

# ANNUNCIATOR

SEPTEMBER 1996



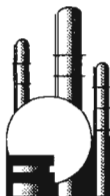
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**ADVERTISERS:** Please note that the deadline for the NOVEMBER ANNUNCIATOR is October 15, 1996. Please forward information to the editor by that date in order to have items updated.

**THE DINNER MEETINGS FOR THE 1996/97 SEASON  
WILL BE HELD AT THE  
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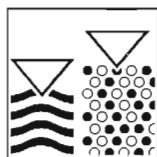


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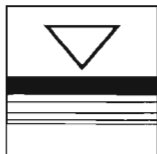


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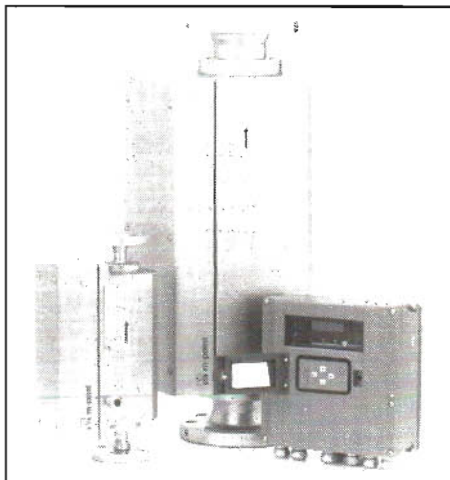
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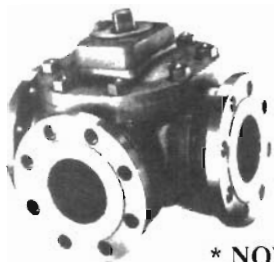
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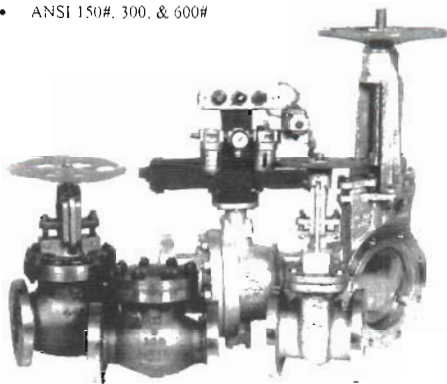
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## President's Message



I wish to take this opportunity to welcome all of our members to our first 96/97 ISA Sarnia Section dinner meeting. The executive has planned an active year of events. The Program Committee has assured the executive a very interesting yearly program and the speaker this month will be of interest to all of us as the topic will be beneficial to all members.

This year we are having a one day Exhibition show and the event is progressing under the directorship of Wayne Wilkins. There are many changes occurring within the organization such as redistricting the sections although this will have an impact within the organization, it will not affect District 13. Another point that will become an issue is the organization's constitution and by-laws. The membership will have to review the proposals and vote on the changes. Another interesting point is the ISA's extension in the certification of Certified Control Systems Technicians (CCST) where the technicians will have an additional year to test at any of the three levels of certification.

One area we will have to focus on and which is important to our existence, is membership. This is where the members can participate, perhaps we need to instill a membership contest. Again, I welcome anyone who is interested in measurement and control to belong to the ISA. The value of belonging to ISA is personally invaluable. My personal goal will be to have a number of instrument maintenance personnel who work in the Valley to join the ISA. Have you an application to hand out to the prospective member.

Why not ask one other person to accompany you to the dinner meeting. Hope to see all of you at the Sarnia Golf and Curling Club on September 30 at 6:00 p.m. Don't forget to make your reservation.

Regards,  
RANDY DENNIE, *President*

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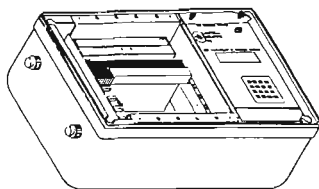
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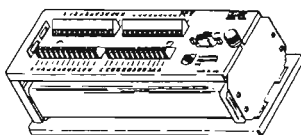
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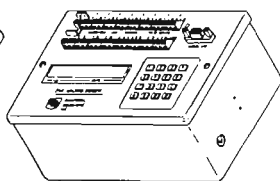
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# Networking – Do It Now!

REPRINTED FROM CHEMPID NEWSLETTER

*by Ray Pullmann*

A few weeks ago, I went through an event that I had never before encountered in my career. I was laid off.

My company had been acquired on January 1st by a large, integrated process control company and in a cost-cutting move, my job, along with thirty others, was eliminated. Between that stunning event and now, I've reflected a bit about layoffs, and how people in our industry can be better prepared for them if and when they come.

I'd like to share some of those thoughts with you. My comments will apply to the North America Process controls industry in general, although you may work for a segment of the industry that is in a different part of its life cycle. By the way, I use Michael E. Porter's text "Competitive Strategy" for my definition of characteristics of industry development. His text is available from MacMillan Publishing, and is an excellent source of analysis of industries and competitors.

Why do layoffs happen in this industry? It's part of the industry's transition through its mature phase. There are occasional product offerings that rapidly go through in-

roduction and growth phases, but overall, the industrial process controls industry is mature, growing at slightly better than the pace of inflation.

In mature industry, it's easier and more profitable, to buy market share than to grow market share. Shareholders expect growth, and growth by acquisition is a perfectly acceptable growth strategy. But alas, you don't get something for nothing. Buying companies cost money, and the quickest way to improve the bottom line is to get rid of people. You'd do it too if shareholders were depressing the price of your stock. It's faster than a product redesign or increasing the orders level.

Based on what I've read, the long term result of these actions is mixed, but the near-term result is definitely measurable at the bottom line, and that's what investors in U.S. companies want. So, barring any major technological or economic breakthrough that will result in industry growth, we can expect to see even more strategies of growth by acquisition and their attendant layoffs. You should expect to see more of it, especially if your company is acquired.

*(Continued on Page 25)*

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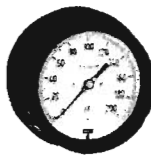
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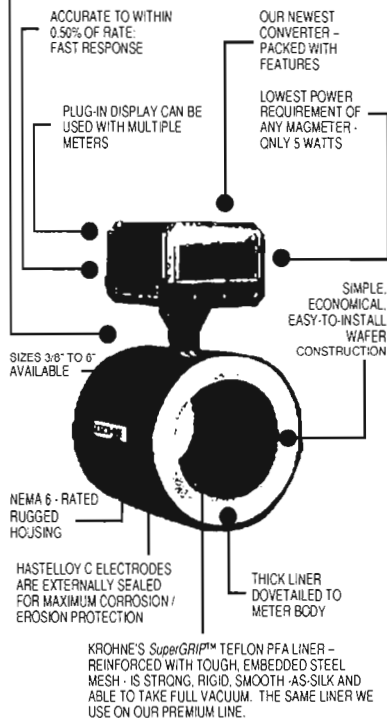
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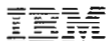
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## Networking – Do It Now! *(Continued from Page 21)*

How can I be prepared for a layoff? In the first twenty-four hours after I was laid off, I allowed myself half a day of mourning for my old job, which I loved, and then set out in search of greater opportunities. I had heard that eight out of ten new opportunities are found through personal networks, so I began to mobilize mine. Today, four weeks to the day after I was laid off, I'm engaged in discussions about real opportunities with four companies, and none of these were advertised. I learned of them through networking with people I know in the industry.

I keep track of my network with a simple data base, and by some standards, my network is small. It has about eighty names on it, and it grows by five or six names a week. It takes time to get your network mobilized. You need to contact them to let them know of your job situation, and then time to follow up on any leads they may provide. Since I had been totally unprepared, it took me nearly two weeks to track down addresses and phone numbers, to get the phone calls made and letters mailed. Now that it is established, it takes only a little daily time to keep the data base maintained.

Regardless of your job situation, begin to build your network now. Begin with your work associates. They know you best, and if they know of a job opportunity out there, will know if you are a potential match for it. Your work associates are only a start. If your professional network consists only of the

people you work with, you need to expand your outside contacts, and quickly. Do you deal with suppliers to your company? Get to know the sales reps for your suppliers and ask them to join your network. If they're calling on your company, odds are that they're selling the same or similar products to your competitors and will know of job situations in competitive companies.

Don't forget your ISA network. I've spent a fair amount of time doing volunteer work in ISA, and used the ISA Roster of Society Leaders to help build my network. If you're getting this newsletter, you can order the ChemPID roster as well.

The Tulsa Section just happened to be having their exhibit two weeks after I was laid off, so I took the opportunity to visit with suppliers there to learn of activity in the industry. If your company is one that doesn't make time or money available for you to support the national ISA activities, by all means get involved in your local section activities. You'll be making an investment in yourself.

By all means, don't let your professional network end at your company fence. That network won't be of much help if you're no longer there. They're going to be busy doing the work that you used to do. Begin today to grow your professional network; growing it through ISA is an excellent place to start. I'll update you next time on what else I've learned.



