

ANNUNCIATOR

MAY 1996



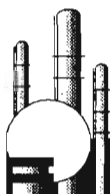
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Editor's Notes

Watch for the continuing saga... **"WRITTEN ON A ROLL CHART"**

These are the collective writings of HOWARD HOBBS, with commentary by Bob Connell.

ADVERTISERS: Please note that the deadline for the JULY ANNUNCIATOR is June 15, 1996. Please forward information to the editor by that date in order to have items updated.

ANNOUNCEMENTS:

- Volunteers are required for ISA Golf Tournament. See Page 43 for Details.

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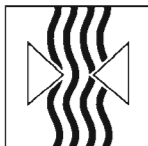
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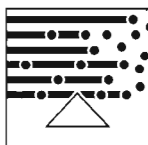
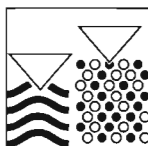
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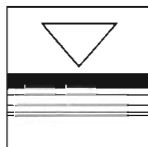
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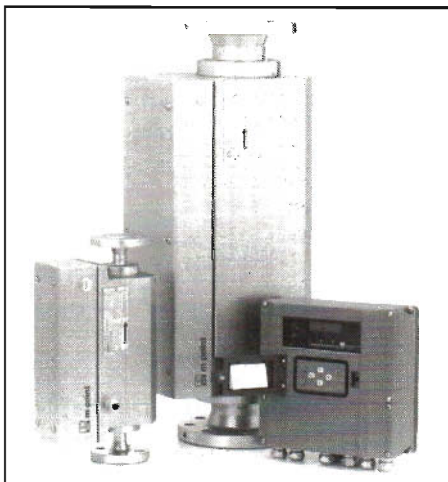
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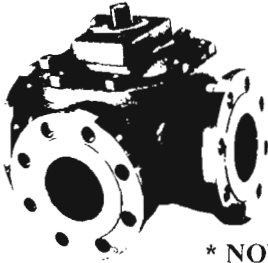
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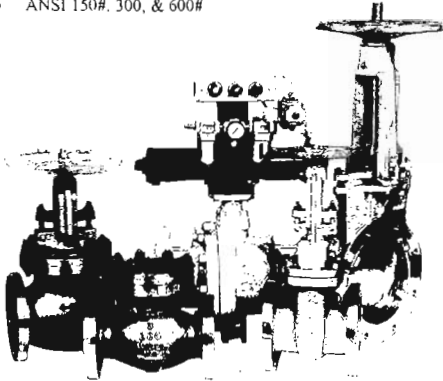
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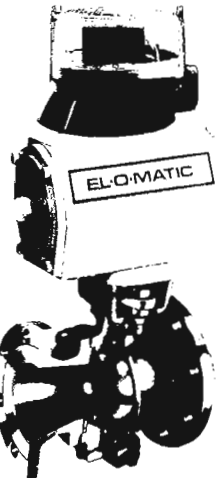
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President's Corner

Dear Members,

As my year as your president starts to wind down, I find myself looking at what we have accomplished and what still remains to be accomplished.

We have handled the business very well i.e.: cleaning up the charter (still in the hands of a lawyer) but we are in order! Bringing the business to you, the members, through the Annunciator and Dinner Meetings, Engineering Week, Science Fair, etc. Participation in the President's Winter and Summer Meetings and the Main ISA Conference.

However, there seems to be a few nagging issues that keep creeping in. They are membership and participation. Our membership continues to go up and down. Some of this is caused just because we forgot to fill in the renewal application. The other issue is harder to address. It deals with volunteering, setting priorities, caring, wanting to help, not waiting to be asked. We need you if we as a Section wish to flourish. Everyone has a skill, a talent, input (be it major or minor). We need to be able to tap that. So take a look within and find the time, be a participating member, not just an onlooker.

I will be looking for volunteers for next years executive, step up, not back.



Thanks!

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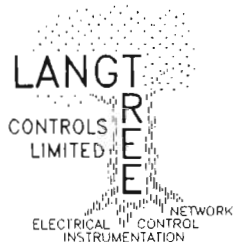
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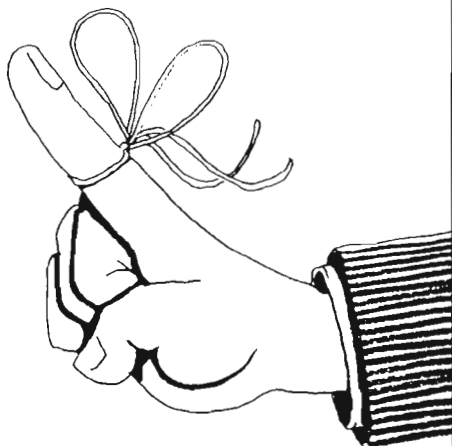
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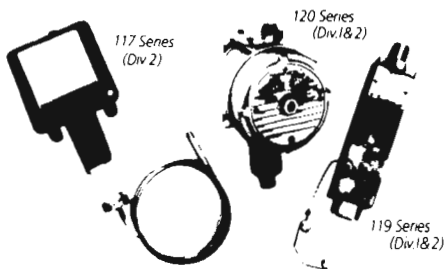
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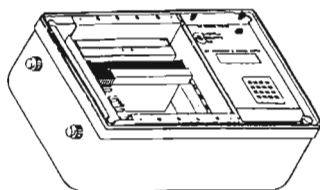
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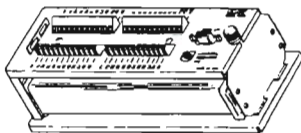


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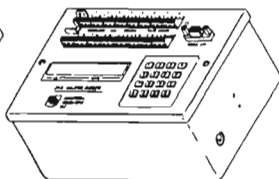
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For example, when a product is pumped out, its volume must be replaced or the vacuum created can cause the tank to collapse. The same is true when a rain shower on a warm day suddenly cools the tank, causing vapors inside to condense. Conversely, when product is pumped into the tank or the tank is heated, the build up of internal pressure must be relieved and the excess vapor pressure controlled.

Gas Blanketing

The blanketing of process and storage vessels is widely used to protect equipment, plant personnel and the products themselves. A blanketing gas, the most popular one in use is nitrogen, serves to reduce the oxygen content in the vapor space making it more inert and less susceptible to fire and explosion. In the refining industry where natural gas is abundant, it may also be used as a blanketing media.

Blanketing also helps to prevent air, moisture and other contaminants from entering the tank. It protects the tank from structural damage, and the product from spoilage and limits the evaporation of the product stored.

A gas-blanketing regulator is used to control the flow of gas from a supply header into the tank where it covers the stored liquid. Inlet pressures at the regulator typically range from 10 to 150 psig and the blanketing system's set pressure is normally 10 in. of water column or less.

Vapor Recovery

Vapor recovery systems have many applications, but the most common reason for installing a system is to prevent hazardous vapors from escaping into the atmosphere and reclaiming product loss because of vaporization. In a properly designed and installed recovery system, a

(Continued on Page 25)

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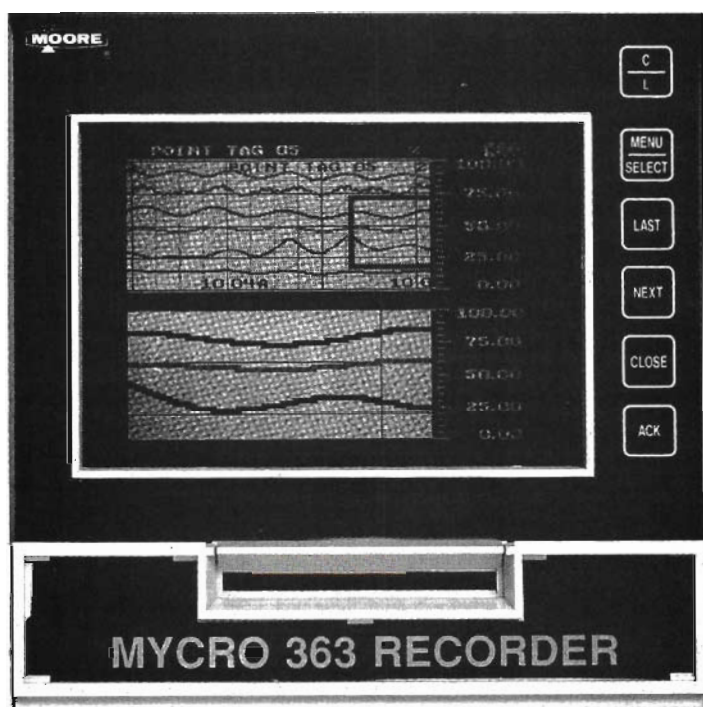
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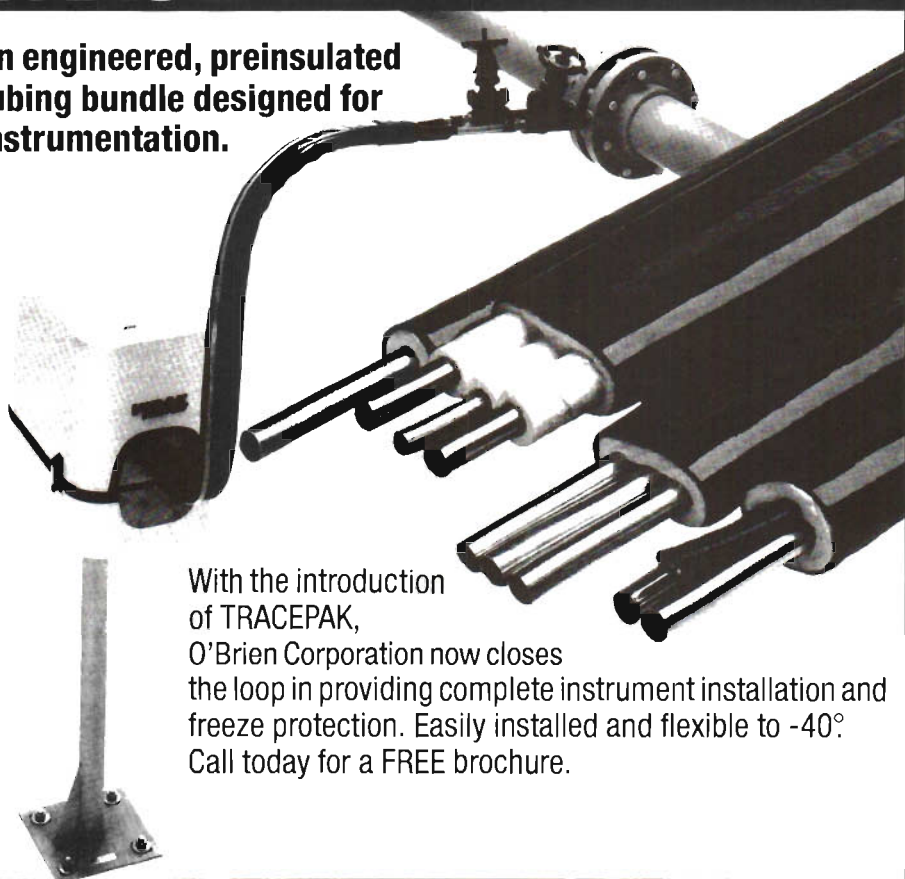


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(Continued from Page 21)

vapor recovery regulator opens to let excess vapor pressure escape from a process tank to suitable disposal or reclamation equipment.

