

TECHNICAL NOTE

New Digital Input/Output Board for Transpector® Gas Analysis System Using TWare 32™

Residual Gas Analyzers (RGAs) have been used in vacuum research applications for 25 years. Their role has changed in the last 10 years, as they evolved from a research instrument to a production tool. As a production tool, the RGA can increase productivity, improve product yield, increase throughput and reduce costs, all of which ultimately increase profits.

TWare 32 is the control software for Transpector RGA instruments. TWare 32 (version 2.50 or higher), will support a Digital Input/Output Board (hereafter called “Digital I/O Board”) to remotely start and/or stop recipes via the inputs, while the outputs operate as contact closure relays based on customer selectable setpoints.

Using the Digital I/O Board with TWare 32 extends the Transpector’s capabilities by making data collection more closely coincide with process events. The availability of additional set point relay outputs allows the Transpector to be included in more process control decisions, increasing the Transpector’s usefulness by making it an integral part of the process.

BETTER PROCESS CONTROL




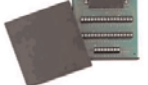

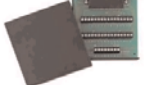
TWare 32 (version 2.50 or higher) can start and stop recipes based on external events through the use of a PCI-bus Digital I/O Board(s) installed in the PC. Using external inputs as recipe triggers allows data collection to be synchronized with the process. TWare 32 also provides outputs (relays) to indicate when a particular mass has crossed a recipe-determined set point. These relay outputs are in addition to set point relays available in the Transpector electronics module.

The Digital I/O Board(s) supplied by INFICON provides eight (or sixteen) channels of optically isolated digital inputs and eight (or sixteen) channels of electromechanical relay outputs.* Inputs can be driven by control voltages of 5 to 28 V(dc) and are isolated to 500 V. The digital input has a response time of about 5 milliseconds. The outputs are reed relays configured as five form C contacts and three form A contacts (per board) with a default setting normally open for

each. The contacts are rated for 6.0 amps at 120 V(ac) or 28 V(dc) resistive load. Operation time of the contact is typically 20 milliseconds.

Digital I/O Board Kits – There are two kits (8 channels and 16 channels) for the TWare 32 Digital I/O Board.

Kit P.N. 911-261-G2 (8 channels) includes:

Qty	Description	Image	Image
1	Digital Input Board for PCI Bus by Measurement Computing (PCI-PDISO8)		
1	37 pin screw terminal board (CIO-MINI37)		
1	Plastic enclosure for screw terminal board (ENC-MINI37)		
1	3 ft., 37 pin cable, female D connector each end (C37FF-3)		
1	PCI-PDISO8 User's Manual		
1	CD with software drive		








8 Electromechanical relays, 8 isolated (500V) digital input board for PCI bus

3' 37 Conductor ribbon cable, female connectors each end

4 x 4 Universal screw terminal

Plastic enclosure for CIO-MINI37

Kit P.N. 911-261-G4 (16 channels) includes:

Qty	Description	Image	Image
2	Digital Input Board for PCI Bus by Measurement Computing (PDI-PCISO8)		
1	Shielded enclosure (SCB-37)		
2	3 ft., 37 conductor ribbon cable, female connectors each end (C37FF-3)		
1	PCI-PDISO8 User's Manual		
1	CD with software driver		

8 Electromechanical relays, 8 isolated (500V) digital input board for PCI bus

37 Conductor, shielded signal connection box

3' 37 Conductor ribbon cable, female connectors each end

*Sixteen channel capability requires two boards.

INSTALLING THE DIGITAL I/O BOARD

For instructions and precautions on how to install the board(s) in your computer, refer to the TWare 32 Operating Manual. The Digital I/O Board is a PCI-bus Board and should be recognized as a plug-and-play device by the operating system. The basic installation procedure is to remove power from the computer, install the Digital I/O Board, reapply power and start the computer. The operating system will recognize the Digital I/O Board and request that a driver be installed. The driver is on the CD supplied with the board. Hardwire connections are made between the terminal block and the process components to provide the necessary inputs or receive the output signals.

OPERATION

Tware 32 will recognize the Digital I/O Board once the board(s) is installed and recognized by the computer. On the "System Properties" (fig. 1) page, there is a tab for Input/Output setup.

From this page, you can set the inputs active high or active low, see the current state of each input, set the output configuration as active open or active closed, see the current state of each output, and test each output. When the "Test...Off" button is clicked, the output state will change as indicated on the display. This provides a means to "test" the outputs before actually wiring them to a control circuit.

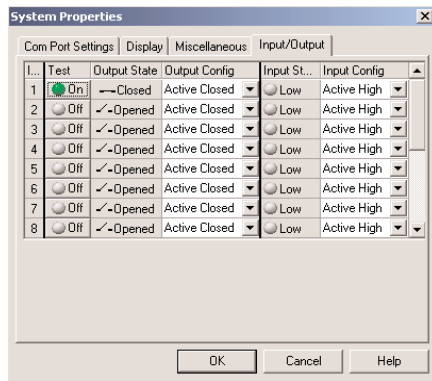


Figure 1

Recipes can be activated from the external inputs. This can be set up using the TWare 32 Recipe Editor's "Scheduler" page (fig. 2). Here you can select which input and condition will start the recipe. Likewise, the recipe stop condition can also be set.

For added flexibility and process control, the outputs of the Digital I/O Board operate as contact closure relays, much like those installed in the Transpector electronics module.

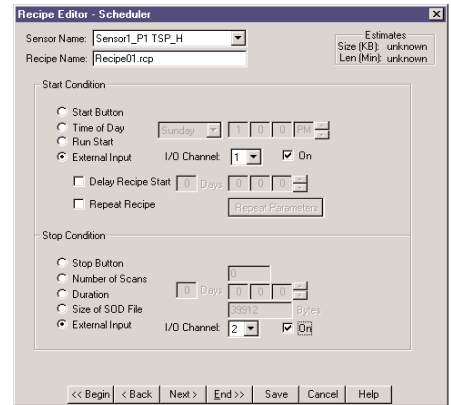


Figure 2

The relays activate when a programmed mass crosses a recipe-determined set point. Relays can be enabled to activate when a high set point is exceeded, or if a mass value falls below a low set point, or a range of operation can be set between enabled high and low set point values. These masses and their particular set point values are assigned from the "I/O Relays" page in the Recipe Editor, as shown in fig. 3.

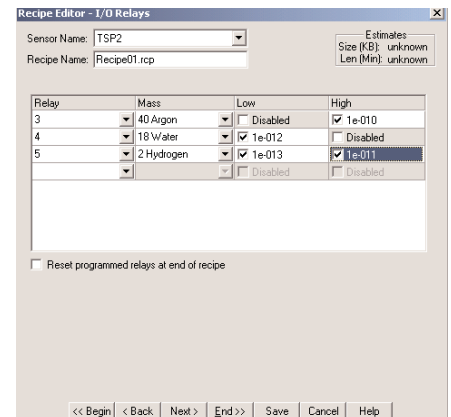


Figure 3

For more information or technical support, contact us at 315.434.1100.



GLOBAL HEADQUARTERS:

Two Technology Place, East Syracuse, NY 13057 USA
Tel: +1.315.434.1100 Fax: +1.315.437.3803 E-mail: reachus@inficon.com

UNITED STATES FRANCE GERMANY LIECHTENSTEIN SWITZERLAND UNITED KINGDOM CHINA JAPAN KOREA SINGAPORE TAIWAN

Visit our website for sales offices worldwide. www.inficon.com
Transpector is a registered trademark and TWare32 is a trademark of INFICON.
aicb65a1 ©2003 INFICON