



## MEASUREMENT AND CONTROL SOLUTIONS

### PRECISION TRANSDUCERS FOR TENSION MEASUREMENT CRC AND CRCI SERIES

#### Features and Benefits

- Force range 100 to 1000 Newtons
- 10V excitation
- 2mV / V output
- M12 series adjustable connectors fitted
- Positive mechanical overload
- Integrated roller on CRCI model
- 1 off M16 or 4 off M6 mounting bolts



The CRCI transducer series from TTS Systems is a high precision tension measurement product for use in cantilevered web tension applications. This product has been designed to maximize on precision whilst ensuring low manufacturing costs for the sensing roll.

It is well established in the market place and is regarded by many machine builders as undoubtedly the simplest and most efficient product of its class and has demonstrated time and time again its ability to reduce installation and commissioning costs.

The transducer is supplied with an integrated idler roll of 150 mm or 250mm length at 60mm diameter. The high quality bearings provide low break away torque making this an ideal product for low tension applications. The roller may be coated to customers' specifications on request.

An adjustable M12 connector allows the cabling to be positioned away from any interference.

**Let's Talk**

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**Specifications**

**General**

Excitation voltage .....10V DC  
 Gauge type.....350Ω full bridge foil gauge network  
 Output signal at rated output .....16mV nominal  
 Temperature range.....+5 - 90°C  
 Humidity .....95% R.H.  
 Precision class .....better than 0.5%  
 Combined non linearity & hysteresis.....better than 0.5% of maximum rated output  
 Repeatability .....better than 0.2% of maximum rated output  
 Minimum overload capacity .....2 times maximum rating  
 IP rating.....IP50

**Mechanical**

Weight.....CRC 1.5kg typ.

Complete drawings and installation guidance available on request.

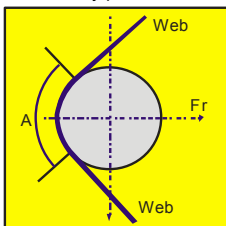
**Ordering Details**

**CRC-xxx**.....  
**CRCI-xxx-1**..... size 1  
**CRCI-xxx-2**..... size 2  
 Where ..... **xxx** is selected force rating and  
 ..... 1 is size 1 roller, 188.5 mm length  
 ..... 2 is size 2 roller, 318.5 mm length

**Available force ratings are:** 100, 250, 500 and 1000 Newtons

**Calculating The Transducer Rating**

**Configuration**  
 Fr is in any plane



**Key**

**T** ..... Maximum working tension  
**Fr** ..... Wrap angle bisector  
**A** ..... Wrap angle of material  
**K** ..... Constant for calibration  
**MWF** ..... Total calculate load per cell

$Fr = 2 * T * \sin(A/2)$   
 $W = 0$   
 $MWF = (K * Fr)$

To calculate transducer ratings you require the following parameters, maximum working tension (T), wrap angle (A) and angular offset (B). The formula given for the configuration, allows you to calculate the total load, termed MWF, that will be measured by the transducer. When calculated select the next rating above the MWF.

The following should be considered when selecting the transducer rating:

- (K) is a constant to allow for calibration. This figure is normally 2
- (T) should be the maximum working tension
- The wrap angle should be greater than 15 degrees and must not vary. Ideally, the sensing roll should be placed between an infeed and outfeed idler roller.
- Where multiple loads are applied to the same transducer rating, consideration has to be given to the upper and lower tension forces to ensure that the transducer generates an adequate signal for amplification.

Please contact TTS on 01233 624422 or through the internet on [www.tts-systems.co.uk](http://www.tts-systems.co.uk) if you require any assistance or further guidance for