



ACRODYNE

Actuation and Control

Offering a World of Innovative Solutions

14/11 Havelock Road
Bayswater Vic. 3153
Australia
Phone: 03 8727 7800
Fax : 03 9729 8699
Email: info@acrodyne.com.au
Web: www.acrodyne.com.au

Volume 2
Issue 6

Newsletter

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Proximity

All Your Position Indicator Needs

GT Pneumatic Actuators



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J&J Electric Actuators



A cost effective solution for your electric actuation needs.

Welcome to the sixth issue of our newsletter for 2005. Your feedback about our newsletters as well as your suggestions for any particular products or applications that you would like to read about is always welcome. With your input, we will do our best to provide you with informative and relevant reading matter. Please email your comments and requests to our Sales and Marketing Manager, **Chris Hoare**, at choare@acrodyne.com.au.

News

Limitorque.

In November ACRODYNE held its first Distributors meeting with Dan Warsing from Limitorque Asia. It was a very successful week with Dan covering subjects such as Sales and Marketing and many other issues. We would also like to thank Scott Fergus for his valuable experience with his session on the technical aspect of the Limitorque products.

Limitorque Parts and Actuators.

Acrodyne has now taken delivery of 2 semi-trailer loads of Limitorque parts and Actuators to assist in the quick turn around of all your Limitorque repairs and spare parts requirements. Any other parts that you require that we don't have in stock still carry the usual lead-times.

Many Thanks.

We would like to extend our deepest thanks to our customers for their patience during the transition period since becoming the Australian Distributor of Limitorque.

Beck's new Group 42 Electric Control Drives

Beck's all new Group 42 drives are designed to meet the actuation needs of the long stroke linear applications. Ideally suited for harsh industrial environments, the Group 42 handles long stroke applications requiring up to 1,000 lbs. of thrust.

For more information on this and other Beck products call Acrodyne on (03)8727-7800

October 2005 – Character of the month – Responsibility

Responsibility vs. Unreliability

Knowing and doing what is expected of me.

Know and do your duty – Know your role as a child, friend, student, employee, spouse, parent and citizen. Accept the duties that accompany each role.

Be accountable – Make and implement the decisions that fall within your area of responsibility.

Keep commitments – Be careful what you promise, and keep the promises you make. Keeping your word will earn you a good name.

Make no excuses – Accept responsibility of your actions, and do not look for someone else to blame.

Do your best – Consistently apply the best of your knowledge, skills and abilities to the task at hand.

If you would like to know more about Character First and how it can benefit your organisation, visit the Character First website at www.characterfirst.com.au or contact Philip Greenwood on 0411 131 449 or pgreenwood@cghcareer.com.

Acrodyne Christmas Party 2005



Another big success was the annual ACRODYNE Christmas party. It was held on Saturday the 3rd of December at Nelsons restaurant in Glen Waverley and great time was had by all.

(Everybody behaved and there were no casualties)



Please note the following dates for the Christmas Shutdown
22nd of December to the 8th of January

Acrodyne wishes all a safe and happy festive season

FEATURE ARTICLE

POSITION INDICATION

POSITION INDICATION

The single most common application for limit switch enclosures is position indication or feedback. Plant operators require verification that certain valves have gone to desired positions. Switches are tripped at desired positions and complete circuits.

VISUAL INDICATION

Simplest among feedback types is visual indication. In older plants, many valves are lever or gear operated, and provides clear, intuitive visual indication of valve position. With increased automation, visual indication becomes less intuitive. Actuators often do not provide indication, or may require close examination to determine position. To compensate, virtually all limit switch and positioner manufacturers offer some type of visual indicator.

Most common, and most visible, is the dome. This type can be viewed from many positions and at substantial distance. In its simplest form, a "rotor", painted two colours, turns underneath a "dome," painted a third colour with clear windows. At extreme positions, only one rotor colour is visible. At intermediate positions, both colours are visible. Common colour schemes include (red = closed / green = open) and (yellow = closed / black = open).

Manufacturers also offer three-way indicators. These show intuitively which valve "paths" are present. Since dome windows are smaller for these applications, intermediate indication is not accurate. However, this is not important for most cases, since throttling is uncommon.

LIMIT SWITCHES

The name "limit switch" refers to electrical devices used to limit travel. As stated above, most applications for so-called limit switch enclosures in our industry are used directly to indicate position. Indirectly, they may be used to limit travel or (more commonly) serve as interlocks. Interlocks are logic "inputs" for control sequences. For example, a user may not want to turn on a pump until its discharge valve is fully open. In years past, relay logic would have been used. Today, programmable controllers or computers can accomplish the task with greatly simplified wiring.

Another application of limit switch enclosures is to simply turn on panel lights.

RESISTIVE FEEDBACK

In some cases, users would like to know the precise valve/actuator position throughout its stroke, not just at extremes. This application is more common in modulating services, or in situations involving positioners. One option is resistive feedback. Resistive feedback employs a potentiometer inside a limit switch or positioner enclosure. It is operated by gearing attached to the enclosure shaft such that 90 degrees shaft rotation turns the potentiometer its full range. This option has limited application because most controllers and computers do not readily accept resistive input. However, for smaller systems using panel meters as readouts, resistive feedback offers a less expensive alternative to current feedback.

There are other applications for resistive feedback but they are less common and likely to be user-specific.

4-20 mA CURRENT FEEDBACK

Most modern controllers and computers can be specified with analog voltage or current inputs. Since two-wire systems are simpler and less costly (fewer lines to run to field device), current feedback is more desirable. In addition, the transmitter maintains current regardless of line voltage drops as long as the power source can provide enough potential.

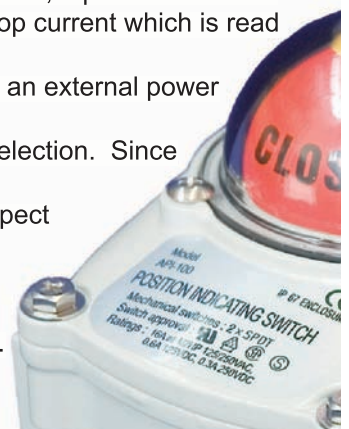
For most applications, the controller or computer provides power and the position transmitter controls "loop" current. Two wires connect the devices: plus to plus and minus to minus. Inside the limit switch or positioner enclosure, a potentiometer or other device provides an electronic signal to a circuit board. Circuitry then converts this feedback to loop current which is read by the controller or computer.

In some applications, users hook transmitters up to current meters or displays. For these applications, an external power supply is needed.

Some transmitters include LED indication of loop power for troubleshooting and direct/reverse action selection. Since transmitters operate on low current DC voltage, they are suitable for intrinsically safe applications.

We have one word of caution regarding transmitter use in conjunction with positioners. Many users expect feedback to perfectly track the input signal. Positioners have error associated with them in the form of linearity, deadband, hysteresis, etc. Transmitters also have such errors, although linearity is the most pronounced. These errors make it virtually impossible to perfectly track feedback with input. In addition, some users calibrate their positioners such that zero calibration is slightly below zero position.

This helps to drive the valve into its seat. It also causes further gaps between feedback and input, since the input signal must be increased significantly to provide valve movement out of the seat.



We are unable to include all available product details and features in this issue. For a more comprehensive set of information, clarifications and additional copies of this issue, please contact Andrew Hartley at ACRODYNE on 03 8727 7800.