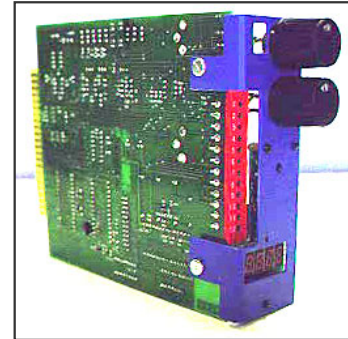


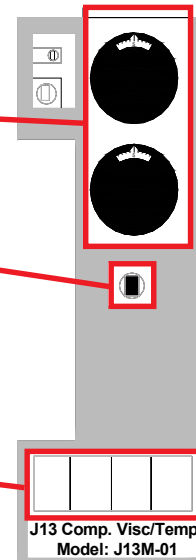
# TOV Transducer J13M Board

The Mansco Products TOV System is the leading in-line viscosity control instrument. As part of Mansco's continuing effort to provide the most effective and reliable in-line viscosity equipment in the world, an electronics upgrade was released in 1999 with changes to the TOV Transducer including a newly developed J13M Board. This new board includes new Temperature features along with other market leading enhancements.



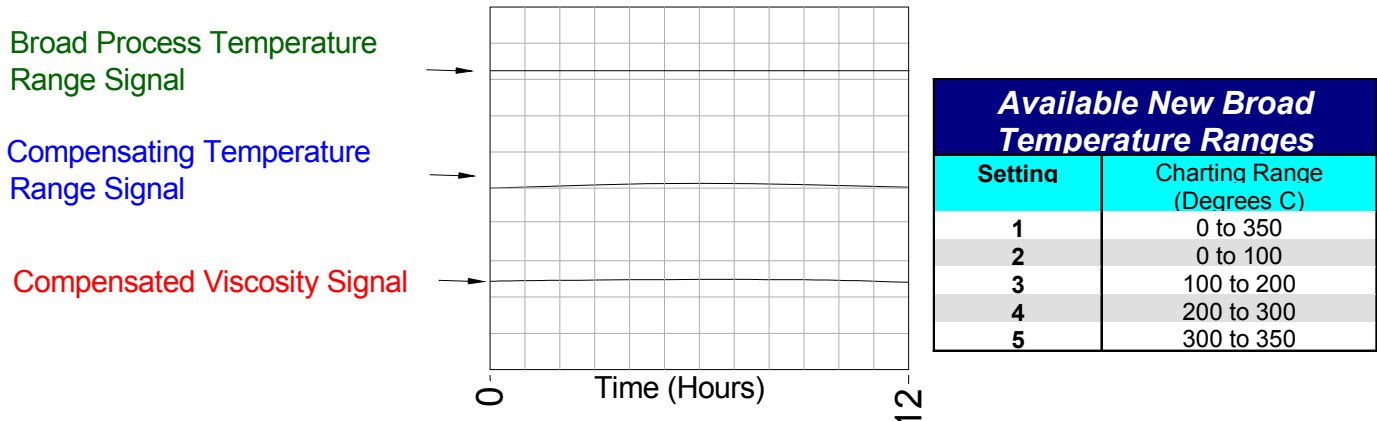
## Key Features of the J11M Board:

- ✓ Gain and Compensation Adjustment Pots
- ✓ New Push Button Automatic Compensating Temperature Balance
- ✓ New Broad Range Temperature Output (see Broad Temperature Ranges on next page)
- ✓ New LED Readouts of Direct Process Temperature
- ✓ Improved stability (see Chart on next page).



NEW J13M Compensated Viscosity/  
Temperature compensation Board

# THE J13 BOARD OFFERS IMPROVED STABILITY FEATURE



- 1 Chart unit = Approx. .5% change in viscosity (for this test and product only)
- 1 Chart Unit = 1°C change in Compensating Temperature
- 1 Chart Unit = 3.5°C change in Broad Range Temperature span of 0°C to 350°C.

J13 BOARD DATA MEASUREMENT SPECIFICATIONS		
Measurement	Accuracy	Repeatability (% of reading)
Temperature LED Reading	1%*	.1%
Temperature Balance	± .05 volt	.1%
Compensating Temperature Output	1°C/Volt	.1%
Broad Temperature Output	Varied	.1%
Compensation Response	1 Chart Unit/.05% Viscosity Change	.1%

\* Percentage of span from Temperature Balance Point

## About Mansco Products

Mansco Products has been manufacturing and supporting the Torsional Oscillatory Systems (TOV) System since its inception in the early 1960's. Over the past 3 decades, Mansco has developed its leading reputation for quality products and service. Mansco continues its vision of quality products and quality service equals quality solutions. Combining our reputation as an industry leader along with our vision for the future, we are and will continue to be "the in-line viscosity vendor." The TOV System remains the same quality instrument that industry

leaders rely on for their viscosity control. With new enhanced features and better analysis tools, the TOV now is easier than ever to use.

For more information, please contact the Mansco Products Marketing Hotline: +215.674.4395 or visit our web site at: <http://www.ManscoProducts.com>

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