Micro Deviation Automatic Tension Controller PCF-120A

This controller detects the material tension using load detectors set on both ends of the roll, and controls the powder clutch/brake and AC servomotor's torque automatically to eliminate the difference in the set tension and the detected tension.
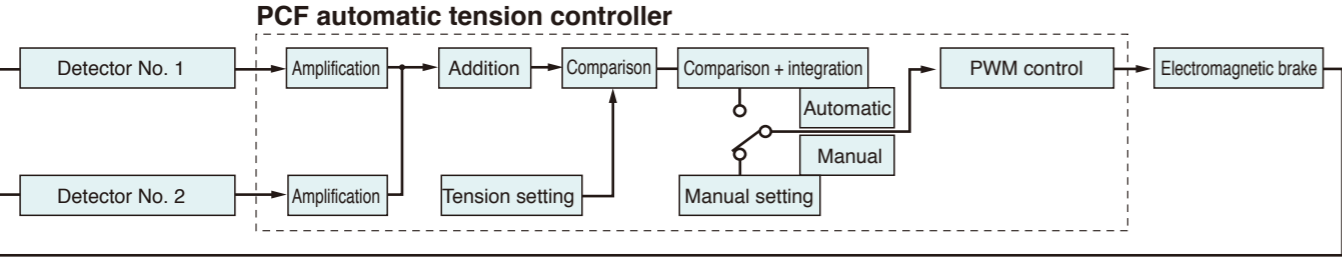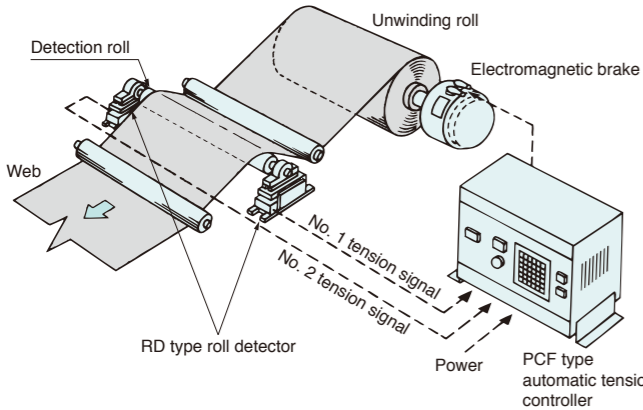
This control method adjusts to the actual set tension, and provides the highest precision among tension control systems.

It also adopts microcomputer control and a numerical keypad input method, realizing an easy-to-use and multi-functional tension control system.

PCF-120A

■ Principle of operation

● Structure and principle

- Unwinding roll
- Detection roll
- Electromagnetic brake
- Web
- No. 1 tension signal
- No. 2 tension signal
- RD type roll detector
- Power
- PCF type automatic tension controller

PCF automatic tension controller

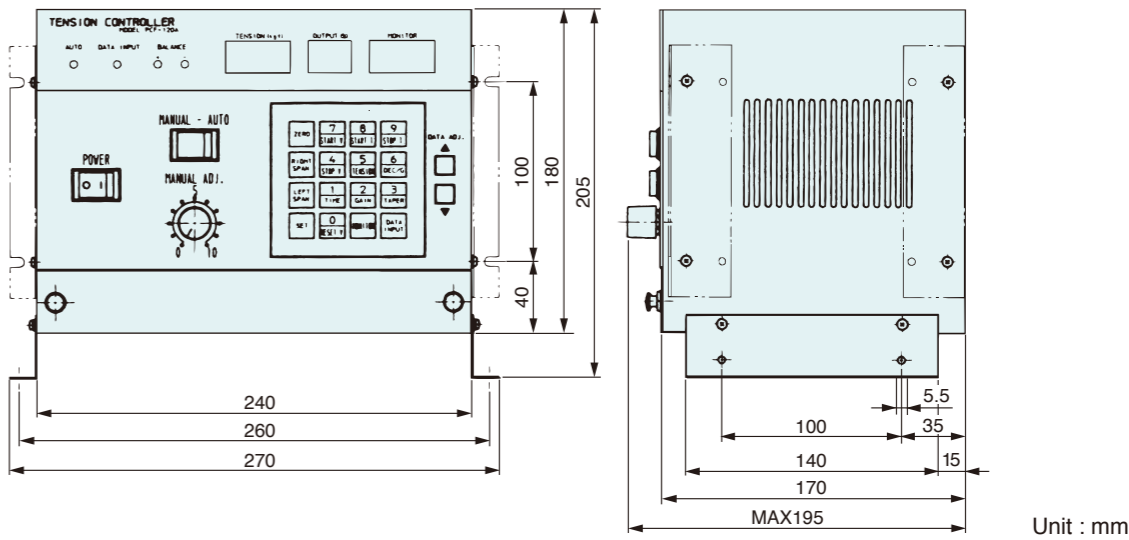| Detector No. 1 | → Amplification | → Addition | → Comparison | → Comparison + integration | → PWM control | → Electromagnetic brake |