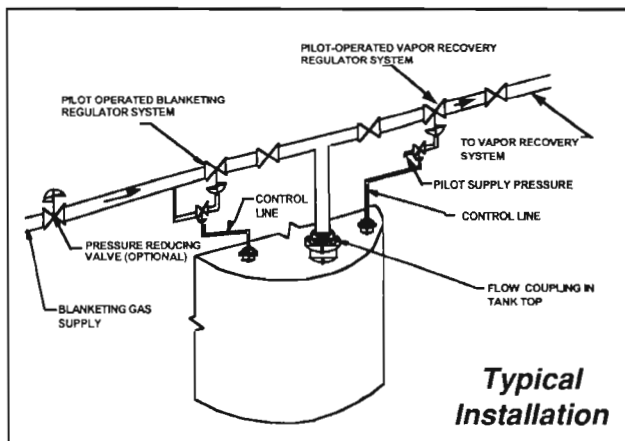
Traditional tank-breathing devices, such as conservation vents, have a limited ability to maintain a desired system pressure when the outlet is connected to other

equipment. Therefore, emergency vents or safety relief valves must still be installed, but these function only as backups when used in combination with a system based on a vapor-recovery regulator. A safety relief isn't considered a throttling device as a true vapor recovery regulator/relief valve would be. The setpoints for vapor-recovery systems are typically two to five inches of water column higher than for a blanketing system and totally dependent on blanketing setpoint and vessel limitations.

Tank Blanketing & Vapor Recovery Equipment

There are two main types of blanketing and vapor-recovery systems: control valves and regulators. Control valves have been used quite frequently in tank blanketing and vapor recovery systems. The advantage a control valve has over a regulator is that a control valve can be controlled remotely via a Distributed Control System(DCS). However, a control valve has a significant disadvantage over a regulator for the following reasons:

- Cost of installation is much higher with a control valve. A control valve will need a positioner, current to pressure transmitter, remote air supply, controller, and a pressure transmitter to sense tank pressure. It will also require additional database points on a DCS system. All control valves require air or electricity for actuation while only some pilot operated regulators may have that same requirement. If a regulator requires an external air supply for actuation, the advantage would be that the regulator uses air only when throttling while a control valve bleed is continuous.
- Regulators are inherently faster than a control valve. Control valves are slow compared to a regulator. Since the regulator measuring element(diaphragm) is directly connected to the process variable(tank pressure), response is



(Continued on Page 30)



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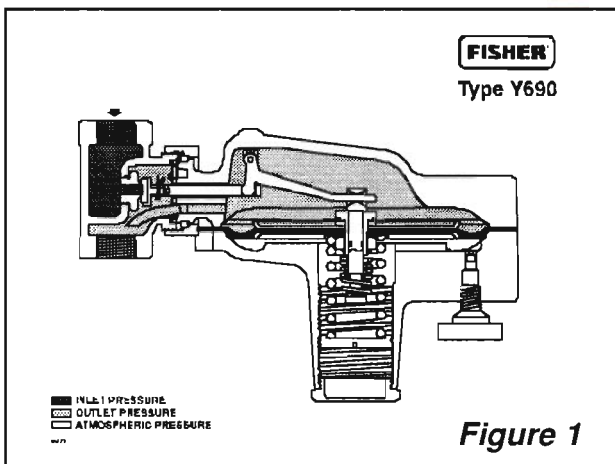
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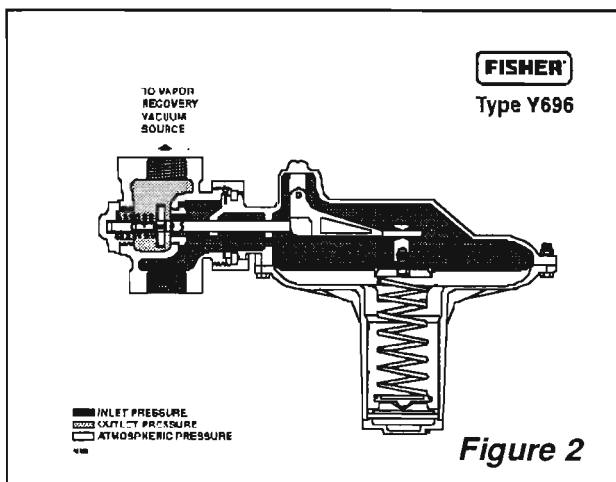


Regulator Types

Direct-operated regulators for blanketing sense the vapor pressure in the

tank and this pressure registers directly on the regulator's diaphragm. When the vapor's pressure decreases below the system's setpoint, the diaphragm moves the valve disk away from its seat, allowing gas to flow into the tank (Figure 1).

The amount of flow is regulated by the position of the disk rela-



(Continued on Page 34)

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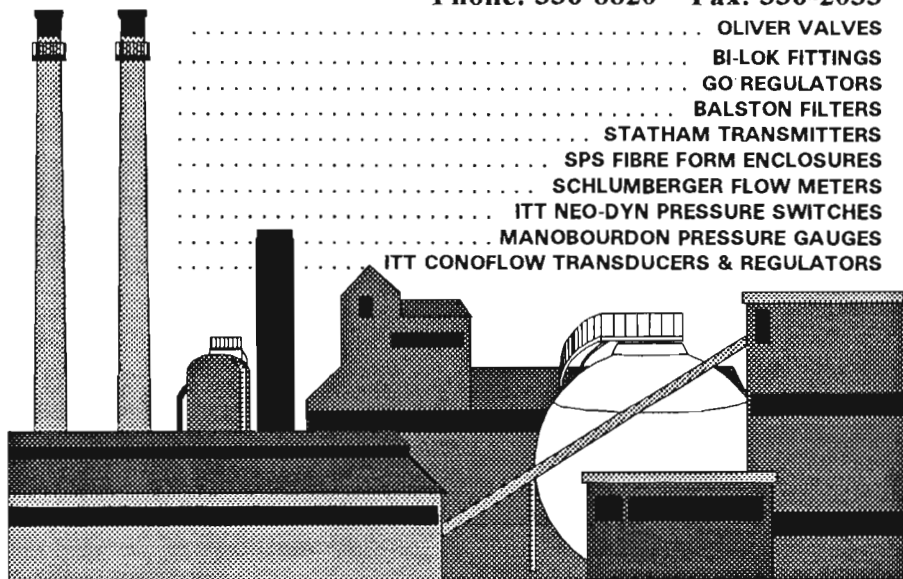
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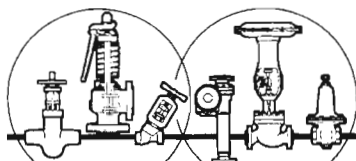
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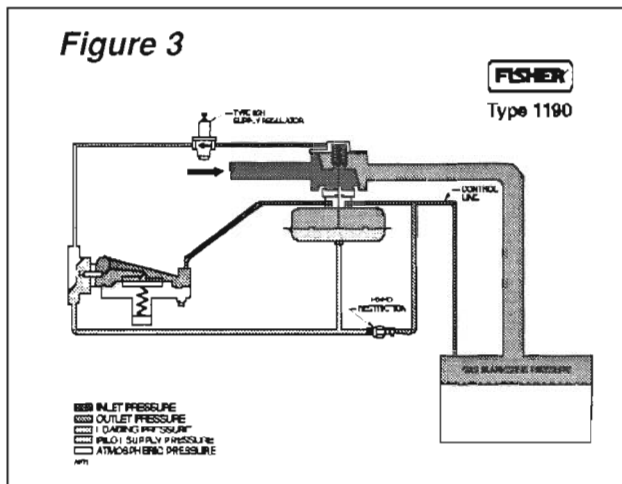
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Figure 3



tive to the seat. Variable-flow control is called throttling. Here, as vapor pressure in the tank increases, the disk moves closer to the seat and shuts off the flow completely when the pressure rises above the setpoint. Direct-operated systems respond quickly to changes in tank pressure.

In vapor recovery, the action of the direct-operated regulator is reversed. When the tank's vapor pressure rises above the setpoint, the valve's disk moves away from the seat, allowing the vapor to flow out of the tank (Figure 2). Thus, the higher the pressure build-up above setpoint, the more the disk moves and the greater the flow. The regulator shuts off the flow of escaping gas when the vapor pressure in the tank is reduced below the setpoint.

In pilot-operated regulators for blanketing, a pilot valve opens in response to a lower tank pressure, and a loading pressure is directed to the main valve to open it (Figure 3). When down-stream demand is satisfied, the outlet pressure increases slightly, thus acting on the diaphragms of the pilot and main valve. Then the pilot diaphragm moves to close the pilot valve plug, and the loading pressure to the main valve is dumped downstream allowing it to shut off. Small changes in vapor pressure in the tank are amplified by the pilot valve resulting in very accurate pressure control of the gas-vapor blanket.

Pilot-operated systems for vapor recovery utilize components similar to those used for blanketing, but again the action is reversed. In this case, supply pressure is equalized on both sides of the main valve's diaphragm. When the tank's vapor pressure reaches the pilot setpoint, it begins to open and dump the supply pressure from one side of the main valve diaphragm. The resulting pressure imbalance allows the main valve to then open.

Selecting a system

In general, direct-operated systems respond faster and are typically less expensive to purchase, install and maintain. However, their flow capacity is limited because of constraints in their body and orifice sizes at higher inlet pressures. Setpoints for direct-operated blanketing regulators are

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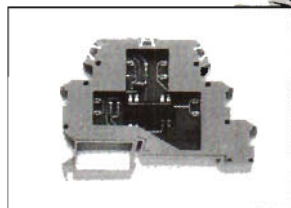
These DIN-rail mounted, modular blocks feature dead-front construction and captive screw-clamp termination for safe, reliable installation — in a snap. Phoenix Contact has the broadest line of multi-function wiring devices and feed-thru terminal blocks in the industry.

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For application assistance, or a copy of our newest catalogue, call or fax.

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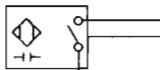


SMD technology allows relay isolation and contact ratings up to 3A in a terminal block only 1/4 inch (6.2 mm) wide.

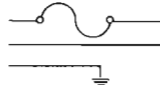
Better space utilization for fused circuits.



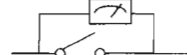
Three or four wire sensors.



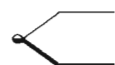
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(Continued from Page 34)

typically around 1/2" of water column. Lower setpoints are available in direct operated but inlet pressures must be reduced.

Direct-operated blanketing and vapor-recovery regulators are generally the best choice if a proportional band of at least plus or minus one-half inch of water column is acceptable. They should also provide sufficient flow under the specific service conditions of the application.