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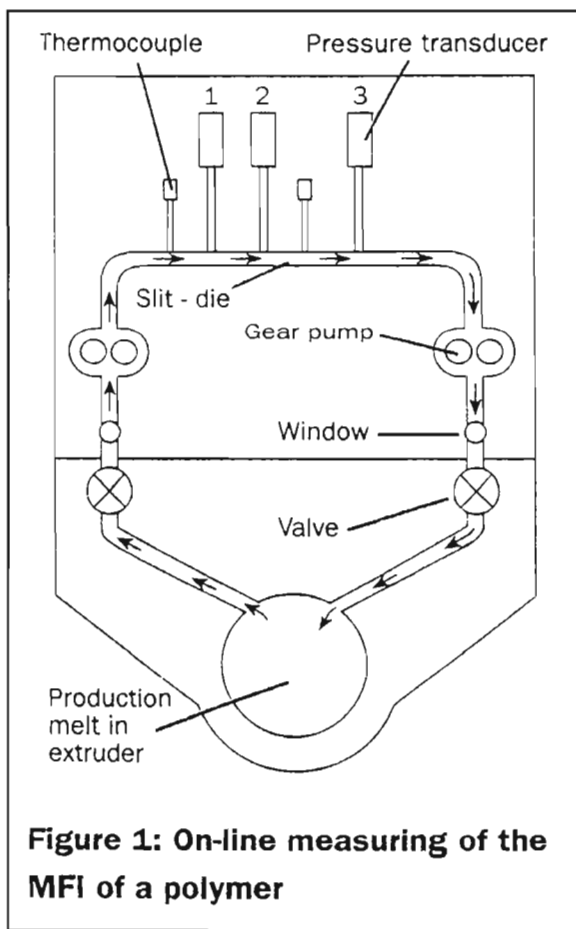
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# Putting your polymers on the line

*An increasing number of companies are using on-line monitoring of their process to produce consistent material while reducing manufacturing cost. F S Baker of Rheometric Scientific reports.*

Production of polymer resins is an energy-intensive and highly competitive industry. Manufacturing costs, therefore, must be contained without sacrificing the production of good quality, consistent product. This is achieved by exerting a tight control on the process. If a resin goes out of specification this should be recognized within minutes, especially



**Figure 1: On-line measuring of the MFI of a polymer**

*(Continued on Page 31)*

## Putting your polymers on the line

(Continued from page 30)

for viscous breaking and transition operations. Laboratory testing of samples from the line take 15 minutes to several hours before yielding a result. Meanwhile several thousand tone of possibly off-specification product has passed through the line.

The introduction of quality control protocols such as the ISO 9000 place a further requirement on product management discipline. Instruments can now measure the flow of properties of the polymer melt as it passes through the extruder. Physical properties such as density and tacticity can also be measured on-line.

The on-line instruments measuring the melt flow index (MFI) of the polymer continuously sample the melt from the extruder. A gear pump forces the melt through a slit-die of known dimensions. A second pump returns the melt to the extruder (*Figure 1*). The die is fitted with two melt pressure transducers which measure the pressure drop along the die. The third transducer is used to control the speed of the second gear pump to ensure that a slight positive pressure is maintained thereby preventing volatilization of low molecular weight species. The volume throughput is known from the displacement volume of the gear pump and its speed of rotation. The temperature of the melt is measured using abraded junction thermocouples. These data are used to calculate the viscosity of

the melt. The instruments also evaluate the power law index. All this information is used to calculate the MFI number which is plotted against time. The equipment is controlled by a PC, and the relevant data also can be sent to the main plant computer control system.

A further refinement is to include window cartridges which allow the melt to be examined with near infrared, ultra-violet and visible light, so that chemical analysis and morphological studies can be made at the same time as the flow properties of the melt are being measured.

The density and tacticity of a polymer can be assessed on-line by using nuclear magnetic resonance. The sample from a transfer line or from the pelletizer is automatically placed in a magnetic field. The proton nuclear dipoles line up with the field. An electromagnetic pulse of sufficient width is introduced to cause the dipoles to move perpendicular to the field. On removal of the pulse, the dipoles relax back to their equilibrium state. The rate at which they relax depends on the crystallinity and general morphology of the polymer. By examining the relaxation curve it is possible to correlate it with density or tacticity of the polymer.

On-line monitoring of the production of polymer resins produces consistent material whilst reducing manufacturing costs.

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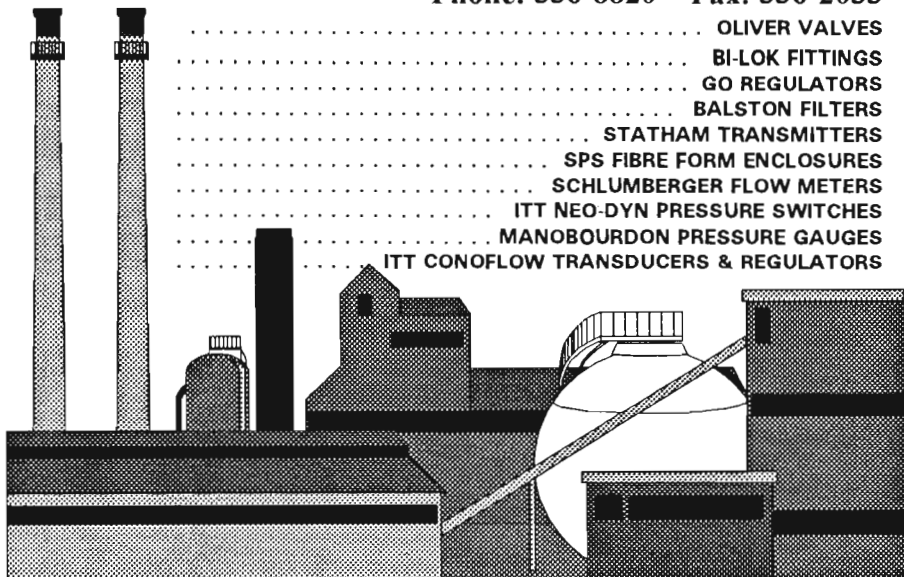
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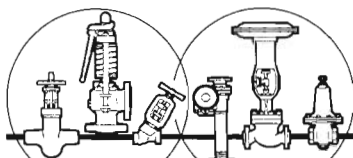
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# ISA PERSPECTIVES



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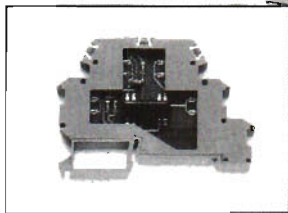
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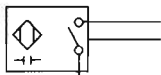


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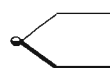
Fuse protection on analog signals.



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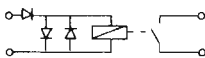
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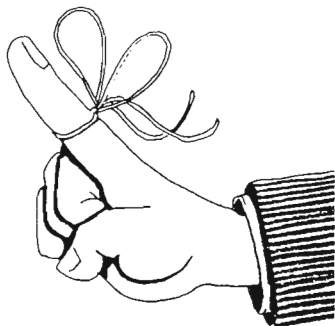
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Make a point of introducing  
yourself at the next meeting.

# ISA Sarnia Section “Dinner Meeting Notice”

**Monday, September 30, 1996**

**Sarnia Golf & Curling Club**

**500 Errol Road West, Sarnia**

**Phone: (519) 336-2201**

**Cocktails 6:00 p.m. Dinner 7:00 p.m.**

**All Guests are Welcome!**



## **GUEST SPEAKER**

**Fred Bergeron, TN TECHNOLOGIES**

**Topic: RADAR LEVEL MEASUREMENT**

**Also...** Campbell Scientific (Canada) Corp. will be manning a table top display on data acquisition during our cocktail hour and immediately after our dinner meeting. This event will be a regular feature at our dinner meetings. Vendors are requested to contact Bob Kelly or Chuck Douglas if interested in presenting their products at this time.



## **M • E • N • U**

**Salad**

**Chicken Cordon Bleu,  
Broccoli Spears Roast Potatoes**

**Cherry Cheesecake**

*Please phone in your reservation by **Thursday, September 26**  
to either Gayle at Provincial Controls... 336-7301  
or Maureen at Willer Engineering... 336-3006*

**Members \$10 • Guests \$15**

**Note:** ALL Members and guests are requested to reserve in advance.  
Please oblige... we need your support to plan your evening!



# *September General Assembly Meeting Schedule*

17:45	Social Hour
18:45	Meeting / Dinner Voting for V.P. Acceptance of Budget Miscellaneous
20:00	Guest Speaker
21:00	Meeting Adjourn



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## **Meeting Dates for Membership Dinner Meetings**

***Held on the last MONDAY of the Following Months.***

<b>Date</b>	<b>Time</b>	<b>Place</b>
September 30, 1996	8:00 p.m.	Sarnia Golf and Curling Club
November 25, 1996	"	"
January 27, 1997	"	"
March 31, 1997	"	"
May 26, 1997	<b>AWARDS / RECOGNITION NIGHT</b>	

## **Dinner Meetings**

With the new term comes a fresh new format for our Dinner Meetings. As always, our meetings will be held on the last Monday of every second month, beginning in September. ***Our location has changed***, however, and we will now be reverting back to the Sarnia Golf and Curling Club whose culinary efforts and refined atmosphere is highly regarded.

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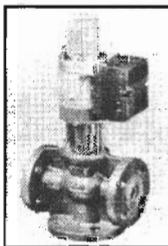
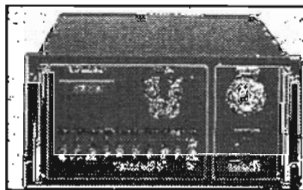
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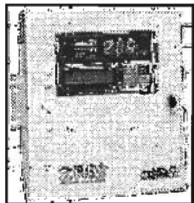


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# “INTERNET UPDATE”

## What's new on ISA Online?

The latest ISA / 96 information is available on line at <http://www.isa.org/isa96/>. You can register, view the exhibitor list, technical conference list and training programs.

