**Digital control of DC power by USB!!**

The PIA4850 is a power supply controller with USB interface to control Kikusui DC power supply with TP-BUS. PAS Series, PWR Series or other models that equips TP-BUS can be digitally controled by PC, as well as for read-back of output values and status monitoring. It operates using bus power and with its simple system and compact structure, you can use whenever you need with easy setup.

- USB 2.0 compatible
- Can be used with Windows Vista/XP/2000.
- Operates using bus power. Requires no AC adapter.
- Bus power operation. No AC adapter required.
- Allows read-back of output values and status monitoring.
- Can control up to 32 DC power supplies that equip TP-BUS. (Different power supply models can be combined.) TP-BUS connection can be extended up to 200 m. Ideal for remote monitoring!

### With Wavy ...

**WAVY Sequence Creation Software**
Sequence can be created and edited by drawing with the mouse or by inputting with a spreadsheet. A trial version available at our Kikusui website!!

### With Excel ...

**Sequence** can be created and edited by drawing with the mouse or by inputting with a spreadsheet. A trial version available at our Kikusui website!!

### With LabVIEW ...

- USB 2.0 compatible
- Can be used with Windows Vista/XP/2000.
- Operates using bus power. Requires no AC adapter.
- Bus power operation. No AC adapter required.
- Allows read-back of output values and status monitoring.
- Can control up to 32 DC power supplies that equip TP-BUS. (Different power supply models can be combined.) TP-BUS connection can be extended up to 200 m. Ideal for remote monitoring!

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*1: The maximum controllable units are 31 when the connections include PAM series or PMR series unit.
*2: TP-BUS (Twist-Pair BUS) is an original Kikusui interface.
How does the PIA4850 fit for my application? How many ★ do you get?

PIA4850 recommendation chart by the DC power supply type and its application

START

Do you use a Kikusui DC power supply?

yes

no

Is it a model that equips TP-BUS (such as PAS or PWR)?

no

yes

Is it a model with external analog control function?

no

yes

Do you use a PC to control the power supply, or would you like to?

yes

no

We hope that you will consider one of our products. Demonstration units are available. Please contact a Kikusui distributor.

Even for our power supply that does not equip TP-BUS, using PIA4800 Series (PIA4820) additionally enables it to be controlled via PIA4850.

● Refer to the following on the page to the right.

Basic Operation

Applications

Our best solution for these requests!

Compatible with the PAS Series and PWR Series!

Sequence Creation Software Wavy

Wavy for PAS&PWR

This software supports to create and execute sequences of DC power supply. Sequences can be created and edited by drawing with the mouse or by inputting in a spreadsheet.

- Easily create and edit the test conditions data for sequence operation.
- Easily manage test conditions template using the function for saving test condition data files.
- The execution graph function displays the execution status as a cursor on the settings graph, and can be used to verify the progress of the execution sequence.
- Easy to monitor the actual output using the monitor graph function that plots the monitored output values during test execution.
- The acquired monitor data can be saved as the test results.


*Refer to the Kikusui products catalog and website for detail of Wavy.

Creating sequence conditions

The sequence can be created in one of two ways: either by using the mouse or by numerical input!!

Test results

Results are saved in text format, allowing them to be easily viewed using spreadsheet software.

Congratulations. The PIA4850 is perfect for you. We highly recommend it.

Do you want to create sequences and automate testing?

yes

no

And more!

For purposes such as these, the automated testing support software WAVY provides even greater utility!

Do you want to collect records of test results in electronic files?

yes

no

In what cases is the PIA4850 right for you?

Please check here!
The convenience of USB and the expandability of TP-BUS give a tremendous boost to the potential of DC power supplies.

Proposed set-ups of the PIA4850 <Basic Operation / Applications / Additional Function>

**Basic Operation**
Simple is best! For simple and straightforward operation.

**Applications**
For controlling multiple power supplies (even different models) together.

**Additional Function**
For connecting an external analog control-type power supply (without TP-BUS).

* For information concerning the connection of the PIA4800 Series and a power supply without TP-BUS, control details, and other information, refer to the PIA4800 Series catalog or contact Kikusui.
**Control Description**

<table>
<thead>
<tr>
<th>DC Power Supply Series</th>
<th>PAS</th>
<th>PWR</th>
<th>PAM</th>
<th>PMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output voltage setting</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Output current setting</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Query for output voltage setting value</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Query for output current setting value</td>
<td>○</td>
<td>×</td>
<td>×</td>
<td></td>
</tr>
<tr>
<td>Output voltage value read-back</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Output current value read-back</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Designation/Query of output channel number</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
</tr>
<tr>
<td>Designation of output channel number to display</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>○</td>
</tr>
<tr>
<td>Overvoltage protection activation point setting</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Overcurrent protection activation point setting</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Query for overcurrent protection activation point</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Output ON/OFF</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>×</td>
</tr>
<tr>
<td>Power switch shutoff</td>
<td>○</td>
<td>○</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>Panel lock ON/OFF</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

Note: For power supply with analog control function, refer to the PIA4800 Series catalog or contact Kikusui.

