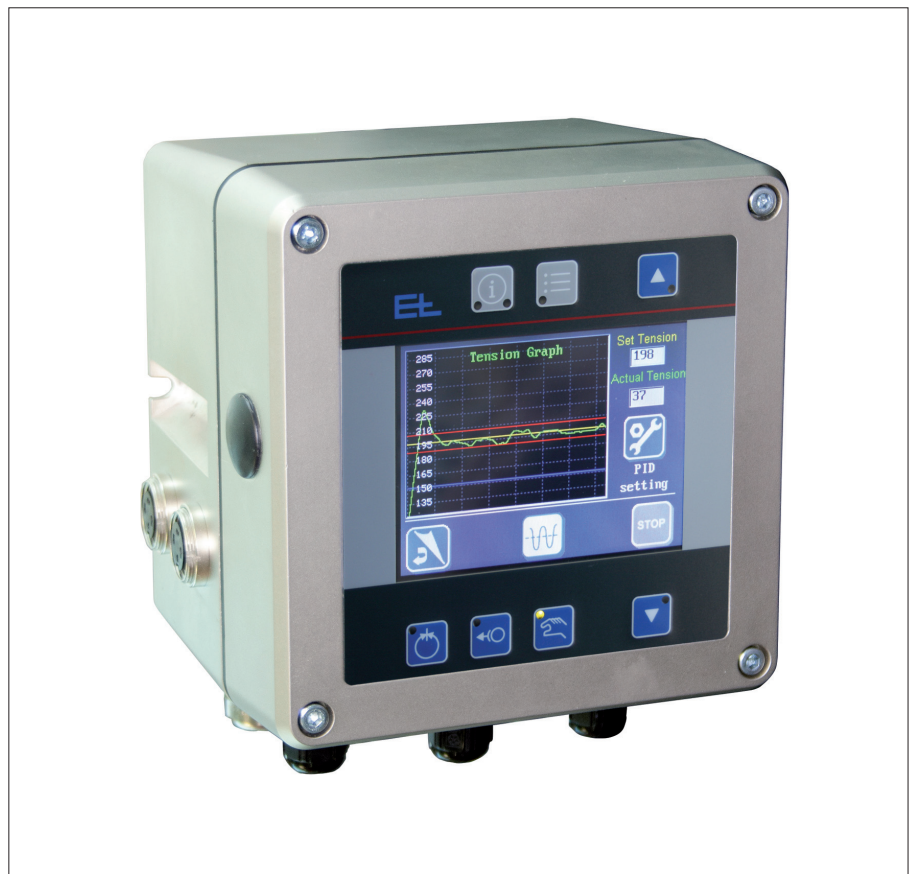# Web tension controller DC 62..

The web tension controller has a variable controller structure to cover a wide variety of applications:

- Closed loop control via load cell or dancer position. Unwinder with electrical or pneumatic brake; rewinder / unwinder or transport drive with speed-controlled drives
- Open loop control with diameter sensor aquisition; unwinder with electrical or pneumatic brake

The integrated measuring amplifier, the analog inputs and outputs and the power output element for electrical brakes make possible a compact design. The menu-based, language-neutral commissioning wizard combined with the color touch display guarantee very straightforward, quick commissioning of the web tension control system. Integration in the customer's controller is ensured with the Ethernet interface.

Further functions:
- 30 recipes
- Configurable winding characteristic (taper tension)
- Alarm function

Usage

The DC 62 is universally suitable for all web tension control tasks regardless of whether in the paper, film or textile industrial sectors.

Web tension control

Function of unwinder with pneumatic brake

Two load cells measure the actual web tension of the moving web. This value is compared with the target web tension and transferred as a control difference to the PID controller. The PID controller forms the actuating signal for the following U/P converter. The converter provides on its output a proportional actuating signal
for operating a pneumatic brake.

Special features
- connection for diameter sensor
- mass inertia compensation for quick stop
- moment target value for unwinders
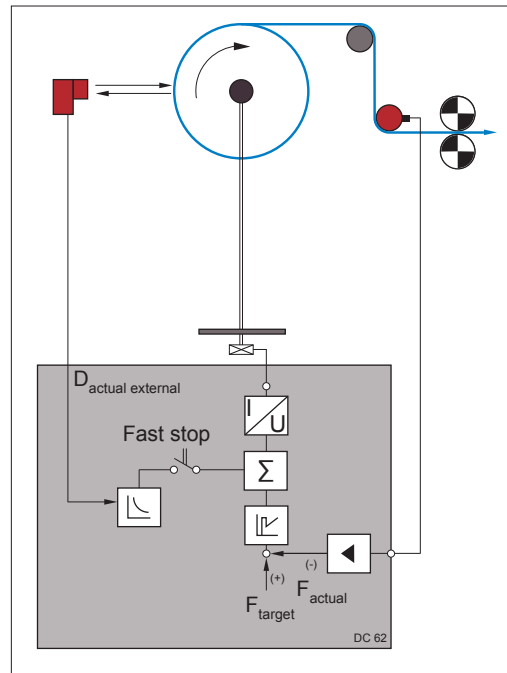
Function of unwinder with electric brake

Two load cells measure the actual web tension of the moving web. This value is compared with the target web tension and transferred as a control difference to the PID controller. The PID controller forms the actuating signal for the integrated U/I converter. The converter provides on its output a proportional actuating signal for operating an electrical brake.