Pilot-operated blanketing systems may have setpoints as low as one-fourth inch of water column, and have proportional bands of one-fourth inch of water at these low setpoints. The vapor-recovery setpoint can be as low as one-half inch of water, with a proportional band similar to that for blanketing.

Pilot-operated systems are better when the allowable change in controlled pressure is small, or if flow capacities are large. They are also the choice if the body size of the regulator is larger than two inches. Generally, pilot-operated systems are the best choice with large tanks, and where accuracy is of prime importance. On the down side, pilot-operated systems are more complicated.

Many times a continuous purge may be desired. This may be used to keep vaporized product levels to a minimum. Options like this require a flow rate device to be installed that will monitor the flow. Other options include gauges, shutoff valves, and pre-fabricated assemblies are also available. Figure 4 details a pre-fabricated blanketing system.

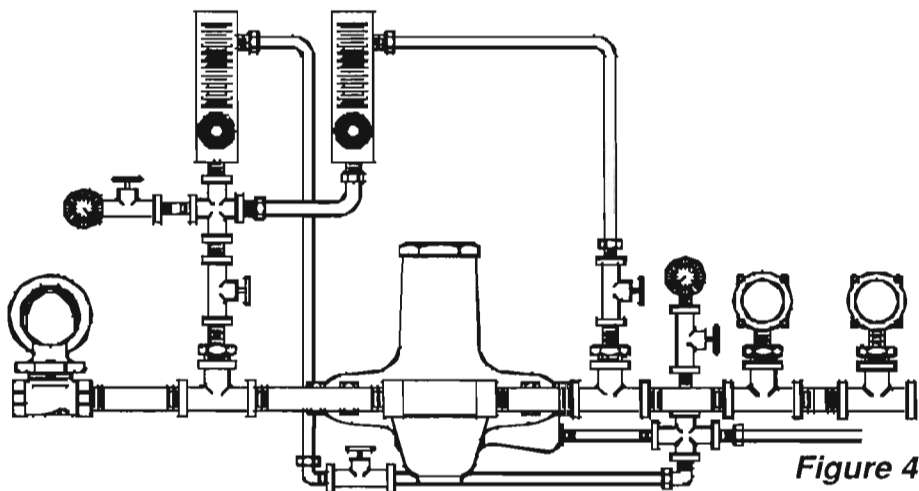


Figure 4

Flow rates for gas blanketing and vapor-recovery systems can be determined using procedures established in the American Petroleum Institute (API) Standard 2000, "venting Atmospheric and Low Pressure Storage Tanks." Information regarding capacities and sizing of regulators is available from vendors of these systems.

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ISA Sarnia Section “Annual Awards Dinner”

MAY 27, 1996

Cocktails 6:00 p.m.

Dinner 7:00 p.m.

THEME

Murder Mystery Evening

LOCATION

Lambton Shrine Club
940 Confederation St., Sarnia

MENU

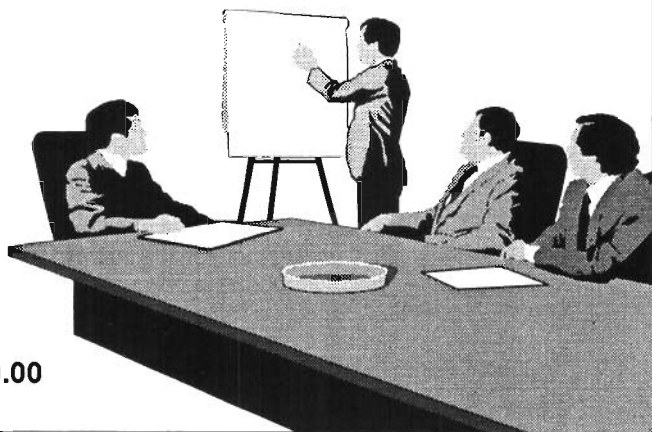
Hot & Cold Appetizers, Complimentary White & Red Wine
Seafood Salad, Country Vegetable Soup
Baby Carrots, Spring Peas with Onions, Roasted Potatoes
Tender Prime Rib
Strawberry Shortcake with Ice Cream

Entry Deadline was May 9th, 1996

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ISA Sarnia Section March Dinner Meeting Highlights

The March Dinner Meeting was held at the Lambton Shrine Club with over 40 members and guests in attendance, who enjoyed a roast pork dinner with all the trimmings.

Malcolm Boyd, our guest speaker, provided an informative address on the topic of Enhanced 911 Emergency Service. Malcolm provided the history behind this initiative and laced his message with comic relief. All in all, it was an interesting presentation and is a good example of positive results being attained when all levels of government work together.

It is that time of year again where we need volunteers to serve on our executive. Our president requested that members put their names forward to any current executive member. Don't wait to be asked. Do not hesitate as we need "you" now!

Mike Murray called on Jim Lomax to discuss the planned workshop to be held April 27-28 at the CAPT Centre. An important agenda item will be the election of a new DVP.

Randy Dennie indicated that our participation and displays during Engineering Week at Lambton Mall needs to be improved. Randy stated that he was impressed with the response so far re: 2nd Annual ISA Golf Tournament to be held June 14th, 1996.

Upcoming Meetings:

May 27, 1996

Awards Dinner
Murder Mystery Evening

September 30, 1996

Next General Meeting
Details in Summer Annunciator

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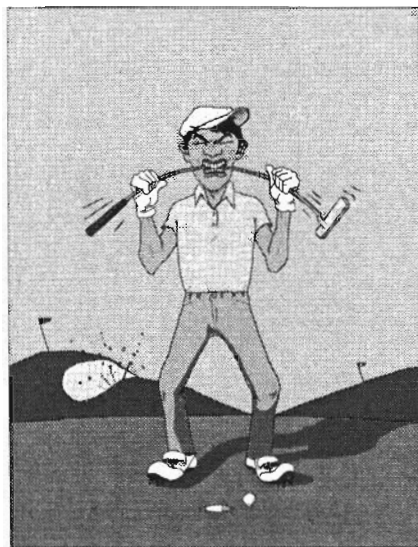
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- HEM Data Corporation PC-Based Testing, Analysis & Control Snap-Master™ for Microsoft ® Windows™
- PSG INC., UPS (Uninterruptible power supplies) by Best Power.

The Second Annual **ISA SARNIA SECTION GOLF TOURNAMENT**

Date: June 14, 1996

Place: St. Clair Parkway

Cost: \$50 / person



Your Executive wishes to provide a fun day for all our members and potential members with a golf tournament. It will be an open invitational and our objective is to have everyone enjoy themselves whether they happen to be serious or simply a once a year golfer. The tournament will include green fees, dinner and prizes. Start lining up your team partners. More details will be forth coming as we are in the preliminary planning stage. If you have had experience in organizing a golf tournament we would appreciate your help and input. Please call Randy Dennie at 337-8251 extension 5817.



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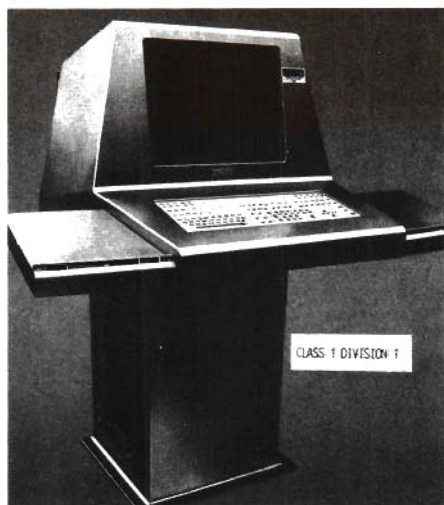
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SARNIA SECTION BBS UPDATE

As of April 15/96 the BBS has received over 1255 calls. There have been 475 messages in the Main Board conference. File downloads are over 1067 and uploads are 31. There have been five new callers since the last issue, which brings the total up to 95. Please leave a (C)omment to the sysop, if you have any suggestions about how to make the BBS more useful.

The BBS phone number is (519) 541-0427.

Clark Development, who created the BBS software we use has announced the creation of new BBS software. Project Genesis is the working name for our new graphical client/server product. It is designed for maximum connectivity and client platforms. Some of the key features of this new product include: - Support for the most popular operating systems such as Windows NT, Windows 95, and Windows 3.1, Designed to support multiple nodes on each machine, A system can comprise multiple PCs to facilitate distributed workload, Easily expanded to support additional port types and user defined applications. The separation of client and server lets you do more with the system because some of the "system smarts" is put into the client. Using the Genesis platform and its cross-platform capabilities is key to thriving in a heterogeneous communications market.

This will be much easier for our callers to use with mouse point and click operation. Beta release is scheduled soon.

FIDO NET

Our BBS is a member of Fido net. What is FidoNet? FidoNet is a loose confederation of bulletin board systems which stretches around the entire world. Each BBS belongs to a local NETWORK. Each Network handles its own operations more or less independently of other networks in the world. Each Network belongs to a larger REGION, and each Region belongs to a ZONE. A ZONE is as large as a continent. Zone 1 is North America. A Region can be part of a continent, or an individual country. The Regions in North America are divided geographically and often cross the US-Canadian border.

NetMail IS FidoNet. NetMail is why FidoNet was started in the first place. The whole idea was to send messages back and forth, in the dead of night, from one computer to another. At Midnight the telephone costs are at their cheapest. Even with slow modems you can transmit a fair sized letter in less than a minute. Because every FidoNet BBS has an address, you can send NetMail directly to that board. Your BBS calls another BBS long distance, transmits the mail packet, and hangs up. Neat, fast, easy! Your electronic letter is just like a real one. It is to a specific person, and only that person will probably see it.

What is EchoMail? It's NetMail with a few differences. The technology is (pretty much) the same. But this time your messages are related to a single subject and placed in a subject-message area on your BBS along with lots of other people's messages. All the messages on this subject are then bundled up and sent out of your BBS to a HUB which bundles your messages with others entered on other BBS systems in the area and re-transmits all these messages to another HUB, which then reverses the process. Eventually all the messages on a given topic are transmitted (echoed) to ALL the BBS systems that carry this topic on their own boards. Someone on one of those other BBS systems may choose to answer your message. Eventually you, and every other BBS, will receive this answer. Although it may be addressed to you, everyone else will see it. These messages are public (not private) and they are seen by everyone. This is sort of like extending a conversation on a given topic all across the world so everyone can participate, a huge party line.

The "BackBone" is a series of approximately 800 echo conferences that are carried all over North America. The file that lists these echoes is usually called FIDONET.NA (North America). See the bulletin on our BBS. We currently carry the Windows 95, MS Word, MS Excel and Autocad conferences.

Please review the "Backbone" conference list and let me know if there are more conferences that you would like to read or participate in. There are many general interest and hobby related conferences as well as computer related.