There are a number of Standards committees that you can communicate with online via the public chat forums. See the Standards page at <http://www.isa.org/standards/> to review the list of available standards, download draft standards or communicate with the S&P board.



## WWWLinks

The Internet links listed below can also be found on one of my Internet pages. My Home Page is at <http://www2.ebtech.net/~bsmith/>. The ISA Sarnia Section home page is at <http://www2.ebtech.net/~bsmith/isasarni.html/>. Our new executive and meeting dates have been updated.

If you are looking for information and maps of Cities anywhere in the World, check out <http://www.city.net>. This site is hosted by Excite (<http://www.excite.com/>) which is an online Internet Directory.

A new site that is developing a directory of Canadian Internet links sorted by categories is <http://www.zeus.peacenet.com/peacgthr/ca.htm#gf/>.

Have you ever wanted to look up a telephone number for an out of town person or business? Check out the Canada 411 Directory at <http://canada411.sympatico.ca/english/person.html/>. There are over 10 million listings plus postal codes!

A good general site for searching is <http://www.search.com/>. It has forms to fill out for the major Internet search engines. The best ones are AltaVista, HotBot, Lycos and Magellan. It also has search forms for Internet E-Mail addresses and USA telephone listings.

Brian Smith Internet:

[bsmith@ebtech.net](mailto:bsmith@ebtech.net) [smithb@novacor.com](mailto:smithb@novacor.com)

# *Did You Know?*

Welcome to the new ISA Year! When most people are thinking about back to school (Yea!), the executive of the Sarnia Section is getting together to plan the next year. Of course, the major undertaking for this year will be our local ISA show. As you read this, the details are being finalized, and I'm sure that you can get more information elsewhere in the Annunciator.

## **Chicago ISA Show**

The Show in Chicago is taking place between October 7th and 10th. It should be an exciting show. I understand that many of the major Instrumentation Companies are introducing their Fieldbus Product line at this show. The world as we know it is definitely changing! The good old 4 - 20mA signal will not disappear overnight, but it's days are numbered. It won't be long before we start seeing these systems going into the valley. Technology marches on.

## **New Executive Members**

I would like to take this opportunity to welcome some new faces to the Sarnia Section Executive. Andy Tucker has been asked to take the job of Vice President. His position is subject to confirmation by the members, but he has been acting VP since mid summer. Brad Simpson has taken the position of Newsletter Assistant. Aldo DeSantis will be Honours and Awards Chairman, with Guy Salt acting as his assistant. Umesh Patel will be the Standards and Practice Assistant and Kalpen Vachharajani will be taking over as Education Chairman.

This is also a good time to say thank you to the departing Executive Members. Thanks guys, your help will be missed. If you ever feel that you are in need of further abuse, we will always have a chair for you at the table.

## **Dinner Meeting**

The next Dinner Meeting will be held on September 30th. Please note that we are moving back to the Sarnia Golf and Curling Club.

## **In Memorandum**

As many of you know, Fred Sheane Sr. passed away at the end of July. Fred was one of the guiding lights at the CAPT Centre and an active member of our Section.

If you have any questions or if you need any information on any of the Section activities, please do not hesitate to call myself or any of the Executive Members. Never forget, that this whole organization exists only for you, our members.

Dave Gooch, Executive Assistant  
(That's a fancy way of saying secretary!)

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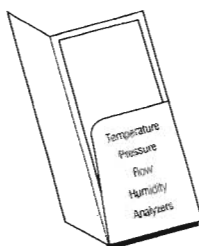
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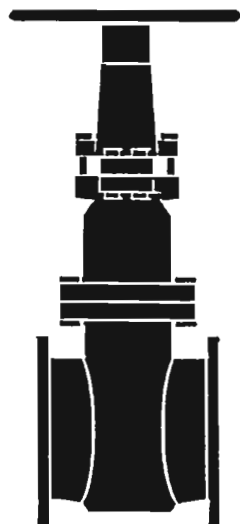
# Meeting Dates

## MEMBERSHIP DINNER MEETINGS

Date	Time	Place
September 30, 1996	8:00 p.m.	Sarnia Golf and Curling Club
November 25, 1996	"	"
January 27, 1997	"	"
March 31, 1997	"	"
May 26, 1997	AWARDS / RECOGNITION NIGHT	

## EXECUTIVE MEETINGS

Date	Time	Place
July 29, 1996 ( <i>Special Meeting</i> )	7:00 p.m.	Sarnia Golf and Curling Club
August 26, 1996	"	"
October 28, 1996	"	"
January 6, 1997	"	"
February 24, 1997	"	"
April 28, 1997	"	"
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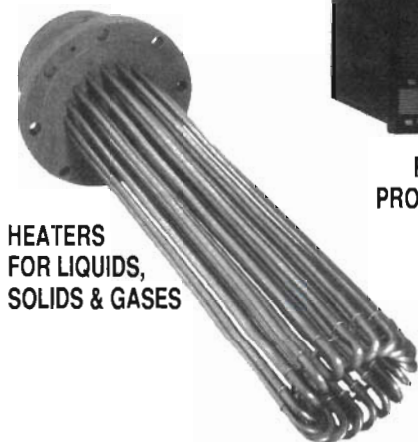


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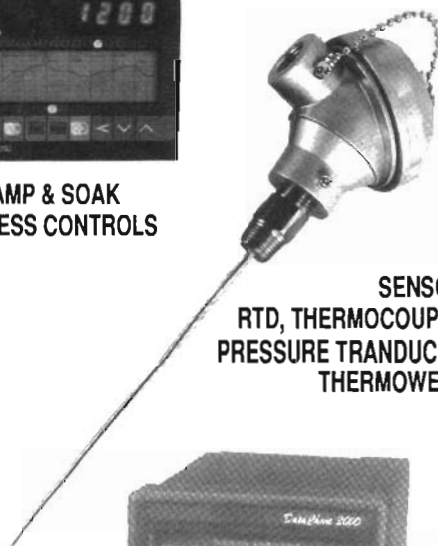
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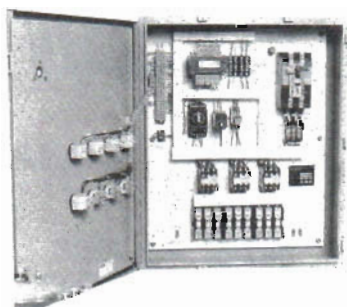
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# NEWS RELEASE

## **NOVATECH CONTROLS**

Molecular Electronics has purchased all the related Ion Mobility Spectrometry technology at ETG and will continue to manufacture at the ETG facility in Maryland. Novatech Controls will continue to represent both ETG and Molecular Electronics. ETG is known for measurement at the PBB level of HF, NH<sub>3</sub>, CL<sub>2</sub> and HCL in various process industries.

---

## **INDUSTRIAL TECHNICAL SERVICES**

Industrial Technical Services/BSP Instruments (Wallaceburg) have merged to service the Southwestern Ontario market with analyzers, instruments, calibrators as well as system integration, calibration and repair services. Further information can be obtained by telephoning BSP at 519-627-8505.

---

## **UNITED ELECTRIC CONTROLS CO.**

United Electric Controls announces that many of their series of pressure switches are now available as a standard with epoxy coated enclosures. Epoxy coating is preferred for corrosive location applications and as well as being suited for Class 1, Division 1 & 2 environments and comply with NEMA 4, 4X, 7 and 9. United Electric will be pleased to provide a list of switches with this standard feature.

---

## **ROSEMOUNT INSTRUMENTS LTD.**

Rosemount Instruments Ltd. announces the introduction of a new two-wire pH/ORP transmitter. The new model 81 features infrared remote control communication, predictive sensor diagnostics, large display as well as HART communications protocol. The operator can communicate with the model 81 from up to 10 feet away.

---

## **MOORE PRODUCTS CO.**

Moore Products Co. (Canada) Inc. the Canadian Distributor of all Krohne flow and level measurement products announces the release of the Krohne model 1500G series Coriolis mass flowmeter. The 1500G is the latest in a series of G-series flowmeters available in five sizes. The G-series is a single straight tube flowmeter capable of measuring mass flow rate, product density and temperature as well as other parameters.

---

## **MOORE PRODUCTS CO.**

Moore Products Co. (Canada) Inc. announces expanded capabilities for the QUADLOG critical control system first introduced at ISA 95. Moore announces the QUADLOG with quad redundancy is suitable for all safety system applications such as emergency shutdown and fire & gas detection.

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## GROUP INTERNET RATES

Our ISA Group rate at Electro-Byte is being reviewed. If your account is coming due, please let me know (email: [bsmith@ebtech.net](mailto:bsmith@ebtech.net)). I would like to know how many hours per month you normally use. Our original group account was for 10 hours. The normal 3 month contract costs \$64.50 including GST for 50 hours / month.

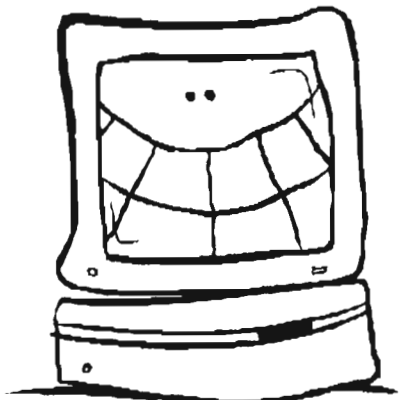
The Sarnia Section Home Page can be found at: <http://www2.ebtech.net/~bsmith/isasarni.html>

If you are going to switch to another Internet provider, I would recommend Xcelco. It can be accessed by a local call from all of Lambton County and London. Contact Xcelco directly at 1-888-999-9235 or Nettech Engineering in Sarnia at 337-6904. The basic fee is \$24.95 for 60 hours with \$0.50 for additional hours.