Special features
- moment target value for unwinders
- integrated output stage for electrical brake
- mass inertia compensation for quick stop
- optional connection for diameter sensor
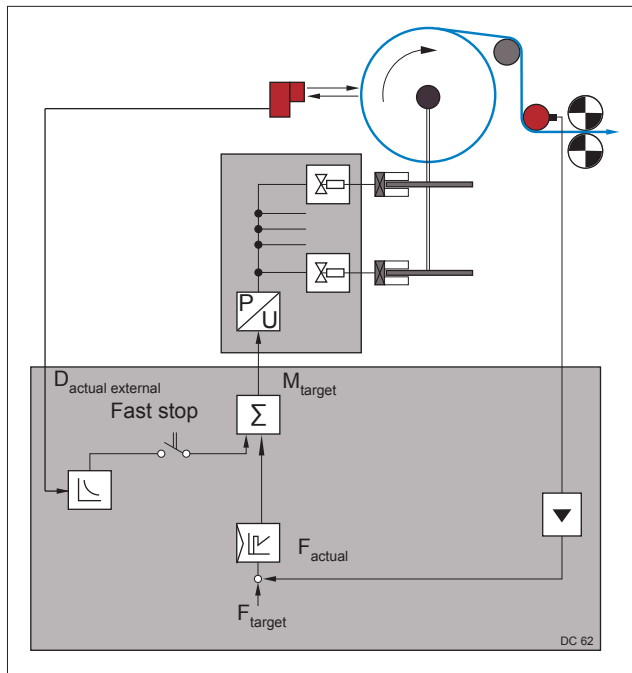
Control structure for unwinder with pneumatic brake

Control structure for unwinder with electrical brake

Web tension control

### function of rewinder or unwinder with speed-controlled electrical drive

Two load cells measure the actual web tension of the moving web. This value is compared with the target web tension and transferred as a control difference to the PID controller. The PID controller forms the speed correction signal $\pm \Delta v$ which is added to the web speed signal v web target. The v web target corresponds to the v web target from the main drive. For unwinders and rewinders the superimposed speed target value is divided by the actual winding diameter. The result is a superimposed speed target value for the speed-controlled unwinder and rewinder.

Function of transport drive

Two load cells measure the actual web tension of the moving web. This value is compared with the target web tension and transferred as a control difference to the PID controller. The PID controller forms the speed correction signal $\pm \Delta v$ which is added to the web speed signal. This signal is transferred to the next drive.

Dancer position control

Function of unwinder with pneumatic or electrical brake

The dancer position is measured via an analog signal and compared with the adjustable target position. The difference is transferred to the PID controller and a corresponding actuating signal is calculated.

Braking torque control

Function of unwinder with pneumatic or electrical brake

During braking torque control the torque is adjusted depending on the current winding diameter. Overall the torque can be defined via the target value.
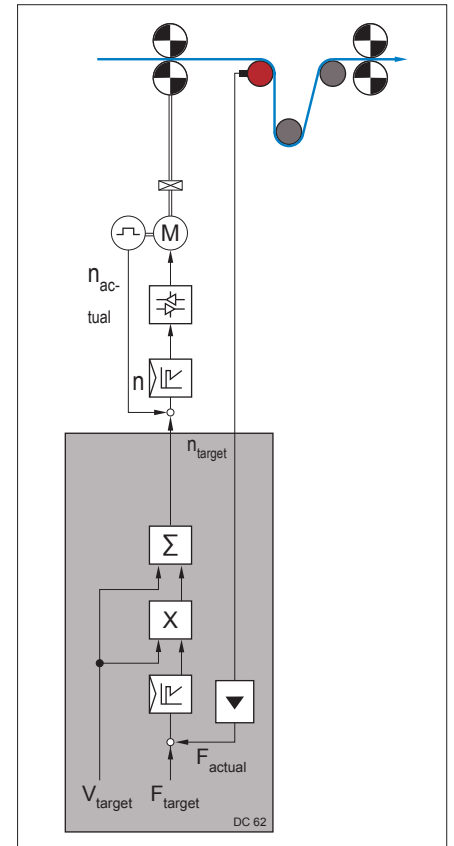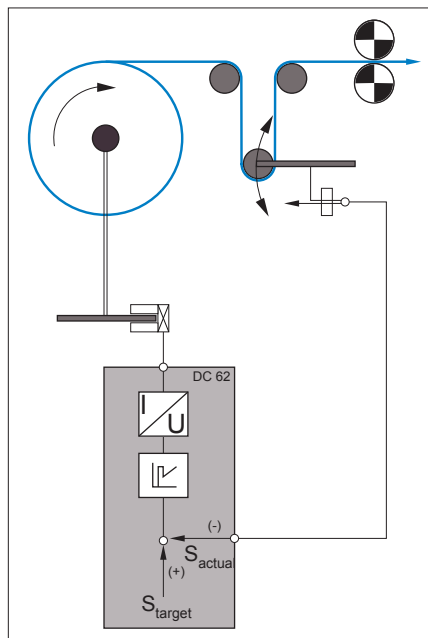
Special features
- connection for diameter sensor
- speed target value for rewinders and unwinders
- winding characteristic $F = f (D)$ can be selected as required
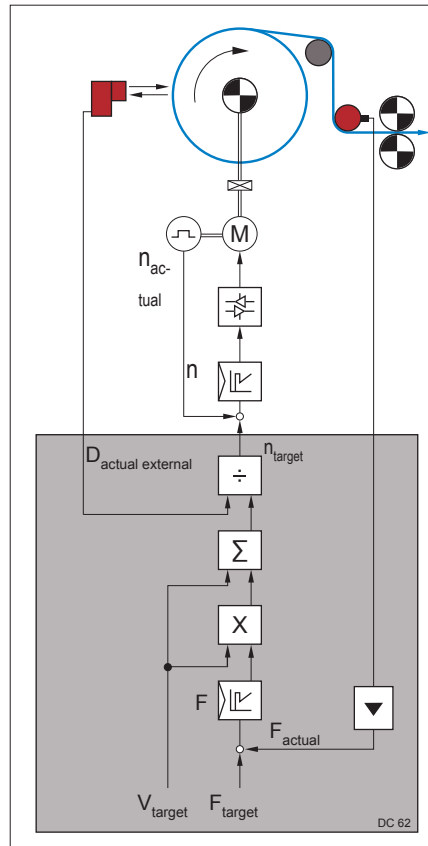
Control structure for rewinder and unwinder