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**PIA4850 Specifications**

<table>
<thead>
<tr>
<th>Item</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connections</td>
<td>The connections given below are possible using the provided TP-BUS connector. Expansion unit PIA4850: 4 units can be connected. (Extension length: Maximum 200 m, Twist count: 1: time/cm or more)</td>
</tr>
<tr>
<td>Number of controlled units</td>
<td>PAS Series: Maximum 32 units, PWR Series: Maximum 32 units, PAM Series: Maximum 31 units, PMR Series: Maximum 31 units</td>
</tr>
<tr>
<td>Polarity</td>
<td>None</td>
</tr>
<tr>
<td>Conforming power wiring</td>
<td>Twisted wire: 0.32 mm² (AWG22), Extended length: Maximum 200 m, 0.20 mm² (AWG24), Extended length: Maximum 20 m</td>
</tr>
<tr>
<td>USB</td>
<td>Conforms to USB 2.0 specifications, and to USBTMC-USB488 device class specifications. Communications speed: 12 Mbps (full speed) (High power device (power consumption: 200 mV), Extended length: Maximum 200 m)</td>
</tr>
<tr>
<td>OS</td>
<td>Windows2000 Professional (SP4 or later), Windows XP Professional (SP2 or later, 32-bit versions), Vista Home Premium, Business, Ultimate (32-bit versions)</td>
</tr>
<tr>
<td>VISA specifications</td>
<td>Ver. 3.0 or higher</td>
</tr>
<tr>
<td>Operating ambient temperature/Humidity range</td>
<td>0°C to 40°C, 10% rh – 90% rh (No condensation)</td>
</tr>
<tr>
<td>Storage ambient temperature/Humidity range</td>
<td>-20°C to 70°C, 10% rh – 90% rh (No condensation)</td>
</tr>
<tr>
<td>Installation location</td>
<td>Indoors, maximum height 2000 m</td>
</tr>
<tr>
<td>Safety</td>
<td>Conforms to Low-Voltage Directives 73/23/EEC, EN61010-1 Class III, Pollution Degree 2.</td>
</tr>
<tr>
<td>Dimensions/Weight</td>
<td>95W × 58D × 18H mm / Approximately 100 g</td>
</tr>
<tr>
<td>Accessories</td>
<td>USB cable (1 m), TP-BUS connector, TP-BUS cable (1 m), Magnet sheet for fastening the base CD (instruction manual, driver files, sample programs, etc.)</td>
</tr>
</tbody>
</table>

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**Required Drivers and Components**

<table>
<thead>
<tr>
<th>Component</th>
<th>VISA (including USB-TMC driver)</th>
<th>PIA4850 Instrument driver</th>
<th>IVI-COM/C</th>
<th>IVI Shared Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drivers</td>
<td>Required</td>
<td>Required</td>
<td>Not required</td>
<td>Required in some cases</td>
</tr>
<tr>
<td>Software</td>
<td>WAVI application software</td>
<td>VB, VBA, VC++</td>
<td>LabVIEW</td>
<td></td>
</tr>
</tbody>
</table>

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**PIA4850 Q&A**

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are there restrictions on the power supplies that can be connected?</td>
<td>The power supplies equip the Kikusui digital interface (TP-BUS), then up to 32 units may be connected. (The maximum is 31 for PAM and PMR series units)</td>
</tr>
<tr>
<td>Is it possible to control power supplies that do not equip TP-BUS?</td>
<td>For power supplies that do not equip TP-BUS, control from the control board (OP01-PIA or OP02-PIA) is possible by connecting the expansion unit (PIA4820).</td>
</tr>
<tr>
<td>Are there restrictions on the PC that is connected?</td>
<td>A PC with a USB interface is running one of the following OS is required. Windows Professional (SP4 or later), Vista XP Professional (SP2 or later, 32-bit versions), Vista Home Premium, Business, Ultimate (32-bit versions)</td>
</tr>
<tr>
<td>What is the communications speed? (How much time is required for one command?)</td>
<td>The control time varies depending on the power supply that is being controlled, and also on the number of controlled power supplies and the PC performance. As an example, when controlling one PWR series unit, approximately 100 ms are required in order to send the command and start operation of the device.</td>
</tr>
<tr>
<td>Is it possible to operate devices other than Kikusui VISA?</td>
<td>The PIA4850 conforms to USBTMC specifications. VISA from other companies that include compatible drivers can also be operated. USBTMC stands for USB Test &amp; Measurement Class.</td>
</tr>
</tbody>
</table>

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**Distributor:**

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