## SARNIA SECTION BBS UPDATE

As of August 26th the BBS has received 1408 calls. There have been 498 messages in the Mail Board conference, 1170 downloads and 31 uploads. If you are looking for a copy of the latest Internet WWW Browser from Netscape or Microsoft call the BBS and download it for free. There are also copies of other popular Internet programs plus copies of Instrument Sizing and selection programs. The BBS phone number is (519) 541-0427.

If you would like to learn more about the BBS and are interested in participating in a BBS seminar please let me know by calling... (519) 332-1212 x7920.



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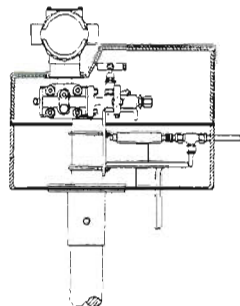
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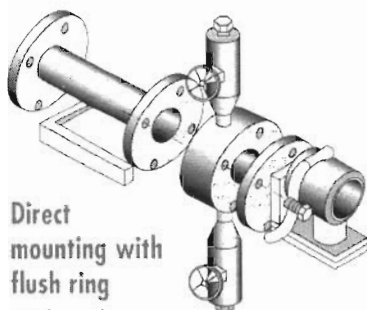
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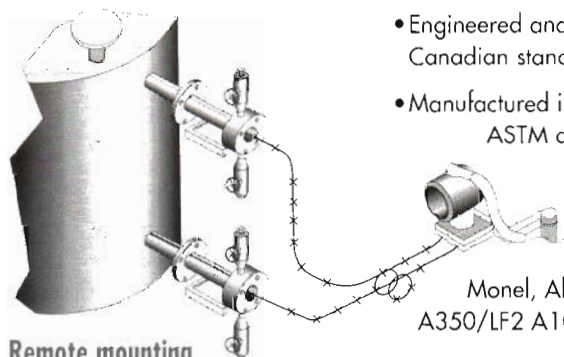
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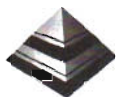
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State/Province \_\_\_\_\_ Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Telephone (include area code or country/city code) \_\_\_\_\_ FAX \_\_\_\_\_ Telex \_\_\_\_\_

Have you ever been a member of ISA? ☐ Yes ☐ No Previous years of membership \_\_\_\_\_

Assign me to the \_\_\_\_\_ section or the section closest to my home address.

Highest Educational Degree Earned ☐ High School ☐ Associate ☐ Bachelor ☐ Master ☐ Doctorate

Are you a registered professional engineer? ☐ Yes ☐ No State/Country Registered \_\_\_\_\_

☐ From time to time we may make our mailing list available to companies whose products or services may interest you. If you do not want your name exchanged, please check this box. We will respect your wishes.

## 2 NOTE: Sections 2, 3, and 5 must be completed for processing.

Check your primary job function:

- ☐ A: General or Corporate Management
- ☐ B: Control Systems Engineering
- ☐ C: Design Engineering
- ☐ D: Production Engineering
- ☐ E: Plant Engineering or Maintenance
- ☐ F: Software Engineering
- ☐ G: Plant Information Systems
- ☐ H: Systems Integration
- ☐ I: Measurement, Testing, Quality, or Standards
- ☐ J: Research and Development
- ☐ K: Technical or Engineering Support
- ☐ L: Operations
- ☐ M: Purchasing or Procurement
- ☐ N: Education or Training
- ☐ O: Marketing or Sales
- ☐ P: Others: Describe \_\_\_\_\_

What is the primary end product manufactured or service performed at your company location? \_\_\_\_\_

☐ Check here if no manufacturing is done at this location.

**3** Signature \_\_\_\_\_

Date \_\_\_\_\_

## 5 Dues Payment Information

Please select the level of membership for which applying:

- ☐ Regular Member: \$60 US (Tax Deductible) \$ \_\_\_\_\_
- ☐ Student Member: \$9 US (Limited Benefits) \$ \_\_\_\_\_
- ☐ Division Membership: \$5 US each \$ \_\_\_\_\_
- ☐ Industrial Computing Society Membership (reg. \$55) \$30 \$ \_\_\_\_\_
- must be an ISA member.
- Total Amount Due \$ \_\_\_\_\_

Annual ISA dues include a subscription to **INTECH**, for which a non-deductible allocation of \$8.00 is made for regular members and \$3.50 for student members.

**Note:** The following are acceptable for remitting dues payment. Please indicate the method used. Make payable to Instrument Society of America in **US currency only**. If paying with international funds, see special note below.

- ☐ Check ☐ Money Order
- ☐ American Express ☐ Eurocard ☐ MasterCard ☐ Visa
- Acct # \_\_\_\_\_ Exp. Date \_\_\_\_\_

### 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, ABA#53100465. 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.

**4**

<b>Automation &amp; Technology Divisions</b> <input type="checkbox"/> (A) Analysis* <input type="checkbox"/> (C) Robotics & Expert Systems <input type="checkbox"/> (D) Computer Technology* <input type="checkbox"/> (E) Open Systems Interconnection <input type="checkbox"/> (H) Process Measurement & Control* <input type="checkbox"/> (I) Maintenance	<input type="checkbox"/> (J) Test Measurement* <input type="checkbox"/> (M) Automatic Control Systems* <input type="checkbox"/> (N) Telemetry & Communications <input type="checkbox"/> (P) Electro-optics <input type="checkbox"/> (W) Management*	<b>Industries &amp; Sciences Divisions</b> <input type="checkbox"/> (B) Aerospace Industries* <input type="checkbox"/> (F) Mining & Metals <input type="checkbox"/> (G) Chemical & Petroleum Industries* <input type="checkbox"/> (K) Construction and Design* <input type="checkbox"/> (L) Pulp & Paper Industry* <input type="checkbox"/> (O) Power Industry*	<input type="checkbox"/> (R) Food & Pharmaceutical Industries* <input type="checkbox"/> (T) Textile Industry <input type="checkbox"/> (U) Automotive & Vehicular <input type="checkbox"/> (X) Water & Wastewater Industries <input type="checkbox"/> (Y) Glass & Ceramics Industries <input type="checkbox"/> (Z) Marketing & Sales*
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\* 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.H. Emery  
A.S.I.  
A.W. Sperry  
ACR Systems  
ADI  
AEMC  
AFE  
APACS  
API Meters  
ARO  
ARi  
ASCO  
ASD  
Acromag  
Acrotech  
Action  
Action Instruments  
Action Instruments  
Action Instruments  
Advance Products Spray Shields  
Agar  
Air Flow  
Air Monitor Corp.  
Aladco Nu-Check Valves  
Alco Manifolds  
Alnor  
Alnor Instruments  
Altek  
Altek  
American  
Ametek  
Ametek  
Ametek - Analyzers  
Ametek Gauges  
Amiad  
Amot  
Amot Controls  
Amprobe  
Analogic  
Anderson Greenwood  
Annubar/DSC  
Apical Charts  
Apollo  
Appalachian Controls  
Applied Automation  
Armatek  
Armstrong  
Armtec Industries  
Ascolectric  
Ashcroft  
Ashcroft  
Ashford Valve  
Atkins

## Local Sales Representative

Romatec  
Alpha Controls & Instrumentation  
Transcat  
Syber Systems Inc.  
Westburne Lytle  
Transcat  
Alpha Controls & Instrumentation  
Cancoppas Limited  
Transcat  
Axiom Technologies Ltd.  
Moore Products Co. (Canada) Inc.  
Lisle-Metrix Ltd.  
Mentec Sarnia Ltd.  
Alpha Controls & Instrumentation  
Westburne Lytle  
Brian Controls  
Willer Engineering  
Transcat  
Summit Controls Ltd.  
Cambridge Controls  
Heaters Controls & Sensors Ltd.  
Ovantum Sales  
Sarnia Piping Specialties  
Zirco Ltd.  
Transcat  
Westech Industrial Ltd.  
Provincial Controls  
Provincial Controls  
Baker Instruments Ltd.  
Transcat  
Alpha Controls & Instrumentation  
Transcat  
Axiom Technologies Ltd.  
Brian Controls  
Transcat  
Westech Industrial Ltd.  
Hardie Industrial Services Inc.  
Floval Equipment Ltd.  
Mentec Sarnia Ltd.  
Controls  
Transcat  
Transcat  
Cantech Controls  
Floval Equipment Ltd.  
Provincial Controls  
Romatec  
Controls  
Westech Industrial Ltd.  
Armatek Controls  
Willer Engineering  
BEP Bestobell Canada Ltd.  
Floval Equipment Ltd.  
Romatec  
Transcat  
BEP Bestobell Canada Ltd.  
Transcat

