



**CMC Controls Ltd**

**THE WEB TENSION  
SPECIALISTS**



Digital Display  
Models

# TENSION INDICATORS and CONTROLLERS



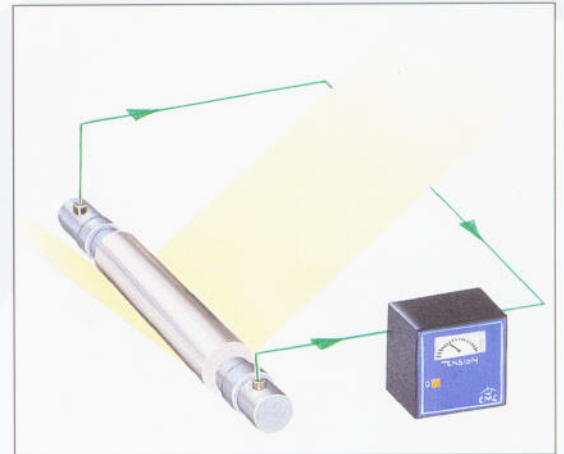
Analogue Display  
Models

## INDICATORS

Tension Indicators display the actual tension in any moving web. They accept the signals from (usually) two tension transducers, one at each end of an idler roller. These signals are then processed by a calibrated amplifier and displayed to the operator as the actual web tension.



All indicators are available with either analogue or digital displays according to customer preference. In addition they are supplied with a dual range display option, for both high and low working tensions allowing maximum sensitivity.



*Typical Indicator System*

The left/total/right (LTR) display option allows the operator to compare the tension on either side of the web to determine the direction and magnitude of the slack edge.

### DESIGN FEATURES

ANALOGUE DISPLAY 

*showing tension trends and fluctuations*

DIGITAL DISPLAY 

*showing tension values precisely*

DUAL RANGE 

*giving the ability of high tension use but allowing sensitivity at low tensions*

LTR FUNCTION 

*displaying the direction and magnitude of the slack edge in the web*

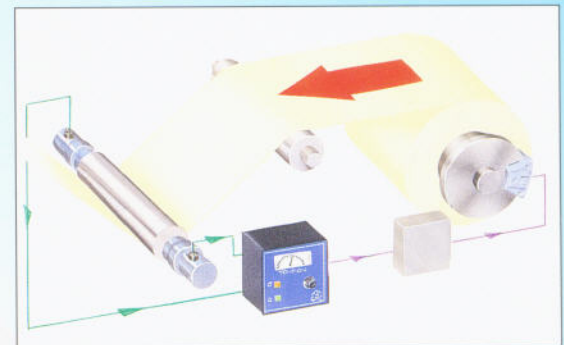
## UNWIND CONTROLLERS

Utilising the same display features as indicators, all of the unwind controllers incorporate extra features like "SOFT START" to prevent tension transients when starting the machine, and "PARK" to



prevent the unwind reel from rotating during machine stop.

The required tension is simply set by the operator. For the analogue versions, this is a rotary front panel control. Digital versions use front panel "UP/DOWN" tension setting push buttons. The actual running tension is continuously and accurately displayed, providing important production information.



*Unwind Control System*

### DESIGN FEATURES

SOFT START 

*eliminates tension transients on machine starting*

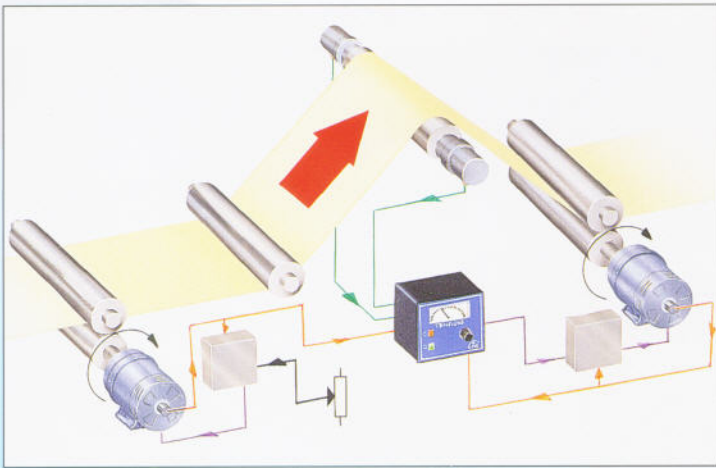
PARK SIGNAL 

*prevents the unwind reel from rotating on line stop, and thus causing slack web*

### BENEFITS GAINED

The pneumatic output version uses a well proven electropneumatic converter, that interfaces between the controller and brake. The electromagnetic output version uses a specially designed high efficiency power driver stage.