Brian Smith

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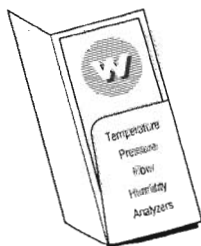
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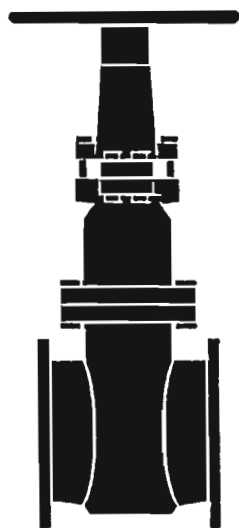
Meeting Dates

MEMBERSHIP DINNER MEETINGS

Date	Place
September 25, 1995	Lambton Shrine Club
November 27, 1995	"
January 29, 1996	"
March 25, 1996	"
May 27, 1996	"

EXECUTIVE MEETINGS

Date	Time	Place
July 17, 1995	7:00 p.m.	Fisher-Rosemount
September 11, 1995	"	"
November 6, 1995	"	"
January 8, 1996	"	"
March 4, 1996	"	"
May 6, 1996	"	"
June 17, 1996	TURNOVER MEETING	



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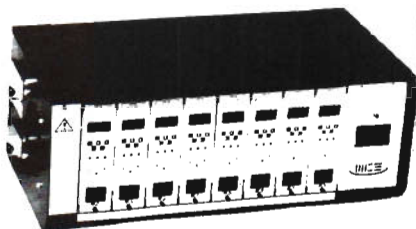
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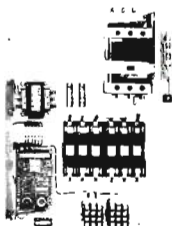
1 x 1 7/8" 32nd DIN
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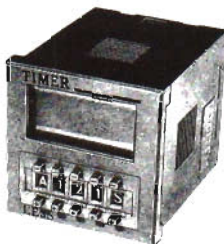
MULTIZONE CONTROLLERS



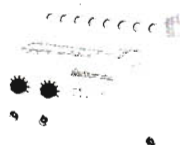
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TIMERS



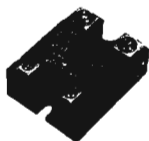
SCALING
COUNTER/TIMER



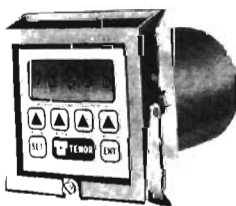
MOTOR CONTROLS



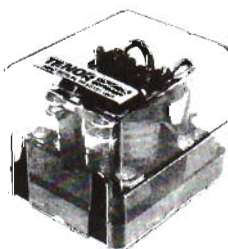
SOFT START/SHORT STOP
(5 TO 850 HP 600 VOLTS)



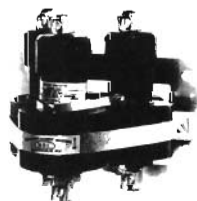
SOLID STATE RELAY
(SINGLE/THREE PHASE)



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The SPEC (Swagelok Products Electronic Communication) System is a computerized information system consisting of a number of data files and application modules. These form the foundation for a relational data base, which is specifically designed for products from the Swagelok Companies. The SPEC System contains information on over 8,400 products, and is available for DOS computers running in the WINDOWS™ environment. The application can be used by a single user, as well as in a network environment. The SPEC System is designed to be of help to the system designer and user of fluid system components. Detailed information can be obtained from any representative of your local distributor of the Swagelok Companies, **HURON VALVE & FITTING LTD.**

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New Rosemount Temperature Transmitters accept inputs from resistance temperature detectors (RTDs), thermocouples, ohms, and millivolt sources. The Model 3144 is a single sensor input transmitter. The Model 3244MV can simultaneously accept any combination of two sensor inputs, including thermocouples and 3-wire RTDs. Both transmitters use the HART® communication protocol.

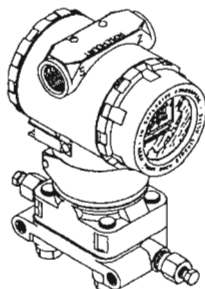
United Electric

United Electric Controls Co.'s new Flush Mount Pressure Switch eliminates the "dead space" between sensor and media, thus reducing clogged lines and downtime. UE's flush mounted welded 316L stainless steel sensor provides direct-acting, fast and accurate response. A single, less cumbersome unit makes it a highly reliable, cost efficient alternative to a traditional diaphragm seal that is prone to degradation and calibration shifts due to temperature effects and leakage. Advanced materials and construction make them an ideal solution for applications with viscous corrosive media.

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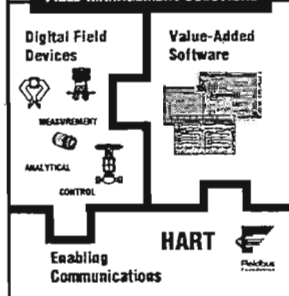
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The regular three month contract cost is \$20/month minimum for 30 hours plus one time \$20 connect fee, which is \$80. ISA Members ONLY pay \$10/month minimum for 10 hours plus one time \$10 connect fee, for a total of \$40. Additional 3 months cost \$30. Additional hours cost \$0.50.

Once you have Internet access, leave me a message at: bsmith@ebtech.net and check out my home page listed under Customer Pages or: <http://www2.ebtech.net/~bsmith>

There are links to other measurement and control Web sites plus a list of Manufacturer / Supplier Web sites, that I know of. Please let me know of any others that are not listed.

The Sarnia Section Home Page can be found at: <http://www2.ebtech.net/~bsmith/isasarni.html>

10 GOOD REASONS TO STOP AVOIDING THE INTERNET

1. ***It's Easy to use.*** The colourful, goof-proof, point-and-click ease of today's computer software can be mastered in under an hour by anyone between the ages of five and 95.
2. ***It's Inexpensive.*** A good used computer with a modem and Internet software can be acquired for under \$1,000. A flat rate connection from a service provider is between \$2 and \$50 per month, depending on the level of service and
3. ***It's Useful.*** A friend recently suffered a frightening seizure. Local Doctors had few answers. The Net had many. By typing "epilepsy" in a search engine screen a list of support groups and other information sources appeared.
4. ***It's Immediate.*** Type a quick note to your friend in Auckland and your daughter attending university in Halifax. Press one key. Zip. In minutes, they can read your words from their "electronic mailboxes".
5. ***It's educational.*** My son's Grade Three class is studying whales this month and his teacher put out a call for information. I typed "whale" into a search engine and in no more than three seconds it found 1,016 references., including "Boston Harbour Whale Watch" and "Killer the Killer Whale".
6. ***It's democratic.*** The Pentagon may have launched the Net, but now it belongs to everyone. It's the ultimate global public utility.
7. ***It's connective.*** I get e-mail weekly, sometimes daily. The Internet has the potential to connect everybody to everybody.
8. ***It's a supportive "community".*** As of last December, there were more than 75 health-related Internet support groups for AIDS patients, heart attack victims, Alzheimer's caregivers, even people who have been hit with lightning. For the sick, disabled, elderly and the lonely, the Internet is an open road that leads away from isolation and fear.
9. ***It's a medium of reading and writing.*** Until we are able to send video signals through the Net - and we soon will - it's mainly a medium of words, so Internetting helps make you a better writer and reader.
10. ***It's fun.*** Reason enough!

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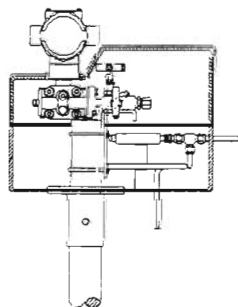
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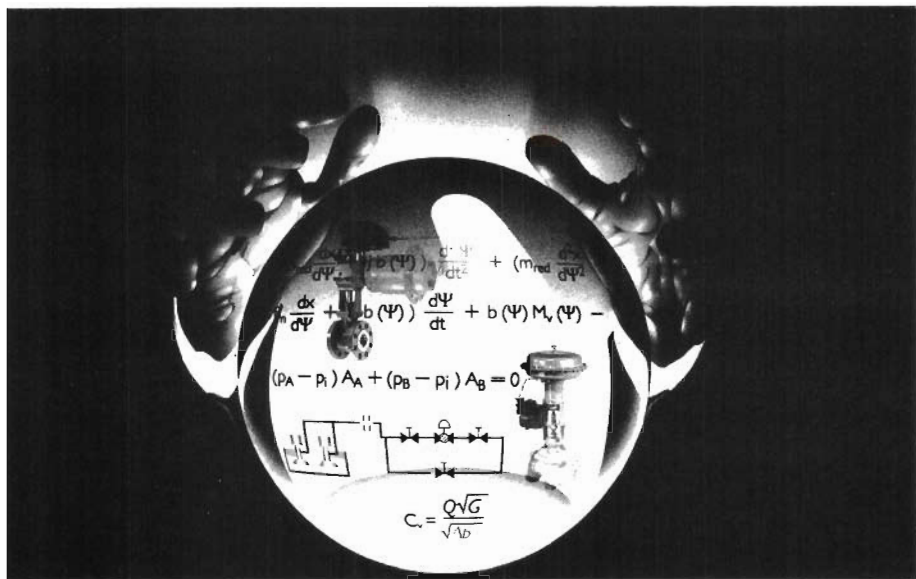


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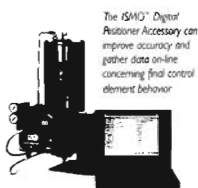
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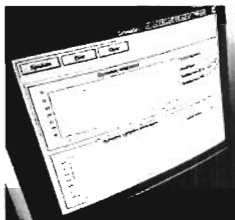
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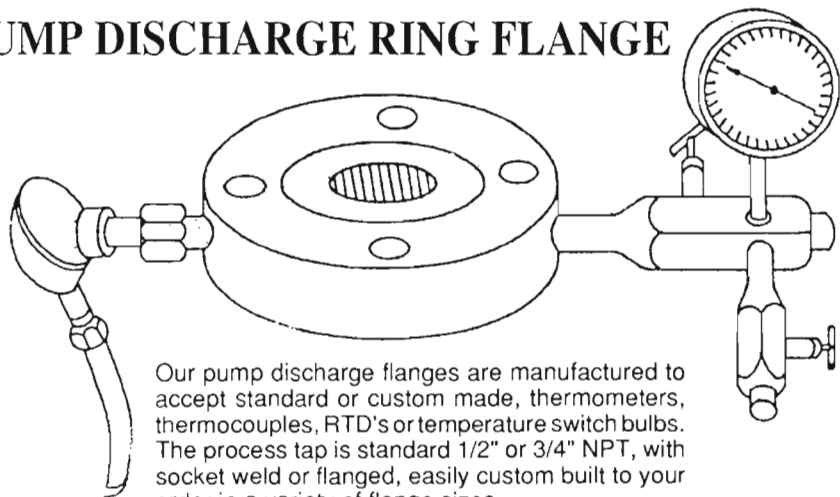
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1

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2

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3

Signature _____

Date _____

5

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Special Note Regarding Transfer of International Funds

Credit Card Payment is preferred; checks with proper MICR bank encoding must be drawn on your bank's correspondent NY or other US bank. Amount payable to ISA must include any bank or other processing charges.