**Manufacturer / Tradename**

Atlantic Group Inc.  
Atomac Ball & Check Valves  
Aurora  
Autotech  
Azonix  
B & K  
B.N.W.  
B/W Controls  
BEHA  
BEI  
BJ Software  
BLH Electronics  
BOILER-GARD  
BS & B  
BTG Inc.  
Babbitt  
Bacharach - Hand Held Instruments  
Backos  
Badger Meter  
Badger Meter  
Bailey  
Baldwin Environmental Inc.  
Balluff  
Balston Filters  
Barber Engineering  
Barber-Colman  
Barnant  
Barnant  
Barton  
Baumann  
Beamex  
Bebco Industries  
Beckman Industrial  
Bellofram  
Berthold  
Bestobell Steam, Div. of Richards Ind.  
Bestobell Valves  
Beta  
Beta  
Bi-Lok Fittings  
Biccotest  
Biddle  
Bin-Master  
Binmaster  
Bio-Tek  
Bourdon-Sedeme (Manobourdon) Gauges  
Brandt  
Branson  
Bristol Babcock  
Brooklyn Thermometer  
Brooks-Meter  
Burkert  
Burkert Solenoid Valves  
Burling Instruments  
CEWE  
CRL  
CSI - Microloggers  
Cajon Pipe Fittings  
Cal  
California Analytical  
Can-Ross  
Cantech Systems  
Cash-Acme

**Local Sales Representative**

Cantrals  
Sarnia Piping Specialties  
Mentec Sarnia Ltd.  
Davis Controls  
Transcat  
Transcat  
Floval Equipment Ltd.  
Ovantium Sales  
Transcat  
Willer Engineering  
Davis Controls  
CB Engineering  
Lisle-Metrix Ltd.  
Romatec  
Summit Controls Ltd.  
Industrial Technical Services  
Transcat  
Mentec Sarnia Ltd.  
J & M Engineering & Sales Ltd.  
Summit Controls Ltd.  
Elsag Bailey  
Novatech  
Davis Controls  
Sarnia Piping Specialties  
Ovantium Sales  
Davis Controls  
Heaters Controls & Sensors Ltd.  
Transcat  
Armatek Controls  
Lakeside Process Controls  
Transcat  
Cantrals  
Transcat  
Romatec  
Westech Industrial Ltd.  
BEP Bestobell Canada Ltd.  
BEP Bestobell Canada Ltd.  
Armatek Controls  
Transcat  
Sarnia Piping Specialties  
Transcat  
Transcat  
Regional Process Equipment  
Cancoppas Limited  
Transcat  
Sarnia Piping Specialties  
Willer Engineering  
Transcat  
Sharp Valve & Instrumentation  
Transcat  
Mentec Sarnia Ltd.  
Summit Controls Ltd.  
Provincial Controls  
Baker Instruments Ltd.  
Cancoppas Limited  
Cancoppas Limited  
Campbell Scientific (Canada) Corp.  
Huron Valve & Fittings  
Davis Controls  
Brian Controls  
Spec Sarnia Limited  
Cantech Controls  
Westburne Lytle

## Manufacturer / Tradename

Cashco Canada  
Cashco Canada, Inc.  
Cellex  
Cellex  
Celtek Electronics  
Cemco  
Century Instrument  
Century Valve  
Cerabar  
Chandler  
Chatam Controls  
Checkpoint Systems  
Chemline  
Chemtrol  
Chessell  
Clif Mock  
Colder  
Computer Keyboard Systems (CKS)  
Con-Tek  
Conant Valves  
Conders  
Consolidated  
Consolidated Controls  
Control Instruments Corp.  
Control Microsystems  
Controlair Inc.  
Controlotron  
Cooper Instruments  
Cosa  
Cosa  
Crowcon  
Crowcon  
Custom Control Sensors  
Cybex  
DGH  
Dahl  
Danaher Controls  
Danfoss  
Danfoss Mfg. Co. Ltd. - Denmark  
Daniel Industries  
Data Industrial Corporation  
Data Precision  
DateI  
Davis Instruments  
DeZurik  
Defelsko  
Delavan  
Delphian  
Delta-M  
Deltabar  
Deltapilot  
Deltavalve  
Detector Electronics (Detronics)  
Devar  
DewPro  
Dewrance  
Dianachart  
Dickson  
Digitec  
Dopak  
Dover Gas Technologies  
Dow Plastic Lined Piping Products  
Drainall

## Local Sales Representative

Provincial Controls  
Cambridge Controls  
Armatek Controls  
Spec Sarnia Limited  
Cantrils  
Cantech Controls  
Sarnia Piping Specialties  
Brian Controls  
Endress + Hauser  
Transcat  
Heaters Controls & Sensors Ltd.  
Cantech 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  
Willer Engineering  
Brian Controls  
Cambridge Controls  
Westech Industrial Ltd.  
Transcat  
Brian Controls  
Industrial Technical Services  
Cancoppas Limited  
Regional Process Equipment  
Willer Engineering  
CB Engineering  
Alpha Controls & Instrumentation  
Armatek Controls  
J & M Engineering & Sales Ltd.  
Davis Controls  
Lisle-Metrix Ltd.  
Cantrils  
Cambridge Controls  
Transcat  
Transcat  
Transcat  
Floval Equipment Ltd.  
Transcat  
Armatek Controls  
Romatec  
Brian Controls  
Endress + Hauser  
Endress + Hauser  
Summit Controls Ltd.  
CB Engineering  
Cantech Controls  
Endress + Hauser  
Contro Valve Inc.  
Alpha Controls & Instrumentation  
Transcat  
Brian Controls  
Westburne Lytle  
Veronics  
Sarnia Piping Specialties  
Mentec Sarnia Ltd.

**Manufacturer / Tradename**

Druck  
Durakool  
Duro-Sense  
Dwyer  
Dwyer  
Dwyer  
Dwyer  
Dylon  
Dynapar  
ECD  
ECD  
EG & G Flow Technology Inc.  
EMCO  
ETC  
Eagle Signal  
Eaton IDT  
Echotel Ultrasonic  
El-O-Matic  
Eldridge  
Electromatic  
Electromatic  
Elremco Timers - England  
Enardo  
Encoder  
Endress + Hauser  
Enertrul Shock Absorbers  
Enertruls  
Engineered Valves International (E.V.I.)  
Enraf Inc.  
Environmental Technologies Group Inc.  
Epic  
Erdco  
Erhard Valves - Germany  
Ernst Flow & Level  
Euchner  
Eurotherm  
Eurotron  
Exergen  
Exotherm  
Expertune  
Expo Safety Systems  
F.B. Leopold - USA  
F.W. Bell  
F.W. Murphy  
FCI  
FPP  
FUJI  
Fabco Air  
Fairchild  
Farris  
Farris Relief Valves  
Fieldview  
Fike  
Fike Canada Inc.  
Fischer & Porter  
Fisher Controls  
Fisher Research  
Fisher Service  
Fisher-Rosemount Systems  
Fisons Instruments  
Flow Meter Co. - England  
Flow Research  
Flow-Tek

**Local Sales Representative**

Transcat  
Davis Controls  
Transcat  
Baker Instruments Ltd.  
Cantech Controls  
Davis Controls  
Transcat  
Mentec Sarnia Ltd.  
Davis Controls  
Novatech  
Transcat  
CB Engineering  
Davis Controls  
Transcat  
Davis Controls  
Cantech Controls  
Provincial Controls  
Westburne Lytle  
Cancoppas Limited  
Davis Controls  
Heaters Controls & Sensors Ltd.  
Lisle-Matrix Ltd.  
Zirco Ltd.  
Axiom Technologies Ltd.  
Regional Process Equipment  
Provincial Controls  
Axiom Technologies Ltd.  
Westburne Lytle  
Willer Engineering  
Novatech  
Cancoppas Limited  
BEP Bestobell Canada Ltd.  
Lisle-Matrix Ltd.  
Provincial Controls  
Davis Controls  
Heaters Controls & Sensors Ltd.  
Industrial Technical Services  
Heaters Controls & Sensors Ltd.  
Heaters Controls & Sensors Ltd.  
Summit Controls Ltd.  
Syber Systems Inc.  
Lisle-Matrix Ltd.  
Transcat  
Cantech Controls  
Willer Engineering  
Cancoppas Limited  
Heaters Controls & Sensors Ltd.  
Davis Controls  
Regional Process Equipment  
Floval Equipment Ltd.  
Provincial Controls  
Lakeside Process Controls  
Sharp Valve & Instrumentation  
Brian Controls  
Elsag Bailey  
Lakeside Process Control  
Transcat  
Lakeside Process Controls  
Lakeside Process Controls  
Westech Industrial Ltd.  
Lisle-Matrix Ltd.  
Floval Equipment Ltd.  
Summit Controls Ltd.