## INTERMEDIATE CONTROLLERS



Intermediate Control System

Again having all the same display features as the unwind controllers, intermediate controllers are used in conjunction with motor drives. They provide accurate tension control between process sections on any web converting machine by using speed trim methods.

Suitable for use with most proprietary DC drives, intermediate controllers combine the web speed and tension error signals to give maximum performance. Simple to retrofit, they give the ability to uprate a process section, at minimal cost, as well as giving a continuous and accurate display of web tension.

### DESIGN FEATURES

LINE SPEED MULTIPLY

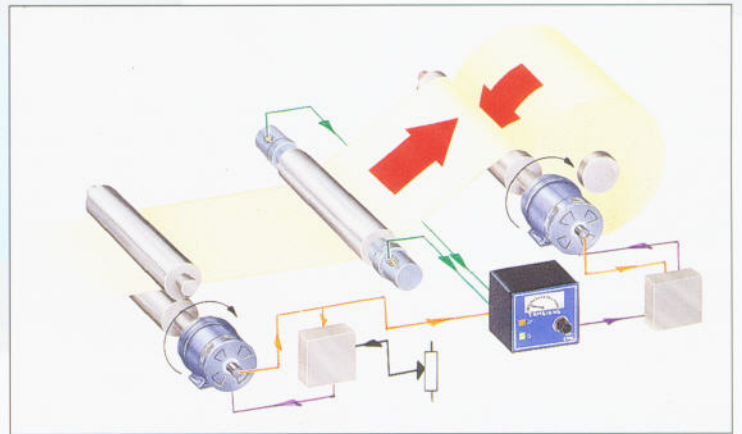
### BENEFITS GAINED

*Giving a correction signal which is proportional to machine speed, thus giving good control at all speeds*

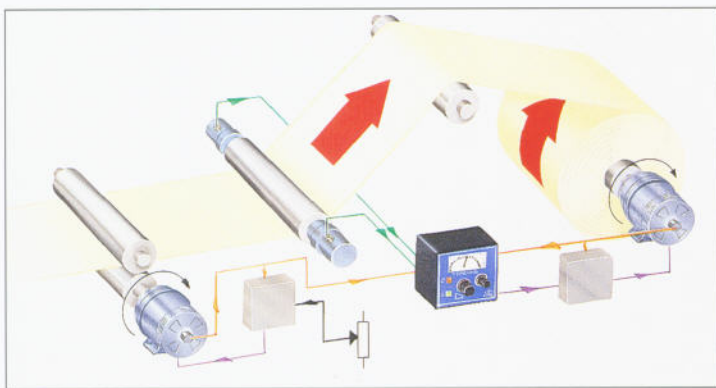
## REWIND CONTROLLERS

Rewinds fall into two categories, either **surface** or **centre**, each needing different control requirements.

When **surface rewinding**, it is possible to use the intermediate controller model as both applications are controlled by speed trim methods. However, **centre rewinders** are usually operated in torque mode, and the controller must give a signal that is a function of the rewind reel diameter to determine the correct torque to be applied.