- ☐ Wire Transfer — Add \$5.00 US for processing. Send to ISA Account #1126294, Central Carolina Bank, ABA053100465. Transfer must show applicant's name and address.
- ☐ UNESCO Coupons ☐ Money Order — Add \$5.00 US for processing.

Mail completed form and payment to: Instrument Society of America
Member & Customer Services
PO Box 3561
Durham, North Carolina 27702
USA

If paying by credit card, fax to: (919) 549-8288.

Division Enrollment — Also enroll me at \$5.00 each in the Divisions checked below. To join Divisions, you must also enroll as a regular or student member.

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Automation & Technology Divisions

- ☐ (A) Analysis*
- ☐ (C) Robotics & Expert Systems
- ☐ (D) Computer Technology*
- ☐ (E) Open Systems Interconnection
- ☐ (H) Process Measurement & Control*
- ☐ (I) Maintenance
- ☐ (J) Test Measurement*
- ☐ (M) Automatic Control Systems*
- ☐ (N) Telemetry & Communications
- ☐ (P) Electro-optics
- ☐ (W) Management*

Industries & Sciences Divisions

- ☐ (B) Aerospace Industries*
- ☐ (F) Mining & Metals
- ☐ (G) Chemical & Petroleum Industries*
- ☐ (K) Construction and Design*
- ☐ (L) Pulp & Paper Industry*
- ☐ (O) Power Industry*
- ☐ (R) Food & Pharmaceutical Industries*
- ☐ (T) Textile Industry
- ☐ (U) Automotive & Vehicular
- ☐ (X) Water & Wastewater Industries
- ☐ (Y) Glass & Ceramics Industries
- ☐ (Z) Marketing & Sales*

* Students are entitled to one free membership each in the Automation & Technology and Industries & Sciences Divisions.

Please choose and mark from the asterisked selections.

USERS DIRECTORY

This index lists manufacturers and trade-names alphabetically and enables users to determine the local representative for a particular manufacturer or product.

Manufacturer / Tradename

3 P
3-D
3M Circuit Tracer Kit
A. Kruss Optronix
A.H. Emery
A.S.I.
A.W. Sperry
Accutech
Accutron Heat Tracing
Acme Flo
ACR Systems
Acromag
Acrotech
Action Instruments
Action Instruments
Action Instruments
Advance Products Spray Shields
AEMC
AFE
AGI
AGM Electronics Inc.
All O2 Sensors
Air Flow
Air Monitor Corp.
Airscon Environment Technologies
Al-kon
Alltemp Sensors
Alnor
Alnor Instruments
Altek
Altek
American
Ametek
Ametek
Ametek
Ametek - Analyzers
Ametek - Mansfield & Green
Ametek - PMT
Ametek - U.S. Gauge
Ametek Gauges
Amot
Amprobe
AMS Analytical Systems
Analogic
Anarad
Anderson Greenwood
Annubar/DSC
APACS
API Meters
Apollo
Appalachian Controls
Applied Automation
Ari
Arjay
Armatek
Armtec Industries
ARO
ASCO
ASCO
ASCO
ASCO
ASCO
Asco/Joucomatic
Ascolectric
Ashcroft

Local Sales Representative

Romatec
Alpha Controls & Instrumentation
Transcat
SSCAN Technologies
Syber Systems Inc.
Westburne Lytle
Transcat
Brian Controls
Cantrons
Summit Controls Ltd.
Alpha Controls & Instrumentation
Willer Engineering
Transcat
Cambridge Controls
Heaters Controls & Sensors Ltd.
Ovantium Sales
Sarnia Piping Specialties
Transcat
Axiom Technologies Ltd.
Cantrons
Vermeer Engineering
Vermeer Engineering
Transcat
Westech Industrial Ltd.
SSCAN Technologies
Summit Controls Ltd.
TubeTech
Baker Instruments Ltd.
Transcat
Alpha Controls & Instrumentation
Transcat
Axiom Technologies Ltd.
Brian Controls
SSCAN Technologies
Transcat
Westech Industrial Ltd.
Brian Controls
Brian Controls
Brian Controls
Hardie Industrial Services Inc.
Mentec Sarnia Ltd.
Transcat
Vermeer Engineering
Transcat
Vermeer Engineering
Cantech Controls
Flovial Equipment Ltd.
Moore Products Co. (Canada) Inc.
Lisle-Matrix Ltd.
Romatec
Cantrons
Westech Industrial Ltd.
Alpha Controls & Instrumentation
TubeTech
Armatek Controls
Bestobell Canada
Mentec Sarnia Ltd.
Northern Abcor
Conval Equipment
Summit Controls Ltd.
TubeTech
Westburne Lytle
Northern Abcor
Flovial Equipment Ltd.
Romatec

Manufacturer / Tradename

Ashcroft
Ashcroft-Dresser
Ashford Valve
Astro International
Atkins
Atomac Ball & Check Valves
Auma Electric Actuators
Aurora
Automatic Systems Laboratories
Autotech
Azonix
B & K
B.N.W.
B/W Controls
Babbitt International Inc.
Bacharach
Bacharach - Hand Held Instruments
Backos
Badger Fire Protection
Badger Meter
Bailey
Bailey - Fischer & Porter
Baldwin Environmental Inc.
Balluff
Balston Filters
Barber Engineering
Barber-Colman
Barnant
Barnant
Barton
Baumann
Beamex
Bebco Industries
Beckman Industrial
BEHA
BEI
Bellofram
Bellofram
Berthold
Bestobell Steam, Div. of Richards Ind.
Bestobell Valves
Beta
Beta
Bi-Lok Fittings
Biccotest
Biddle
Bin-Master
Bio-Tek
Bios International
Bios International
BJ Software
BLH Electronics
Blue White
BOILER-GARD
Bourdon-Sedeme (Manobourdon) Gauges
Brandt
Brandt Instruments Inc.
Branson
Brian
Bristol Babcock
Brooklyn Thermometer
Brooks-Meter
BS & B
BTG Inc.
Burkert Contromatic
Burling Instruments
C.E.A. Instruments
Cajon Pipe Fittings
Cal
Canadian Meter
Cancoppas Limited
Cantech Systems

Local Sales Representative

Transcat
Conval Equipment
Bestobell Canada
Detech Industries
Transcat
Sarnia Piping Specialties
G.L. Stebbins
Mentec Sarnia Ltd.
SRP Controls Systems Ltd.
Davis Controls
Transcat
Transcat
Floval Equipment Ltd.
Ovantium Sales
G.L. Stebbins
Willer Engineering
Transcat
Mentec Sarnia Ltd.
SSCAN Technologies
J & M Engineering & Sales Ltd.
Tubetech Ltd.
Tubetech Ltd.
Novatech
Davis Controls
Sarnia Piping Specialties
Ovantium Sales
Davis Controls
Heaters Controls & Sensors Ltd.
Transcat
Armatek Controls
Lakeside Process Controls
Transcat
Cantrols
Transcat
Transcat
Willer Engineering
Conval Equipment
Romatec
Westech Industrial Ltd.
Bestobell Canada
Bestobell Canada
Armatek Controls
Transcat
Sarnia Piping Specialties
Transcat
Transcat
Regional Process Equipment
Transcat
Brian Controls
SSCAN Technologies
Davis Controls
CB Engineering
Brian Controls
Lisle-Matrix Ltd.
Sarnia Piping Specialties
Willer Engineering
SRP Controls Systems Ltd.
Transcat
Brian Controls
Sharp Valve & Instrumentation
Transcat
Mentec Sarnia Ltd.
Romatec
Summit Controls Ltd.
Provincial Controls
Baker Instruments Ltd.
SSCAN Technologies
Huron Valve & Fittings
Davis Controls
G.L. Stebbins
Spec Sarnia Limited
Cantech Controls

Manufacturer / Tradename

Cash-Acme
Cashco Canada
Cashco Canada, Inc.
Cel Instruments
Cellex
Cellex
Celtek Electronics
Cemco
Century Instrument
Century Valve
Cerabar
Cerberus Pyrotronics
Chandler
Chatam Controls
Checkpoint Systems
Chem-Tec
Chemline
Chemtrol
Chessell Recorders / Controllers
Clif Mock
Colder
Computer Keyboard Systems (CKS)
Con-Tek
Conant Valves
Conders
Consolidated
Consolidated Controls
Continental Disc Corporation
Control Instruments Corp.
Control Microsystems
Controlair Inc.
Controlair Inc.
Controlotron
Controls International Inc.
Cooper Instruments
Cox
Crowcon
CSI - Microloggers
Custom Control Sensors
Cybex
D.E.P. Industries
Dahl
Danfoss
Danfoss Mfg. Co. Ltd. - Denmark
Daniel Industries
Data Industrial Corporation
Data Precision
Datel
Davis Controls Ltd.
Davis Instruments
Defelsko
Delavan
Delphian
Delta-M
Deltabar
Deltapilot
Detector Electronics (Dettronics)
Devar
DewPro
Dewrance
DeZurik
DGH
Dianachart
Dickson
Digitec
Dillon
Dopak
Dover Gas Technologies
Dow Plastic Lined Piping Products
Drager
Drainall
Druck

Local Sales Representative

Westburne Lytle
Provincial Controls
Cambridge Controls
SSCAN Technologies
Armatek Controls
Spec Sarnia Limited
Cantrils
Cantech Controls
Brian Controls
Sarnia Piping Specialties
Brian Controls
Endress + Hauser
SSCAN Technologies
Transcat
Heaters Controls & Sensors Ltd.
Cantech Controls
Brian Controls
Floval Equipment Ltd.
U & I Supply
Willer Engineering
Westburne Lytle
Davis Controls
CB Engineering
Lakeside Process Controls
Provincial Controls
Transcat
Contro Valve Inc.
Transcat
Conval Equipment
Willer Engineering
Brian Controls
Cambridge Controls
Northern Abcor
Westech Industrial Ltd.
Northern Abcor
Transcat
Brian Controls
Regional Process Equipment
Campbell Scientific (Canada) Corp.
Willer Engineering
CB Engineering
Summit Controls Ltd.
Armatek Controls
Davis Controls
Lisle-Metrix Ltd.
Cantrils
Cambridge Controls
Transcat
Transcat
Spec Sarnia Limited
Transcat
Transcat
Armatek Controls
Romatec
Brian Controls
Endress + Hauser
Endress + Hauser
CB Engineering
Cantech Controls
Endress + Hauser
Contro Valve Inc.
Floval Equipment Ltd.
Alpha Controls & Instrumentation
Alpha Controls & Instrumentation
Transcat
Brian Controls
Brian Controls
Westburne Lytle
Veronics
Sarnia Piping Specialties
SSCAN Technologies
Mentec Sarnia Ltd.
Transcat

Manufacturer / Tradename

Druck Incorporated
DSP Technology
Durakool
Duro
Duro-Sense
Dwyer
Dwyer
Dwyer
Dwyer
Dylon
Dynapar
Dynapar
Dynasonics
Dynatech Nevada
E-T-A Control Instruments
Eagle Signal
Eagle Signal
Eaton IDT
ECD
ECD
Echotel
ECS Control Techniques
EG & G Flow Technology Inc.
EG&G Moisture & Humidity
EIT Inc.
El-O-Matic
Elcon Instruments Inc.
Electromatic
Electromatic
Elremco Timers - England
Elsag Bailey
EMCO
Emission S.A.
Encoder
Encon Safety Products
Endress + Hauser
Enertronic Shocks
Enertronic
Engineered Valves International (E.V.I.)
Enraf Inc.
Envirotronics
Environmental Products
Environmental Technologies Group Inc.
Environnement S.A.
Epic Samplers
Erdco
Erhard Valves - Germany
ETC
Euchner
Eurotherm
Exergen
Exotherm
Expo Safety Systems
F.B. Leopold - USA
F.W. Bell
F.W. Murphy
Fabco Air
Fairchild
Farris
FCI
Fieldview
Fike
Fike Canada Inc.
Fisher Controls
Fisher Research
Fisher Service
Fisher-Rosemount Systems
Fisons Instruments
Flow Meter Co. - England
Flow-Lin Corporation
Flowline
Flowmetrics Inc.