## Manufacturer / Tradename

Flowdata Inc.  
Fluid Data/Amscor  
Fluke  
Foxboro  
Foxboro  
Foxcroft  
Fuji  
Fujikin of America Inc.  
Fulier  
G.H. Flow  
G.W. Dahl  
GGOSCO Needle Valves  
GGOSCO Valves  
GH Flow Automation  
GO Regulators  
GO Switch (Proximity)  
GPE  
Galtek  
Gamma Silometer  
General Eastern  
General Resistance  
Geokon  
George Fischer +GF+  
Global  
Graham Manufacturing  
Gralab  
Granucor  
GranufLOW  
Granumet  
Graseby / STI  
Great Plains Industries  
Greyline Instruments  
H.D. Baumann  
Hancock  
Hansen Quik Connects  
Hartman-Technica  
Hartmann & Braun  
Hathaway  
Hathaway-Wodex  
Haven  
Haws  
Hayward  
Hedland  
Heise  
Hewlett Packard  
Hex Valve  
Hiltap Couplers  
Hiltcraft  
Hitachi  
Hitachi - Oscilloscopes  
Hoffer Flow Controls - USA  
Honeywell  
Honeywell  
Honeywell - Recorders  
Honeywell Controllers & Recorders  
Horiba  
Huntron  
Hy-Cal  
HydroGuard  
IBM Industrial Computers  
ICI  
IDEC  
IET

## Local Sales Representative

J & M Engineering & Sales Ltd.  
Armatek Controls  
Transcat  
Ovantum Sales  
Spec Sarnia Limited  
Cancoppas Limited  
Industrial Technical Services  
Ovantum Sales  
Syber Systems Inc.  
Cantech Controls  
Armatek Controls  
Westburne Lytle  
Hardie Industrial Services Inc.  
Ovantum Sales  
Sarnia Piping Specialties  
Lakeside Process Control  
Sharp Valve & Instrumentation  
Romatec  
Endress + Hauser  
Willer Engineering  
Transcat  
Campbell Scientific (Canada) Corp.  
Brian Controls  
Transcat  
Lakeside Process Controls  
Transcat  
Endress + Hauser  
Endress + Hauser  
Endress + Hauser  
CB Engineering  
Armatek Controls  
Controls  
Lakeside Process Controls  
Contro Valve Inc.  
Provincial Controls  
Transcat  
Westech Industrial Ltd.  
Armatek Controls  
Alpha Controls & Instrumentation  
Cancoppas Limited  
Mentec Sarnia Ltd.  
Summit Controls Ltd.  
Brian Controls  
Transcat  
Transcat  
Sharp Valve & Instrumentation  
U & I Supply  
Syber Systems Inc.  
Davis Controls  
Transcat  
Lisle-Metrix Ltd.  
Brian Controls  
Davis Controls  
Transcat  
Provincial Controls  
Alpha Controls & Instrumentation  
Transcat  
Davis Controls  
Endress + Hauser  
CB Engineering  
Cancoppas Limited  
Axiom Technologies Ltd.  
Transcat

## Manufacturer / Tradename

IMS  
ISI  
ITT Barton Instruments  
ITT Conoflow Regulators & Seals  
ITT Engineered Valves  
ITT Neo-Dyn Switches  
IVO Industries - USA  
Illinois Instruments  
Imperial Eastman  
Imperial Eastman  
Imperial Eastman Fittings  
Industrial Scientific  
Industrial Sensors  
Ingold  
Inor  
Intellution  
Intempco  
Interface  
Ion Track Instrumentation (ITI)  
Ionics Instrument Division  
Ircon  
J-Tec  
J.M. Canty, Inc.  
J.U.M.  
JB Engineering  
Jacoby Tarbox  
Jensen  
Jerguson Level Gauges  
Jofra  
Johnson Yokogawa  
Jordan Controls, Inc.  
Julius Bauser - Germany  
K-Tek  
KDG Mobrey  
KEP  
KF Industries  
KL Flow  
KNF Neuberger  
KTM  
Kammer Control Valves  
Kammer Control Valves  
Kane-May  
Kates  
Kay Ray/Sensall  
Kaye  
Kaye Instruments  
Keddc Mfg Ltd.  
Keller  
Kenwood USA  
Ketema  
Kinetrol Actuators  
Kinetrol Actuators  
King Valves  
Kistler-Morse  
Klinger  
Klinger  
Klockner Moeller  
Kobold  
Kobold  
Koch  
Kotron Capacitance  
Krebs Engineer  
Kreyenborg

## Local Sales Representative

Mentec Sarnia Ltd.  
Heaters Controls & Sensors Ltd.  
Armatek Controls  
Sarnia Piping Specialties  
Romatec  
Sarnia Piping Specialties  
Lisle-Matrix Ltd.  
Veronics  
Axiom Technologies Ltd.  
U & I Supply  
Provincial Controls  
Brian Controls  
Heaters Controls & Sensors Ltd.  
Westech Industrial Ltd.  
Alpha Controls & Instrumentation  
CB Engineering  
Cantech Controls  
Willer Engineering  
BEP Bestobell Canada Ltd.  
Veronics  
Willer Engineering  
Brian Controls  
Cambridge Controls  
Industrial Technical Services  
Transcat  
Romatec  
Transcat  
Romatec  
Transcat  
CB Engineering  
Cambridge Controls  
Lisle-Matrix Ltd.  
CB Engineering  
BEP Bestobell Canada Ltd.  
Brian Controls  
Mentec Sarnia Ltd.  
Cancoppas Limited  
Transcat  
Regional Process Equipment  
Controls  
Westburne Lytle  
Transcat  
Westech Industrial Ltd.  
Rosemount Instruments  
Transcat  
CB Engineering  
U & I Supply  
Campbell Scientific (Canada) Corp.  
Transcat  
Brian Controls  
Hardie Industrial Services Inc.  
Provincial Controls  
Zirco Ltd.  
Ovantum Sales  
Davis Controls  
Spec Sarnia Limited  
Axiom Technologies Ltd.  
Cancoppas Limited  
Regional Process Equipment  
Romatec  
Provincial Controls  
Floval Equipment Ltd.  
Mentec Sarnia Ltd.

## Manufacturer / Tradename

Krohne  
Kurz  
Kurz  
L & J Technologies  
L.J. Star Inc.  
LAGCO Flumes - USA  
LC Meters  
LCI-Luwa  
LEOPOLD  
LFE Instruments - USA  
LI-COR  
LMI  
LMI  
Land  
Land - Analyzers  
Larad  
Laurence  
Leader  
Leaderline  
Lee-Dickens Ltd. - England  
Legris  
Leslie  
Lewis  
Limitorque  
Liquid-O-Ring  
Liquiphant  
Love  
Lumenite Electronic Company  
M and Y Valve Services  
M point  
M-Tek  
MCS  
MDI  
MKS  
MTL  
MTL Intrinsic Safe Barriers  
MaCWeld  
Madison  
Madison Company  
Madur Electronics  
Magnetrol  
Magnetrol  
Magnetrol Level & Flow  
Major  
Manobourdon  
Marsh Instruments  
Martel  
Masoneilan  
Max  
McCrometer  
Mead  
Meeco Inc.  
Mercoid  
Meriam Instruments  
Meriam Instruments  
Mesa Laboratories  
Met One  
Metrix  
Metrix Timers  
Micon  
Micro Motion  
Micro Wire  
Micronics Ltd.

## Local Sales Representative

Moore Products Co. (Canada) Inc.  
Brian Controls  
Transcat  
Sharp Valve & Instrumentation  
J & M Engineering & Sales Ltd.  
Lisle-Metrix Ltd.  
Spec Sarnia Limited  
Mentec Sarnia Ltd.  
Lisle-Metrix Ltd.  
Lisle-Metrix Ltd.  
Campbell Scientific (Canada) Corp.  
Novatech  
U & I Supply  
Transcat  
Westech Industrial Ltd.  
Syber Systems Inc.  
Mentec Sarnia Ltd.  
Transcat  
Honeywell  
Lisle-Metrix Ltd.  
Axiom Technologies Ltd.  
Mentec Sarnia Ltd.  
Transcat  
Sharp Valve & Instrumentation  
Mentec Sarnia Ltd.  
Endress + Hauser  
Davis Controls  
J & M Engineering & Sales Ltd.  
Ovantium Sales  
Endress + Hauser  
Transcat  
Heaters Controls & Sensors Ltd.  
Heaters Controls & Sensors Ltd.  
Transcat  
Syber Systems Inc.  
Provincial Controls  
Heaters Controls & Sensors Ltd.  
BEP Bestobell Canada Ltd.  
Ovantium Sales  
Novatech  
Davis Controls  
Floval Equipment Ltd.  
Provincial Controls  
Alpha Controls & Instrumentation  
Sarnia Piping Specialties  
Ovantium Sales  
Transcat  
Contro Valve Inc.  
Willer Engineering  
Brian Controls  
Transcat  
Novatech  
Davis Controls  
Transcat  
Brian Controls  
Armatek Controls  
Campbell Scientific (Canada) Corp.  
Transcat  
Lisle-Metrix Ltd.  
Cantech Controls  
Rosemount Instruments  
Spec Sarnia Limited  
Veronics



## Manufacturer / Tradename

Micropilot  
Mid-West Instrument  
Mid-West Instrument  
Mihjets  
Mikron  
Milton Roy - Liquid Metronics Division  
Milwaukee  
Mini-X Purge Systems  
Mini-Z Purge Systems  
Mitsubishi  
Mobrey  
Monarch  
Monitek  
Monitor Labs  
Monitor Labs  
Moore  
Moore Industries  
Moore Products Pressure Regulators  
Mueller  
Multi-Amp  
Multi-Volt  
Multicap  
Mycro  
Myron L  
NBS  
NGI  
NICE  
Nassau Instrument  
Neles-Jamesbury  
Neotronics  
Neotronics  
Neotronics  
Nil-Cor  
Nivocompact  
Nivosonic  
Norac  
Norriseal Butterfly Valves  
Norstat  
Northern Vibrator  
Novatech Systems Group  
Numatics  
Numatics Cylinders  
Numatics F/R/Ls  
Numatics Solenoid Valves  
Nupro Valves  
Nusonics  
O'Brien Corporation  
OMNI  
Oakton  
Ogden  
Ogontz  
Ohio Semitronics Inc.  
Oilgear  
Oldham  
Oliver Valves  
Omron  
Orange Research DP Switch  
Orion  
PMV  
PMV  
PTC  
Pacer Industries  
Pamark Manifolds