Special features
- speed target value for transport drive

Control structure for transport drive
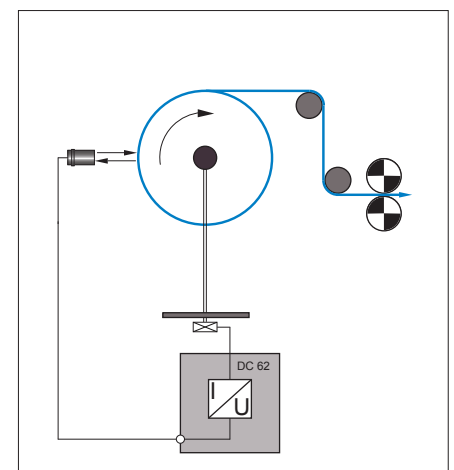
Special features
- connection for diameter sensor
- integrated output stage for electrical brake

Control structure for unwinder with dancer

Special features
- very easy adjustment of the braking torque, depending on the diameter
- connection for diameter sensor
- integrated output stage for electrical brake

Unwinder control

Technical data DC 62..

Operating voltage	24 V DC (20 to 30 V DC)
Current consumption	
(without/with electrical brake)	0.3 A / 2.3 A
Nominal operating temperature	10 to 50° C
Control cycle time	1 ms
DMS amplifier	2 channels
Input voltage	30 mV / 14 bits
Bridge supply voltage	10 V
Analog inputs	
Guiding value/target value/dancer position	2 x 0 to ±10 V / 14 bits
Diameter	1 x 0 to 10 V / 12 bits
Analog outputs	
Electrical brake / coupling	PWM current output 0 to 2 A / 24 V
Controller actuating signal	1 x 0 to ±10 V / 14 bits
	1 x 0/4 to 20 mA
Monitor output	1 x 0 to 10 V / 12 bits
Digital inputs	3 x floating
	Signal "0": -5 V to +2 V
	Signal "1": +8 V to +30 V
Digital outputs	2 x floating / short-circuit proof
Output voltage	24 V DC / 0.5 A
Interfaces	
CAN	250 kBaud
Ethernet (UDP) (only DC 620.)	RJ 45, 100 MBit
Dimensions (W x H x D) / protection class	
DC 62.0 plug-in	100 x 100 x 9 mm / IP 20
DC 62.1 housing	130 x 155 x 106 mm / IP 54

Subject to technical change without notice

Selection table web tension controller DC 62..

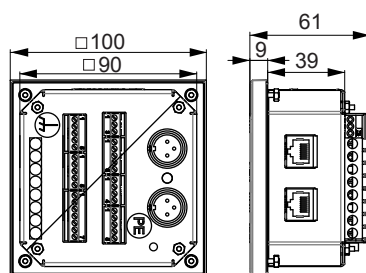| Type	Plug-in	Housing	Ethernet
DC 6200	x		x
DC 6201		x	x
DC 6210	x		
DC 6211		x	

Recommended E+L load cells
PD 2..., PD 3..., PD 4..., PD 5...

Accessories
- electrical brake:
  ELB 035., ELB 065., ELB 120., ELB 170.

- pneumatic unit for pneumatic brake:
  DP 2010

DC 62.0 (plug-in)

DC 62.1 (housing)