Local Sales Representative

SRP Controls Systems Ltd.
SRP Controls Systems Ltd.
Davis Controls
Brian Controls
Transcat
Baker Instruments Ltd.
Cantech Controls
Davis Controls
Transcat
Mentec Sarnia Ltd.
Davis Controls
J & M Engineering & Sales Ltd.
Brian Controls
SSCAN Technologies
SSCAN Technologies
Davis Controls
J & M Engineering & Sales Ltd.
Cantech Controls
Novatech
Transcat
Provincial Controls
Vermeer Engineering
CB Engineering
Vermeer Engineering
Vermeer Engineering
Westburne Lytle
SRP Controls Systems Ltd.
Davis Controls
Heaters Controls & Sensors Ltd.
Lisle-Matrix Ltd.
Tubetech Ltd.
Davis Controls
SSCAN Technologies
Axiom Technologies Ltd.
SSCAN Technologies
Regional Process Equipment
Provincial Controls
Axiom Technologies Ltd.
Westburne Lytle
Willer Engineering
Brian Controls
Spec Sarnia Limited
Novatech
SSCAN Technologies
Spec Sarnia Limited
Bestobell Canada
Lisle-Matrix Ltd.
Transcat
Davis Controls
Heaters Controls & Sensors Ltd.
Heaters Controls & Sensors Ltd.
Heaters Controls & Sensors Ltd.
Syber Systems Inc.
Lisle-Matrix Ltd.
Transcat
Cantech Controls
Davis Controls
Regional Process Equipment
Floval Equipment Ltd.
Willer Engineering
Lakeside Process Controls
Sharp Valve & Instrumentation
Brian Controls
Lakeside Process Controls
Transcat
Lakeside Process Controls
Lakeside Process Controls
Westech Industrial Ltd.
Lisle-Matrix Ltd.
G.L. Stebbins
Brian Controls
SRP Controls Systems Ltd.

Manufacturer / Tradename

Fluid Data/Amcor
Fluidic
Fluke
Foxboro
Foxboro - Measurement, Instruments, Parts
Foxboro Analytical Group
FUJI
Fujikin of America Inc.
Fulier
G.C. Industries
G.H. Flow
G.W. Dahl
Galtek
Gamma Silometer
Gefran s.p.a.
General Controls
General Eastern
General Metal Works
General Resistance
General Resource (Isomatic Corp.)
Geokon
GGOSCO Engineering
GGOSCO Needle Valves
GGOSCO Valves
GH Flow Automation
GLA Elettronica
Global
GMD Systems
GO Regulators
GO Switch (Proximity)
GP:50 New York Ltd.
GPE
Graham Manufacturing
Gralab
Granucor
GranufLOW
Granumet
Graseby / STI
Great Plains Industries
Greyline Instruments
Guardimark International
H.D. Baumann
Hammel Dahl
Hancock
Hanna Instruments
Hansen Quik Connects
Hartman-Technica
Hartmann & Braun
Hathaway
Hathaway-Wodex
Haws
Haz-Stor
Hedland
Heise
Herasus Sensors
Hermon
Hewlett Packard
Hex Valve
Hiltap Couplers
Hiltacraft
Hitachi
Hitachi - Oscilloscopes
Hoffer Flow Controls - USA
Holaday Industries
Honeywell
Honeywell - Controllers & Recorders
Honeywell - Recorders
Honeywell - Recorders
Horiba
Huntron
Hy-Cal
HydroGuard

Local Sales Representative

Armatek Controls
Brian Controls
Transcat
Ovantium Sales
Provincial Controls
Vermeer Engineering
Heaters Controls & Sensors Ltd.
Ovantium Sales
Syber Systems Inc.
Brian Controls
Cantech Controls
Armatek Controls
Romatec
Endress + Hauser
SRP Controls Systems Ltd.
Summit Controls Ltd.
Willer Engineering
SSCAN Technologies
Transcat
G.L. Stebbins
Campbell Scientific (Canada) Corp.
Provincial Controls
Westburne Lytle
Hardie Industrial Services Inc.
Ovantium Sales
SRP Controls Systems Ltd.
Transcat
SSCAN Technologies
Sarnia Piping Specialties
Lakeside Process Control
SRP Controls Systems Ltd.
Sharp Valve & Instrumentation
Lakeside Process Controls
Transcat
Endress + Hauser
Endress + Hauser
Endress + Hauser
CB Engineering
Armatek Controls
Controls
SSCAN Technologies
Lakeside Process Controls
Summit Controls Ltd.
Contro Valve Inc.
SSCAN Technologies
Provincial Controls
Transcat
Westech Industrial Ltd.
Armatek Controls
Alpha Controls & Instrumentation
Mentec Sarnia Ltd.
SSCAN Technologies
Brian Controls
Transcat
SRP Controls Systems Ltd.
Spec Sarnia Limited
Transcat
Sharp Valve & Instrumentation
U & I Supply
Syber Systems Inc.
Davis Controls
Transcat
Lisle-Metrix Ltd.
SSCAN Technologies
Davis Controls
Brian Controls
Provincial Controls
Transcat
Alpha Controls & Instrumentation
Transcat
Davis Controls
Endress + Hauser

Manufacturer / Tradename

I.S.T.
IBM Industrial Computers
IC Controls
IDEC
IET
Illinois Instruments
Imi-Cash Valve Inc.
Imperial Eastman
Imperial Eastman
Imperial Eastman Fittings
IMS
Industrial Scientific Corp.
Industrial Sensors
Ingold
Inor
Intelligent Controls Inc.
Intellution
Intempco
Interlink
Interscan
Interscan Corp.
Intertec
Intertec
Ion Track Instrumentation (ITI)
Ionics Instrument Division
Iotron
Ircon
ISI
Isothermal Technology Ltd.
IST
ITT Barton Instruments
ITT Conoflow Regulators & Seals
ITT Engineered Valves
ITT Neo-Dyn Switches
ITT Standards (Engineered Products only)
IVO Industries - USA
J.M. Canty, Inc.
Jacoby Tarbox
Jamesbury
JB Engineering
Jensen
Jerguson Level Gauges
Jofra
Jofra
Johnson Yokogawa
Jordan Controls, Inc.
Joucomatic International
Julius Bauser - Germany
K & M Valve Co.
K-Tek
Kammer Control Valves
Kammer Control Valves
Kane-May
Kates
Kavlico Corp.
Kay Ray/Sensall
Kaye
Kaye Instruments
KDG Mobrey
Keddco Mfg Ltd.
Keller
Kent Meters Inc.
Kenwood USA
Kessler Ellis
Ketema - McCrometer
Ketema - Schutte & Koerting
KF Industries
Kinetrol
Kinetrol Actuators
Kip
Kistler-Morse
Klinger

Local Sales Representative

SSCAN Technologies
CB Engineering
J & M Engineering & Sales Ltd.
Axiom Technologies Ltd.
Transcat
Veronics
G.L. Stebbins
Axiom Technologies Ltd.
U & I Supply
Provincial Controls
Mentec Sarnia Ltd.
SSCAN Technologies
Heaters Controls & Sensors Ltd.
Westech Industrial Ltd.
Alpha Controls & Instrumentation
SRP Controls Systems Ltd.
CB Engineering
Cantech Controls
Vermeer Engineering
Brian Controls
SSCAN Technologies
Northern Abcor
TubeTech
Bestobell Canada
Veronics
Northern Abcor
Willer Engineering
Heaters Controls & Sensors Ltd.
SRP Controls Systems Ltd.
SSCAN Technologies
Armatek Controls
Sarnia Piping Specialties
Romatec
Sarnia Piping Specialties
Northern Abcor
Lisle-Matrix Ltd.
Cambridge Controls
Romatec
Summit Controls Ltd.
Transcat
Transcat
Romatec
Brian Controls
Transcat
CB Engineering
Cambridge Controls
Conval Equipment
Lisle-Matrix Ltd.
Floval Equipment Ltd.
CB Engineering
Controls
Westburne Lytle
Transcat
Westech Industrial Ltd.
SRP Controls Systems Ltd.
Rosemount Instruments
Transcat
CB Engineering
Bestobell Canada
U & I Supply
Campbell Scientific (Canada) Corp.
G.L. Stebbins
Transcat
Brian Controls
Brian Controls
Brian Controls
Mentec Sarnia Ltd.
Provincial Controls
Hardie Industrial Services Inc.
Brian Controls
Ovantum Sales
Davis Controls

Manufacturer / Tradename

KNF Neuberger
Kobold
Koch
Komax
Kotron
Krebs Engineer
Kreyenborg
Krohne
Kruss Optronic
KTM
KTM
Kurz
Kurz
L & J Technologies
LAGCO Flumes - USA
Land
Land - Analyzers
Larad
Laurence
LCI-Luwa
Leader
Leaderline
Leaderline
Lee-Dickens Ltd. - England
Legris
LEOPOLD
Leslie
Lewis
LFE Instruments - USA
LI-COR
Limitorque
Liquid-O-Ring
Liquiphant
LMI
LMI
London Mat Industries
Love
Lucas Nova Sensor
Lumenite Electronic Company
M and Y Valve Services
M point
M-Systems Co. Ltd.
M-Tek
Mac-Weld
Mac-Weld
Mac-Weld
Mac-Weld
Madison
Madison Company
Madur Electronics
Magnetrol
Major
Mamac
Manobourdon
Marsh
Marsh Instruments
Martel
Masoneilan
Max
MCS
MDI
Mead
Meeco Inc.
Mercoid
Meriam Instruments
Mesa Laboratories
Met One
Metrix
Metrix Timers
Metrosonics
Micon
Micro Motion