■ Features

1 High precision control adopting microcomputer

This equipment uses a 16 bit microcomputer for digital processing of proportional and integral control minimizing operational errors. And our load detector adopts a load cell method to minimize detection errors.

2 Simple operation and setting

Troublesome volume adjustments are not required at all, and all settings can be made with the numerical keypad on the panel.

- Operation setting values such as initial settings including zero and span, tension setting and response gain can be digitally inputted, allowing repeated settings across similar machines.
- The set tension and the detected tension are separately displayed and the tension can be changed even during line stop.

3 Small in size and light in weight

It is small in size and light in weight by adopting microcomputer control and switching power supply, and reinforcing angles are not necessary even for mounting on a wall or on a panel.

4 Great diversity of high functions

Various high functions are included for more advanced tension control.

- The output memory is built in, so even if the power supply is cut off you can start the condition prior to stoppage when it is restarted-up.
- 0 – 10V DC can be input for external tension setting.
- 0 – 10V DC can be outputted for external tension display.
- 10V DC analog output is provided additionally to 24V DC for a wide range of control.
- An overcurrent protection circuit is provided to protect the controller in case of powder failure.
- Failures can be detected without a tester by the checking function.

■ Outline dimensions drawing/Specifications

● Outline dimensions

Unit : mm

● Specifications

Model	PCF-120A
Input voltage	100/110V or 200/220V AC switch
Output voltage	0~24V DC 0~6A PWM output / 0~10V DC analog voltage switch
Capacity	144W
Tension setting	0~99.9 (×10N), 0~999 (×10N)
External tension setting	0~10V DC (8bit)
Load detection input voltage	0~0.5V DC/rated load
Sequence signal input	Start, stop, speed reduction gain, manual, memory, roll switch
Sequence signal output	Zero tension
External tension output	0~10V DC
Monitor display	Tension display 0~99.9 (×10N), 0~999 (×10N)
	Output voltage 0~99%
	Monitor Set contents, set tension normally
	DATA INPUT Lighting during data input
	BALANCE Lighting by tension abnormality
Data setting items	• ZERO Zero adjustment
	• LEFT SPAN Set load of left loading detector
	• RIGHT SPAN Set load of right loading detector
	• START V Automatic operation start voltage
	• START T Occurrence time of automatic operation start voltage
	• STOP V Automatic operation stop voltage
	• STOP T Occurrence time of automatic operation stop voltage
	• RESET V Occurrence voltage during stop
	• TENSION Automatic tension value
	• TIME Response speed
	• GAIN Response range
	• DEC G Response range during line speed reduction
	• TAPER Taper rate

Protect function	Overcurrent trip
Operating temperature	0~40°C
Storage temperature	−10~50°C
Humidity	10-85%RH, without condensation
Atmosphere	No corrosion gas, dust (indoor use specification)
Vibration	0.5G or less
Altitude	1000m or less
Structure	Made of steel plate, floor installation, protective type
Weight	About 4.2kg
Paint color	Panel P2-1007 / Case 5Y8/0.5
Major applied models	Particle clutch/brake / Hysteresis clutch/brake / AC servomotor