## Local Sales Representative

Endress + Hauser  
Brian Controls  
Hardie Industrial Services Inc.  
Spec Sarnia Limited  
Transcat  
U & I Supply  
Floval Equipment Ltd.  
Syber Systems Inc.  
Syber Systems Inc.  
Davis Controls  
BEP Bestobell Canada Ltd.  
Transcat  
Willer Engineering  
Brian Controls  
Romatec  
Moore Products Co. (Canada) Inc.  
Armatek Controls  
Transcat  
Mentec Sarnia Ltd.  
Transcat  
Transcat  
Endress + Hauser  
Moore Products Co. (Canada) Inc.  
Transcat  
Transcat  
Transcat  
Cancoppas Limited  
Transcat  
Summit Controls Ltd.  
Cantech Controls  
Transcat  
Westech Industrial Ltd.  
Contro Valve Inc.  
Endress + Hauser  
Endress + Hauser  
Ovantium Sales  
Sarnia Piping Specialties  
Davis Controls  
Floval Equipment Ltd.  
Novatech  
Axiom Technologies Ltd.  
Provincial Controls  
Provincial Controls  
Provincial Controls  
Huron Valve & Fittings  
Armatek Controls  
CB Engineering  
Westech Industrial Ltd.  
Transcat  
Heaters Controls & Sensors Ltd.  
Cantech Controls  
Ovantium Sales  
BEP Bestobell Canada Ltd.  
Cantech Controls  
Sarnia Piping Specialties  
Axiom Technologies Ltd.  
Provincial Controls  
Transcat  
Cancoppas Limited  
Regional Process Equipment  
Transcat  
Transcat  
Provincial Controls

## Manufacturer / Tradename

Panalarm  
Panalarm  
Panametrics PCI Division  
Papailias  
Paul Mueller  
Pelican  
Penberthy  
Penberthy Instruments  
Penny & Giles  
Pepperl + Fuchs - USA  
Perma-cal Gauges  
Phipps & Bird  
Phoenix Contact  
Pick Heaters  
Polytronics  
Porter Instrument Co. - USA  
Powers Process Control  
Precision Digital  
Precision Digital  
Precision Digital Corp.  
Precision Digital Corporation  
Preso  
Pribusin Inc.  
Prolevel  
Promac  
Promac  
Promag  
Promag  
Promag  
Promass  
Proquip  
Prosonic  
Protek  
Protimeter  
Provincial Enclosures  
Provovox  
Prowirl  
Proximity Controls  
Pulsafeeder  
QSDM  
QSDM  
Quad Tech  
Qualimetrics  
Quality Control Equipment Company  
Quantum  
R.M. Young  
R.P. Adams  
RC Systems  
REBS  
REK RKC  
RGS  
RIMCO - Raingauges  
RIS  
Ralston  
Ralston  
Ramsey Canada  
Raytek  
Raytek  
Raytek/UE  
RdF  
Regal  
Research Control Valves  
Resistoflex  
Rexcon

## Local Sales Representative

Cambridge Controls  
Willer Engineering  
Veronics  
Mentec Sarnia Ltd.  
Mentec Sarnia Ltd.  
Transcat  
Brian Controls  
Hardie Industrial Services Inc.  
Cantech Controls  
Lisle-Metrix Ltd.  
Provincial Controls  
Transcat  
Axiom Technologies Ltd.  
Sharp Valve & Instrumentation  
Transcat  
Lisle-Metrix Ltd.  
Heaters Controls & Sensors Ltd.  
Alpha Controls & Instrumentation  
Armatek Controls  
Ovantium Sales  
Cambridge Controls  
Willer Engineering  
Novatech  
Endress + Hauser  
Armatek Controls  
Transcat  
Endress + Hauser  
Westburne Lytle  
Endress + Hauser  
Spec Sarnia Limited  
Endress + Hauser  
Industrial Technical Services  
Alpha Controls & Instrumentation  
Provincial Controls  
Lakeside Process Control  
Endress + Hauser  
BEP Bestobell Canada Ltd.  
Romatec  
Alpha Controls & Instrumentation  
Willer Engineering  
Transcat  
Transcat  
Ovantium Sales  
Transcat  
Campbell Scientific (Canada) Corp.  
Mentec Sarnia Ltd.  
Cancoppas Limited  
Campbell Scientific (Canada) Corp.  
Heaters Controls & Sensors Ltd.  
Syber Systems Inc.  
Campbell Scientific (Canada) Corp.  
Transcat  
Axiom Technologies Ltd.  
Transcat  
Ovantium Sales  
Heaters Controls & Sensors Ltd.  
Transcat  
Mentec Sarnia Ltd.  
Willer Engineering  
Cancoppas Limited  
Lakeside Process Control  
Sharp Valve & Instrumentation  
Axiom Technologies Ltd.

**Manufacturer / Tradename**

Rexroth  
Rezplast  
Rochester Instrument Systems  
Rohrback Cosasco Systems  
Roper Pump  
Rosemount  
Rosemount Analytical  
Rosemount Analytical  
Rosemount Combustion Control  
Rosemount RS3 Systems  
Rotomation  
Rotronic  
Royce  
Ruffneck  
Rupture Pin Technology  
Rustrak  
S.P.S. Instrument Services  
SPM  
SPS Fibre Form Enclosures  
SSI Equipment  
STI  
Saab  
Samson  
Schlumberger/Neptune Flow Meters  
Scientific Linings & Coatings  
Seacor  
Sealed Unit Parts  
Seametrics Inc.  
Seaward  
Senior Flexonics  
Sensall  
Sensidyne  
Sensidyne Gas Monitors  
Sensortech Systems Inc.  
Serge-Baril  
Servomex  
Setra  
Sfere  
Sfere  
Shan Rod Inc.  
Shand & Jurs  
Shimpo  
Sieger  
Siemens  
Siemens Process Analyzers  
Sierra Monitor  
Signet Scientific  
Sigrist-Photometer Co. - Switzerland  
Silometer  
Simpson  
Sinclair Collins  
Skinner  
Smar  
Smartline  
Sno-Trik  
Solartron  
Soliphant  
Solomat  
South-West Meters  
Southwest Valve  
Sparling  
Staefa  
Stahl

**Local Sales Representative**

Mentec Sarnia Ltd.  
Mentec Sarnia Ltd.  
Sharp Valve & Instrumentation  
Armatek Controls  
U & I Supply  
Rosemount Instruments  
Rosemount Instruments  
Transcat  
Romatec  
Lakeside Process Control  
Axiom Technologies Ltd.  
Alpha Controls & Instrumentation  
Cancoppas Limited  
Mentec Sarnia Ltd.  
Zirco Ltd.  
Transcat  
Sarnia Piping Specialties  
Transcat  
Sarnia Piping Specialties  
Floval Equipment Ltd.  
Axiom Technologies Ltd.  
Brian Controls  
Ovantium Sales  
Sarnia Piping Specialties  
Cantech Controls  
Transcat  
Transcat  
Veronics  
Industrial Technical Services  
Regional Process Equipment  
Alpha Controls & Instrumentation  
Novatech  
Transcat  
Novatech  
Mentec Sarnia Ltd.  
Novatech  
Alpha Controls & Instrumentation  
Cancoppas Limited  
Regional Process Equipment  
Floval Equipment Ltd.  
Sharp Valve & Instrumentation  
Transcat  
Westech Industrial Ltd.  
Alpha Controls & Instrumentation  
Willer Engineering  
Transcat  
Hardie Industrial Services Inc.  
Lisle-Metrix Ltd.  
Endress + Hauser  
Transcat  
Summit Controls Ltd.  
Cantech Controls  
Industrial Technical Services  
Honeywell  
Huron Valve & Fittings  
Westech Industrial Ltd.  
Endress + Hauser  
Transcat  
Sarnia Piping Specialties  
Floval Equipment Ltd.  
Brian Controls  
Industrial Technical Services  
Alpha Controls & Instrumentation

## Manufacturer / Tradename

Statham  
StoneL  
Stonel  
Strahman  
Sugino  
Swagelok Tube Fittings  
Syscon  
Systematix  
T.B. Woods  
TA Instruments  
TBI-Bailey  
TBV  
TDC-3000  
TIF  
TSI  
Tapecoat Canada  
Tate-Andale  
Taylor Hand Actuated Pressure Calibrator  
Techmation  
Techne  
Technipower  
Tegam  
Tektronix  
Tel-Tru  
Tel-Tru  
Tel-Tru Thermometers  
Teledyne Analytical  
Teledyne Combustion Efficiency Analyzer  
Teledyne-Farris Relief Valves  
Telegan  
Telematic  
Tempco  
Tenor Industrial Control  
Testo Inc.  
Testoterm  
Texas Electronics - Raingauges  
Texas Sampling Inc.  
Theben  
Thermo Electric  
Thermo Electric - Calibrators  
Thermo-Kinetics Temperature Products  
Thermon  
Thermor Thermometers  
Thermox  
Time Electronics  
Tomoe Valves  
Tour & Anderson  
Tower-Gard  
Transmation  
Transmation  
Transtector Systems  
Trerice  
Tricentric  
Tripp-Lite  
Triton  
Tytronics Inc.  
U.S. Gauge  
United Electric  
United Electric Controls (Canada) Ltd.  
United Sciences Inc.  
Universal  
Universal Analyzers  
Universal Enterprises

