charging and discharging from the protective circuit to the generator	Wire end ferrules	KS/B____	1/generator
10	CAN bus cable between the generators		KS/A____	Sum of generators - 1
11	CAN bus cable to remote control		KS/A____	1/system
12	Network integration	Networkcable RJ45, Ethernet interface 10/100 Base-T	-	1/system
13	Fault alarm contact		KS/C____	1/system
	Cable charging bar	Integral component of the bar	-	-

Protective Circuit, Enable Signals

For each generator a protective circuit with the following functions (see figure) must be realized. The proper function of the protective circuit must be checked before putting the ribbon tacking into operation.

Protective circuit installed by customer	Generator ST-KNH34
Master switch of machine ON	Supply voltage ON
Machine speed >1 m/s	High voltage enabled
in the event of web break, rapid/brake stop	High voltage deactivated

To guarantee the safe operation of the unit, the following enable conditions must be observed.



Note!

When using external protection fusing for generators, the following power protection must be used: 6 A; tripping characteristic D complying with DIN EN 60898-1 (VDE 0641-11).

Web break

The charge enable function must be switched off by the protective circuit of all connected generators immediately after a web break occurs. Some machines allow the operator to continue in spite of the web break sensor responding (web break override). Blocking the enable function must be safeguarded in this case.

Minimum speed

The minimum printing speed required for enabling the charging function is 1 m/s. The enable function ought to be set such that it is activated just short of the minimum production speed. After charging has been enabled, maintenance and cleaning work is not allowed. If required, charging should not be enabled until higher speeds are reached.

The operator of the plant is responsible for the proper function of the protective circuit.

Each generator housing must be permanently grounded via the ground terminal (min. 2.5 mm² copper cable).

Eltex offices and agencies

The addresses of all
Eltex agencies can be
found on our website at
www.eltex.com



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