Local Sales Representative

Transcat
Regional Process Equipment
Romatec
Floval Equipment Ltd.
Provincial Controls
Floval Equipment Ltd.
Mentec Sarnia Ltd.
Moore Products Co. (Canada) Inc.
SSCAN Technologies
Associated Valve
Regional Process Equipment
Brian Controls
Transcat
Sharp Valve & Instrumentation
Lisle-Metrix Ltd.
Transcat
Westech Industrial Ltd.
Syber Systems Inc.
Mentec Sarnia Ltd.
Mentec Sarnia Ltd.
Transcat
Brian Controls
Honeywell
Lisle-Metrix Ltd.
Axiom Technologies Ltd.
Lisle-Metrix Ltd.
Mentec Sarnia Ltd.
Transcat
Lisle-Metrix Ltd.
Campbell Scientific (Canada) Corp.
Sharp Valve & Instrumentation
Mentec Sarnia Ltd.
Endress + Hauser
Novatech
U & I Supply
SSCAN Technologies
Davis Controls
SRP Controls Systems Ltd.
J & M Engineering & Sales Ltd.
Ovantum Sales
Endress + Hauser
SRP Controls Systems Ltd.
Transcat
Armatek Controls
Brian Controls
Heaters Controls & Sensors Ltd.
Northern Abcor
Bestobell Canada
Ovantum Sales
Novatech
Provincial Controls
Alpha Controls & Instrumentation
Floval Equipment Ltd.
Sarnia Piping Specialties
TubeTech
Ovantum Sales
Transcat
Contro Valve Inc.
Willer Engineering
Heaters Controls & Sensors Ltd.
Heaters Controls & Sensors Ltd.
Transcat
Novatech
Davis Controls
Transcat
Armatek Controls
Campbell Scientific (Canada) Corp.
Transcat
Lisle-Metrix Ltd.
Brian Controls
Cantech Controls
Rosemount Instruments

Manufacturer / Tradename

Micronics Ltd.
Micropilot
Mid-West Instrument
Mid-West Instrument
Mikron
Milton Roy - Liquid Metronics Division
Milwaukee
Mini-X Purge Systems
Mini-Z Purge Systems
Mitsubishi
MKS
Mobrey
Modulevel
Monarch
Monitek
Monitor Labs
Monitor Labs
Moore
Moore Industries
Moore Products Pressure Regulators
MST
MTL
MTL IS Barriers
Mueller
Multi-Amp
Multi-Volt
Multicap
Mycro
Myron L
Nassau Instrument
NBS
Neles
Neles-Jamesbury
Neotronics
Neotronics
Neotronics
NGI
Nil-Cor
Nivocompact
Nivosonic
Norac
Norriseal
Norriseal Butterfly Valves
Norstat
Northern Vibrator
Novalynx
Novatech Systems Group
NRC Industries
Numatic Cylinders
Numatic Fittings
Numatics
Numatics Solenoid Valves
Nupro Valves
Nusonics
O'Brien Corporation
Oakton
Ogden
Ogontz
Ohio Semitronics Inc.
Oilgear
Oldham
Oliver Valves
OMNI
Omron
Opsis
Orange Research
Orion
Pacer Industries
Pacific Instrument Inc.
Pacific Scientific
Pamark Manifolds
Panalarm

Local Sales Representative

Veronics
Endress + Hauser
Brian Controls
Hardie Industrial Services Inc.
Transcat
U & I Supply
Floval Equipment Ltd.
Syber Systems Inc.
Syber Systems Inc.
Davis Controls
Transcat
Bestobell Canada
Provincial Controls
Transcat
Willer Engineering
Brian Controls
Romatec
Moore Products Co. (Canada) Inc.
Armatek Controls
Transcat
Brian Controls
Syber Systems Inc.
Provincial Controls
Mentec Sarnia Ltd.
Transcat
Transcat
Endress + Hauser
Moore Products Co. (Canada) Inc.
Transcat
Transcat
Transcat
Summit Controls Ltd.
Summit Controls Ltd.
Cantech Controls
Transcat
Westech Industrial Ltd.
Transcat
Contro Valve Inc.
Endress + Hauser
Endress + Hauser
Ovantium Sales
Conval Equipment
Sarnia Piping Specialties
Davis Controls
Floval Equipment Ltd.
Brian Controls
Novatech
SSCAN Technologies
Provincial Controls
Provincial Controls
Axiom Technologies Ltd.
Provincial Controls
Huron Valve & Fittings
Armatek Controls
CB Engineering
Transcat
Heaters Controls & Sensors Ltd.
Cantech Controls
Ovantium Sales
Bestobell Canada
Cantech Controls
Sarnia Piping Specialties
Westech Industrial Ltd.
Axiom Technologies Ltd.
SSCAN Technologies
Provincial Controls
Transcat
Transcat
SRP Controls Systems Ltd.
G.L. Stebbins
Provincial Controls
Cambridge Controls

Manufacturer / Tradename

Panalarm
Panametrics PCI Division
Papailias
Parker
Partlow
Paul Mueller
Pelican
Penberthy
Penberthy Instruments
Penny & Giles
Pepperl + Fuchs - USA
Permacal Gauges
Phipps & Bird
Phoenix Contact
Pick Heaters
PMV
Polysonics Inc.
Polytronics
Porter Instrument Co. - USA
Positive Safety
Powers Process Control
Powers Process Control
Precision Digital
Precision Digital
Precision Digital Corp.
Precision Digital Corporation
Preso Flow Meters
Pribusin
Pribusin Inc.
Prolevel
Promac
Promac
Promag
Promag
Promass
Proquip
Prosonic
Protimeter
Provincial Instrument Housings
Provov
Prowirl
Proximity Control
Proximity Controls
PTC
PTC
Pulsafeeder
Pyrene Fire Security
Pyromation Inc.
QSDM
QSDM
Quad Tech
Qualimetrics
Quality Control Equipment Company
Quantum
R.M. Young
R.P. Adams
Ralston
Ralston
Ramsey Canada
Ray
Raytek
Raytek
Raytek
Raytek/UE
RdF
REBS
REK RKC
Research Control Valves
Resistoflex
REXA Corp.
Rexcon
Rexroth

Local Sales Representative

Willer Engineering
Veronics
Mentec Sarnia Ltd.
TubeTech
Northern Abcor
Mentec Sarnia Ltd.
Transcat
Brian Controls
Hardie Industrial Services Inc.
Cantech Controls
Lisle-Metrix Ltd.
Provincial Controls
Transcat
Axiom Technologies Ltd.
Sharp Valve & Instrumentation
Regional Process Equipment
SRP Controls Systems Ltd.
Transcat
Lisle-Metrix Ltd.
SSCAN Technologies
Conval Equipment
Heaters Controls & Sensors Ltd.
Alpha Controls & Instrumentation
Armatek Controls
Ovantum Sales
Cambridge Controls
J & M Engineering & Sales Ltd.
Provincial Controls
Novatech
Endress + Hauser
Armatek Controls
Transcat
Endress + Hauser
Westburne Lytle
Endress + Hauser
Spec Sarnia Limited
Endress + Hauser
Alpha Controls & Instrumentation
Provincial Controls
Lakeside Process Controls
Endress + Hauser
Provincial Controls
Bestobell Canada
Brian Controls
Transcat
Romatec
SSCAN Technologies
Northern Abcor
Alpha Controls & Instrumentation
Willer Engineering
Transcat
Transcat
Ovantum Sales
Transcat
Campbell Scientific (Canada) Corp.
Mentec Sarnia Ltd.
Axiom Technologies Ltd.
Transcat
Ovantum Sales
Brian Controls
Heaters Controls & Sensors Ltd.
Northern Abcor
Transcat
Mentec Sarnia Ltd.
Willer Engineering
Campbell Scientific (Canada) Corp.
Heaters Controls & Sensors Ltd.
Lakeside Process Control
Sharp Valve & Instrumentation
Controls
Axiom Technologies Ltd.
Mentec Sarnia Ltd.

Manufacturer / Tradename

Rezplast
RGS
RIMCO - Raingauges
RIS
Roberts Mfg. Inc.
Robertshaw
Rochester Instrument Systems
Rohrbach Cosasco Systems
Roper Pump
Rosemount
Rosemount Analytical
Rosemount Analytical
Rosemount Combustion Control
Rosemount RS3 Systems
Rotomation
Rotronic
Royce Instruments
Ruffneck
Ruskin (Control Dampers)
Rustrak
S.P.S. Instrument Services
Samson
Sarasota Instrumentation
Schlumberger/Neptune Flow Meters
Schrader Bellows
Scientific Linings & Coatings
Scully Electronic Systems Inc.
Seacor
Sealed Unit Parts
Seametrics Inc.
Senior Flexonics
Sensall
Sensidyne
Sensidyne Gas Monitors
Sensortech Systems Inc.
Serge-Baril
Servomex
Setra
Sfere
Shan Rod Inc.
Shand & Jurs
Shimpo
Sieger
Siemens
Siemens Process Analyzers
Sierra Monitor
Sierra Monitor
Signet Scientific
Signet Scientific
Sigrist-Photometer Co. - Switzerland
Silometer
Simpson
Sinkel
Skinner
Smar International
Smartline
Smartline
Sno-Trik
Solartron
Soliphant
Solomat
South-West Meters
Sparling
SPM
SPS Fibre Form Enclosures
SSI Equipment
Stahl
Statham
STI
Stonel
Strahman
Sugino

Local Sales Representative

Mentec Sarnia Ltd.
Syber Systems Inc.
Campbell Scientific (Canada) Corp.
Transcat
G.L. Stebbins
Spec Sarnia Limited
Sharp Valve & Instrumentation
Armatek Controls
U & I Supply
Rosemount Instruments
Rosemount Instruments
Transcat
Romatec
Lakeside Process Control
Axiom Technologies Ltd.
Alpha Controls & Instrumentation
Spec Sarnia Limited
Mentec Sarnia Ltd.
G.L. Stebbins
Transcat
Sarnia Piping Specialties
Ovantum Sales
SRP Controls Systems Ltd.
Sarnia Piping Specialties
TubeTech
Cantech Controls
SRP Controls Systems Ltd.
Transcat
Transcat
Veronics
Regional Process Equipment
Alpha Controls & Instrumentation
Novatech
Transcat
Novatech
Mentec Sarnia Ltd.
Novatech
Alpha Controls & Instrumentation
Regional Process Equipment
Floval Equipment Ltd.
Sharp Valve & Instrumentation
Transcat
Westech Industrial Ltd.
Alpha Controls & Instrumentation
Willer Engineering
Controls
Transcat
Brian Controls
Hardie Industrial Services Inc.
Lisle-Metrix Ltd.
Endress + Hauser
Transcat
SSCAN Technologies
Cantech Controls
G.L. Stebbins
Brian Controls
Honeywell
Huron Valve & Fittings
Westech Industrial Ltd.
Endress + Hauser
Transcat
Sarnia Piping Specialties
Brian Controls
Transcat
Sarnia Piping Specialties
Floval Equipment Ltd.
Alpha Controls & Instrumentation
Sarnia Piping Specialties
Axiom Technologies Ltd.
Regional Process Equipment
Cantech Controls
Axiom Technologies Ltd.