## Local Sales Representative

Sarnia Piping Specialties  
Summit Controls Ltd.  
Regional Process Equipment  
Cantech Controls  
Axiom Technologies Ltd.  
Huron Valve & Fittings  
Heaters Controls & Sensors Ltd.  
Willer Engineering  
Axiom Technologies Ltd.  
Westech Industrial Ltd.  
Elsag Bailey  
Romatec  
Honeywell  
Transcat  
Willer Engineering  
Sarnia Piping Specialties  
Mentec Sarnia Ltd.  
Transcat  
Lakeside Process Control  
Transcat  
Transcat  
Transcat  
Transcat  
Brian Controls  
Transcat  
Hardie Industrial Services Inc.  
Armatek Controls  
Transcat  
Provincial Controls  
BEP Bestobell Canada Ltd.  
Willer Engineering  
Heaters Controls & Sensors Ltd.  
Heaters Controls & Sensors Ltd.  
Baker Instruments Ltd.  
Transcat  
Campbell Scientific (Canada) Corp.  
BEP Bestobell Canada Ltd.  
Davis Controls  
Armatek Controls  
Transcat  
Provincial Controls  
Spec Sarnia Limited  
Provincial Controls  
Willer Engineering  
Transcat  
BEP Bestobell Canada Ltd.  
Floval Equipment Ltd.  
Lisle-Metrix Ltd.  
Cantrols  
Transcat  
Cantech Controls  
Mentec Sarnia Ltd.  
Westburne Lytle  
Transcat  
Mentec Sarnia Ltd.  
Novatech  
Transcat  
Brian Controls  
Cambridge Controls  
Willer Engineering  
Alpha Controls & Instrumentation  
Willer Engineering  
Transcat

**Manufacturer / Tradename**

Unomat  
Vaccon Vacuum Products  
Vaisala  
Vaisala - RH, Barometric Pressure  
Valhalla  
Validyne  
Valtek Controls  
Valve Concepts  
Valvtech  
Varec  
Vector-Vid  
Veeder-Root  
Velan  
Veriflo  
Veris  
Versatile Instruments  
Viatran  
Vista Scientific  
Vitec  
Viz  
Vortec Coolers  
Vortisand  
WSA  
Wabco  
Wahl  
Walker Scientific  
Wallace & Tiernan  
Wallace & Tiernan - Pressure Calibrators  
Warren Jones Engineering - England  
Warrick  
Waterman Industries - USA  
Watts  
Watts  
Wedgewood Technology  
Weed  
Weksler Instruments  
Westech  
Wey Valve  
Whesso Varec  
Whipps Inc. - USA  
Whitey Valves  
Whitman  
Wika  
Wilkerson  
Wilkerson Instrument Co. Inc.  
Williams Instrument Co.  
Winters  
Winters Gauges  
Wood's  
Woodhead  
Worcester  
Worcester Controls  
Xomox  
Y-Z Industries  
Yarway  
Yokogawa  
Zullig

**Local Sales Representative**

Transcat  
Provincial Controls  
Transcat  
Campbell Scientific (Canada) Corp.  
Transcat  
Cancoppas Limited  
Cantrons  
Zirco Ltd.  
Regional Process Equipment  
Westech Industrial Ltd.  
Transcat  
Davis Controls  
Westburne Lytle  
Armatek Controls  
Alpha Controls & Instrumentation  
Sharp Valve & Instrumentation  
Willer Engineering  
Transcat  
Transcat  
Transcat  
Provincial Controls  
Mentec Sarnia Ltd.  
Mentec Sarnia Ltd.  
Mentec Sarnia Ltd.  
BEP Bestobell Canada Ltd.  
Transcat  
J & M Engineering & Sales Ltd.  
Transcat  
Lisle-Metrix Ltd.  
Davis Controls  
Lisle-Metrix Ltd.  
Floval Equipment Ltd.  
Mentec Sarnia Ltd.  
Zirco Ltd.  
Cantech Controls  
Baker Instruments Ltd.  
Westech Industrial Ltd.  
Mentec Sarnia Ltd.  
Westech Industrial Ltd.  
Lisle-Metrix Ltd.  
Huron Valve & Fittings  
Davis Controls  
Sharp Valve & Instrumentation  
Transcat  
J & M Engineering & Sales Ltd.  
Willer Engineering  
Floval Equipment Ltd.  
Provincial Controls  
U & I Supply  
Axiom Technologies Ltd.  
Floval Equipment Ltd.  
U & I Supply  
Regional Process Equipment  
Westech Industrial Ltd.  
Mentec Sarnia Ltd.  
Transcat  
BEP Bestobell Canada Ltd.



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



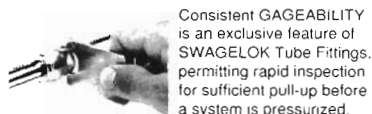
# product release

MS-02-52

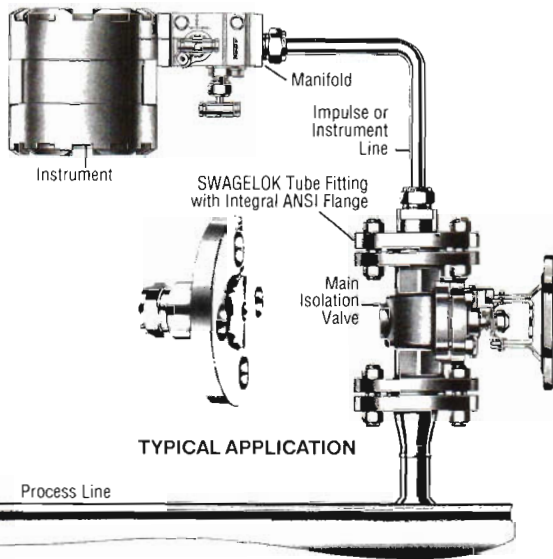
## SWAGELOK® Tube Fittings with Integral ANSI Flanges

SWAGELOK Tube Fitting with Integral ANSI Flanges provide easy connection between process lines and instruments. These flanges are designed to eliminate additional connections.

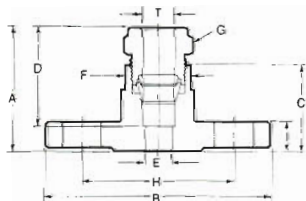
- for use with 1/2", 10mm and 12mm O.D. tubing
- integrally machined forging; no weld seams or joints
- 316 stainless steel
- compatible with ANSI B16.5 - 1988



Consistent GAGEABILITY is an exclusive feature of SWAGELOK Tube Fittings, permitting rapid inspection for sufficient pull-up before a system is pressurized.



### TABLE OF DIMENSIONS



### TYPICAL APPLICATION

### ORDERING INFORMATION

Use SS for 316 stainless steel as a prefix to the Basic Ordering Number. Example: SS-12MF0-F8-300.

	T Tube O.D.	Basic Ordering Number	ANSI Class	A	B	C	D"	E Minimum Opening	F Flats	G Nut Hex	H	I	Ordering Number (Gap Inspection Gage)
in	1/2	-8F0-F8-150	150	1.89	3.5	1.31	1.50	0.41	1	15/16	2.38	0.45	MS-IG-1010
		-8F0-F8-300	300		3.8						2.62	0.57	
10		-10MF0-F8-150	150	48	90	33.3	33.8	7.9	25	22	60.4	11.4	MS-IG-810
		-10MF0-F8-300	300		96						66.5	14.5	
12		-12MF0-F8-150	150	48	90	33.3	38.1	9.5	25	24	60.4	11.4	MS-IG-1010
		-12MF0-F8-300	300		96						66.5	14.5	

Dimensions shown with SWAGELOK nuts finger-tight, where applicable. Dimensions are in inches or mm where indicated, for reference only, subject to change.

① Female SWAGELOK Tube Fittings require modified (longer) Tube Stub ends.



Your Local Authorized SWAGELOK Sales & Service Representative:



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

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## Past-Presidents of the Sarnia Section of I.S.A.

1946/47	Bill Graeb	1971/72	Curt McDonald
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
1956/57	Harold Kohlmeier	1981/82	Wayne Jamieson
1957/58	Ron Asselstine	1982/83	Frank Bandura
1958/59	Mike Hicks	1983/84	John Tranter
1959/60	Mike Hicks	1984/85	Robb Sharp
1960/61	Mike Hicks	1985/86	Ron Kells
1961/62	George Mills	1986/87	Howie Whitton
1962/63	Robert Brayne	1987/88	Joe Lobo
1963/64	Robert Newman	1988/89	Irvin Hawkes
1964/65	Robert Newman	1989/90	Rich Patterson
1965/66	Ted Stock	1990/91	Ken Blair
1966/67	Ted Stock	1991/92	Jim Lomax
1967/68	Bill Rion	1992/93	Bob Kelly
1968/69	Bud Dodds	1993/94	Bill Arundell
1969/70	Ray Wechselberger	1994/95	Larry Corbett
1970/71	Bill Glendon	1995/96	Mike Murray

# **LAKE**SIDE

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Control valves - Globe and rotary

Noise and cavitation reduction control valves

Actuators and positioners - pneumatic, electric electro-hydraulic

REGULATORS - Steam, gas and liquids - tank blanketing

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- Electronic and pneumatic controllers
- FIELDVUE™ - digital valve controllers

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- Diagnostics for pneumatically operated valves
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- Steam Conditioning Valves and Desuperheaters

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- Service:**
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  - Installation and start-up assistance
  - System life management



**DeltaV**

- Scalable process system for small process control applications

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- Proximity limit switches

ISO 9001



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**Lakeside Process Controls Ltd.**

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

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