Surface Rewinder

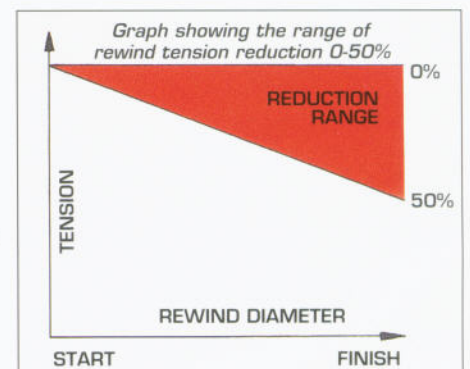


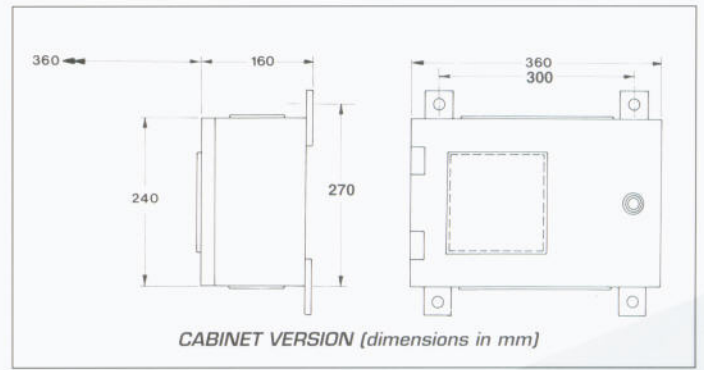
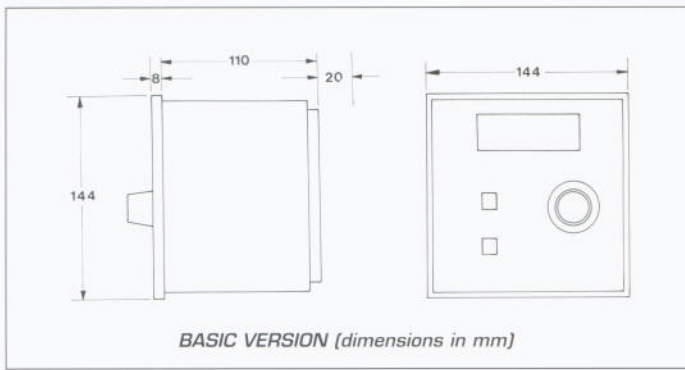
Centre Rewinder

Webs of a slippery nature or having an uneven cross section thickness, cause problems when centre rewinding. To obtain good rewind reels, the starting tension must be reduced as the rewind diameter increases. This action is known as "TAPER TENSION".



These new controllers incorporate a taper tension feature, operating automatically, using signals already existing within the rewind drive system. Easy retrofitted to rewinding machines, the benefits of improved reel quality are immediately seen.





## DESIGN FEATURES

REAR PLUG IN SCREW TERMINALS

*easy installation*

BODY AND CUTOUT SIZE

*minimal panel space requirements*

KIT OR CABINET VERSIONS -

*choice for customer*

ANALOGUE OR DIGITAL DISPLAY

*shows trends, or precise values*

PLUG IN CIRCUIT BOARDS

*rapid servicing*

## BENEFITS GAINED



*Cabinet version available*

CMC Controls Ltd., the web tension specialists, developed this series of compact and versatile tension indicators and controllers after many years experience in the field, to meet the changing needs of the industry.

CMC controllers and indicators are available with either analogue or digital displays, depending on customer preference. With four basic variants, each of which can be supplied either as individual kits, for machine builders, or as a fully built system for simple retrofitting on site to existing production lines.

## HOW TO ORDER

When choosing a specific model there are several options to consider, for example...indicator or controller...analogue or digital display...etc.

To help you select the correct model, the chart makes the ordering process easy, when discussing your requirements with your CMC Controls Ltd representative.

MODELS	OPTIONS											
	KIT FORM	CABINET FORM	ANALOGUE DISPLAY	DIGITAL DISPLAY	DUAL RANGE	LEFT/TOTAL/RIGHT	0/+10V TENSION OUTPUT	4/20mA TENSION OUTPUT	0/+10V CONTROL OUTPUT	0/24V CONTROL OUTPUT	0/6 BAR AIR CONTROL OUTPUT	HAZARDOUS AREA USE
INDICATOR TI	↔		↔		↔		●	✓	×	×	×	✓
UNWIND CONTROLLER PC/MC	↔		↔		↔		●	✓	●	↔	×	✓
INTERMEDIATE CONTROLLER ICD	↔		↔		↔		●	✓	●	×	×	✓
REWIND CONTROLLER WCD	↔		↔		×	×	●	✓	●	×	×	✓

*A range of compatible Tension Transducers is available from CMC Controls Ltd the specialists in web tension systems.*

 <b>CMC Controls Ltd</b> <a href="http://www.cmcccontrols.co.uk">www.cmcccontrols.co.uk</a>	REPRESENTED BY  AGENTS IN EUROPE AND AUSTRALASIA	ASSOCIATE COMPANY   CLEVELAND, USA.
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