Manufacturer / Tradename

Swagelok Tube Fittings
Syscon
Systematix
T.B. Woods
TA Instruments
Tapecoat Canada
Tate-Andale
Taylor Hand Actuated Pressure Calibrator
TBI-Bailey
TBV
TDC-3000
Techmation
Techne
Technipower
Tegam
Tegam
Tektronix
Tel-Tru
Tel-Tru
Tel-Tru Thermometers
Teledyne Analytical
Teledyne Combustion Efficiency Analyzer
Telegan
Tempco
Tenor Industrial Control
Testo Inc.
Tess-Com Inc.
Testoterm
Texas Electronics - Raingauges
Texas Sampling Inc.
The Optikon Corp.
Theben
Thermax
Thermo Electric
Thermo Electric - Calibrators
Thermo Environmental Instruments
Thermo Kinetics
Thermon
Thermox
Thunder
TIF
Time Electronics
TLV
Tomoe Valves
Tour & Anderson
Tower-Gard
Trademark Manufacturing Inc.
Transmation
Transmation
Transtector Systems
Trerice
Tricentric
Tripp-Lite
Triton
TSI
Turbo Instruments
Tytronics Inc.
U.S. Gauge
U.S. Gauge
Unimeasure Inc.
United Electric
United Electric Controls (Canada) Ltd.
United Sciences Inc.
Unitherm
Unival
Universal
Universal Analyzers
Universal Enterprises
Unomat
Unomat Inc.
Vaccon Vacuum
Vaisala

Local Sales Representative

Huron Valve & Fittings
Heaters Controls & Sensors Ltd.
Willer Engineering
Axiom Technologies Ltd.
Westech Industrial Ltd.
Sarnia Piping Specialties
Mentec Sarnia Ltd.
Transcat
Elsag Bailey
Romatec
Honeywell
Lakeside Process Control
Transcat
Transcat
Brian Controls
Transcat
Transcat
Brian Controls
Transcat
Hardie Industrial Services Inc.
Armatek Controls
Transcat
Bestobell Canada
Heaters Controls & Sensors Ltd.
Heaters Controls & Sensors Ltd.
Baker Instruments Ltd.
Northern Abcor
Transcat
Campbell Scientific (Canada) Corp.
Bestobell Canada
SSCAN Technologies
Davis Controls
Brian Controls
Armatek Controls
Transcat
SSCAN Technologies
Provincial Controls
Spec Sarnia Limited
Willer Engineering
Scientific Corp. SSCAN Technologies
Transcat
Transcat
TubeTech
Bestobell Canada
Flovat Equipment Ltd.
Lisle-Metrix Ltd.
G.L. Stebbins
Controls
Transcat
Cantech Controls
Mentec Sarnia Ltd.
Westburne Lytle
Transcat
Mentec Sarnia Ltd.
Willer Engineering
Northern Abcor
Novatech
Brian Controls
Transcat
SRP Controls Systems Ltd.
Brian Controls
Cambridge Controls
Willer Engineering
Northern Abcor
Flovat Equipment Ltd.
Alpha Controls & Instrumentation
Willer Engineering
Transcat
Transcat
SRP Controls Systems Ltd.
Provincial Controls
Transcat

Manufacturer / Tradename

Vaisala - RH, Barometric Pressure
Valhalla
Valtek Controls
Valvtech
Varec
Vector-Vid
Veeder-Root
Veeder-Root
Velan
Veriflo
Veris
Versa
Versatile Instruments
Versatile Measuring Instruments Inc.
Viatran
Vista Scientific
Vitec
Viz
Vortisand
Wabco
Wahl
Walchem Corp.
Walker Scientific
Wallace & Tiernan
Wallace & Tiernan - Pressure Calibrators
Warren Jones Engineering - England
Warrick
Waterman Industries - USA
Watson McDaniel
Watts
Watts
Weed
Weed Instrument
Weksler Instruments
Westech
Westinghouse Enotec
Westlock Controls
Wey Valve
Whesso Varec
Whipps Inc. - USA
Whitey Valves
Whitman
Whittaker Electronics
Wika
Wika Instruments
Wilkerson
Wilkerson Instrument Co. Ltd.
Williams Instrument Co.
Williamson
Winters
Winters Gauges
Wood's
Woodhead
Worcester
Worcester Controls
WSA
Xebec
Xomox
Y-Z Industries
Yarway
Yokogawa
Young Environmental
Zook
Zullig

Local Sales Representative

Campbell Scientific (Canada) Corp.
Transcat
Cantrols
Regional Process Equipment
Westech Industrial Ltd.
Transcat
Davis Controls
J & M Engineering & Sales Ltd.
Westburne Lytle
Armatek Controls
Alpha Controls & Instrumentation
Summit Controls Ltd.
Sharp Valve & Instrumentation
SRP Controls Systems Ltd.
Willer Engineering
Transcat
Transcat
Transcat
Mentec Sarnia Ltd.
Mentec Sarnia Ltd.
Bestobell Canada
Cantrols
Transcat
J & M Engineering & Sales Ltd.
Transcat
Lisle-Metrix Ltd.
Davis Controls
Lisle-Metrix Ltd.
G.L. Stebbins
Floval Equipment Ltd.
Mentec Sarnia Ltd.
Cantech Controls
Cantrols
Baker Instruments Ltd.
Westech Industrial Ltd.
Cantrols
Summit Controls Ltd.
Mentec Sarnia Ltd.
Westech Industrial Ltd.
Lisle-Metrix Ltd.
Huron Valve & Fittings
Davis Controls
Cantrols
Sharp Valve & Instrumentation
Northern Abcor
Transcat
J & M Engineering & Sales Ltd.
Willer Engineering
Brian Controls
Floval Equipment Ltd.
Provincial Controls
U & I Supply
Axiom Technologies Ltd.
Floval Equipment Ltd.
U & I Supply
Mentec Sarnia Ltd.
Northern Abcor
Regional Process Equipment
Westech Industrial Ltd.
Mentec Sarnia Ltd.
Transcat
SSCAN Technologies
Brian Controls
Bestobell Canada



Swagelok Co.
Solon, OH 44139 U.S.A.

product release

Swagelok
MS-02-71

SWAGELOK® Closure Tube Fittings eliminate expensive welded closures.

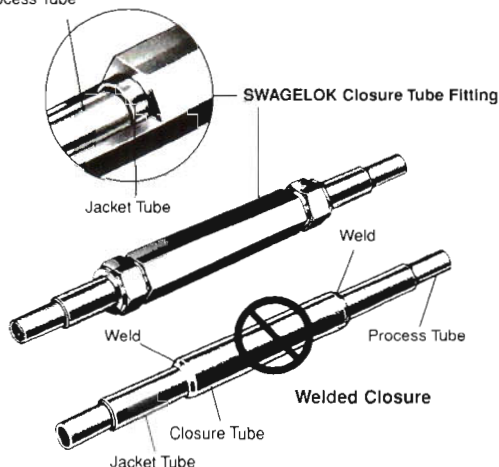
SWAGELOK Closure Tube Fittings significantly reduce the cost of installing co-axial tubing systems used in research and development, semiconductor and other commercial applications that use hazardous or toxic gases.

Co-axial tubing systems require use of a closure over the jacket tube to seal the system after the process tubing has been welded. Typically, the closure tube is welded in place. However, welding a closure tube is difficult, time-consuming and expensive. It also exposes the process tubing to possible damage from weld drop-through, which can result in costly abandonment or refabrication of the process tubing. In contrast, use of a SWAGELOK Closure Tube Fitting to "close-in" the system eliminates the need for welding.

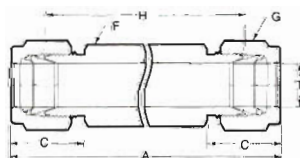
Installation time is reduced with SWAGELOK Tube Fittings since only simple hand tools are needed. The connections can be checked for proper "pull-up" with the SWAGELOK Gap Inspection Gage before pressurizing the system. Consistent leak-free performance is the result of superior design, close manufacturing tolerances, and rigid quality control.

SWAGELOK Tube Fittings for co-axial tubing systems are available for jacket tube sizes of 1/2", 5/8" and 3/4" OD. Material is 316 stainless steel.

Process Tube



Dimensions/Ordering Information



T Tube OD	Ordering Number	A	C	F Hex Flat	G Hex Flat	H
1/2	SS-810-6-0029	5.30	0.86	29/16	7/8	4.50
1/2	SS-810-6-0030	4.30	0.86	13/16	7/8	3.50
5/8	SS-1010-6-0016	4.42	0.86	15/16	1	3.62
3/4	SS-1210-6-0021	6.35	0.86	1 1/16	1 1/8	5.75

All dimensions are in inches, for reference only, subject to change.
A-C dimensions are typical finger-tight.

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Your Local Authorized SWAGELOK Sales and Service Representative:



1-800-265-7575 336-3453
800 CONFEDERATION ST.
P.O. BOX 386 SARNIA, ONT. N7T 7J2

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1947/48	Amby Upfold	1972/73	Everett Maness
1948/49	Ron Chamberlane	1973/74	Stan Thrift
1949/50	Don Livingstone	1974/75	E. A. Comello
1950/51	Amby Upfold	1975/76	Bernard West
1951/52	Ken Goldring	1976/77	Jim Henrikson
1952/53	Amby Upfold	1977/78	Jim Johnson
1953/54	Warren McKay	1978/79	Ron Thurier
1954/55	Jack Heatley	1979/80	Dave Braedley
1955/56	Larry Hall	1980/81	John Stassen
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1966/67	Ted Stock	1991/92	Jim Lomax
1967/68	Bill Rion	1992/93	Bob Kelly
1968/69	Bud Dodds	1993/94	Bill Arundell
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CON-TEK - Steam Conditioning Valves and Desuperheaters

BAUMANN - Control Valves and Control Equipment

- General purpose control valves
- Corrosion resistant valves
- Low flow control valves

FISHER SERVICE

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- Maintenance and shut-down management
- Diagnostics for pneumatically operated valves
- Start-up assistance

FISHER-ROSEMOUNT

PRÖVOX® distributed control systems and Rosemount System 3™

SERVICE:

- Engineering and project management
- Installation and start-up assistance
- System life management

GO®
SWITCH

- Proximity limit switches

 **graham**

- Steam surface condensers
- Steam jet ejectors
- Heliflow heat exchangers

 **LAKESIDE**

Lakeside Process Controls Ltd.

581 Vidal Street South, Sarnia, Ontario, N7T 2V8

Phone: (519) 332-2300 Fax: (519) 332-6640