IHP24
Intelligent Hydraulic Positioner
Val Controls A/S

Intelligent valve control based on the latest know-how concerning digital technology for advanced valve control, monitoring and testing suited for pneumatic and hydraulic actuators. Our key task is to assist valve and actuator manufactures in finding the optimal solution for control, monitoring or testing of their products. We discover the best solutions for hazardous areas and harsh environments combined with cost reduction potentials.
Presentation

Val Controls develops and manufacture Intelligent Electro Hydraulic Positioners. They are used for valve positioning and have an integrated microprocessor with very flexible software, so the positioner fits almost any hydraulic, pneumatic, rotary, linear, double-acting, spring return and stepping actuator on the market.

The IHP24 range offers several advantages.

- Smart positioner for hydraulic actuators
- Automatic intelligent calibration
- Intelligent valve positioning
- User-friendly menu
- Flexible and configurable
- Ultra low power design
- Easy error handling
- Intrinsically safe version
- Compact flame proof (Ex d) version in SS316
- ATEX and IECEx approved

The IHP24 range offers the best in performance and user-friendliness, combining these in a very compact enclosure.
IHP24 Intelligent Hydraulic Positioner

IHP24-B and IHP24-BF
Basic and Basic Flameproof

The Basic edition of the IHP24 range is an affordable positioner. This unit is very easy to install and adjust. It offers a very simple but efficient way to achieve positioning of a valve with a hydraulic control system.

The positioner has an advanced calibration process which in combination with the regulator provides fast and reliable positioning of actuators. The user-friendly interface makes it easy to use and configure.

IHP24-A and IHP24-AF
Advanced and Advanced flameproof

The Advanced model is the most flexible positioner in the range. The standard configuration is designed to be able to handle all tasks a positioner could be used for. Furthermore it is equipped with an extension interface which makes it possible to add extra hardware functionality on customer request.

The IHP24-A offers a large range of connection possibilities. It offers inputs for several 4-20mA sensors and digital signals which make it possible to configure the positioner to control or monitor other applications connected to the valve.
IHP24 Intelligent Hydraulic Positioner

IHP24-I

Intrinsically safe
The IHP24-I has been designed to be installed in potentially explosive atmospheres. The positioner is designed to be intrinsically safe and can be used in intrinsically safe systems.

The positioner has an advanced calibration process which in combination with the regulator provides fast and reliable positioning of hydraulic valves. The user-friendly interface makes it easy to use and set-up.

IHP24-F

Flameproof
The IHP24-F has been designed to be installed in potentially explosive atmospheres and is mounted directly on the actuator. It has a build in non-contact position transmitter and offers the option of adding limit switches.

The positioner has an advanced calibration process which in combination with the regulator provides fast and reliably positioning of valves.
Communication

IHP24 can be used with the following communication types:

- HART and WirelessHART
- Modbus
- Foundation Fieldbus
- Bluetooth Ex mobile phone/tablet
- USB
User interface

Model BF, AF and A have the following user interface features:

- USB connection
- Graphical display
- 4 button keyboard
- Status indicators:
  - Open
  - Closed
  - Moving
  - ESD
  - Local
  - Pump
  - MT locked (only BF and AF)

MTControl

When IHP24-AF and BF are installed in hazardous area, opening of the enclosure is not allowed. Therefore it is not possible to operate the unit using the keyboard. By adding MTControl, it is now possible to operate the keyboard through the enclosure glass window using a magnetic pen. MTControl locks automatically when not used, to prohibit unattended use. MTControl can be configured so it only can be activated by pressing a 4 digit code.
Control stations
Integrated or stand-alone

All control stations are installed directly on the terminal box or as stand-alone. The control station functions are standard functions in all models.

- Remote/local-open/close operation
- Local position indicator: Open/close
- Local reset: Ready to reset and reset
- ESD input
- Error output
Specifications

**IHP24-BF**
Dimensions lxwxh: 137x155x140mm
Weight: 4kg
Ex approval: ATEX/IECEx - II 2 GD
Ex d IIC T4-T6

**IHP24-AF/BF standard**
Dimensions lxwxh: 337x200x160mm
Weight: 7kg
Ex approval: ATEX/IECEx - II 2 GD
Ex d IIC T4-T6 and Ex e IIC T4-T6

**IHP24-AF/BF custom**
Dimensions lxwxh: custom
Weight: custom
Ex approval: custom
**IHP24 Intelligent Hydraulic Positioner**

### IHP24-A and IHP24-B
Dimensions lxwxh: 157x116x58mm
Dimensions lxwxh: 70x116x58mm
Weight: 0.5kg
Ex approval: None

### IHP24-I
Dimensions lxwxh: 70x116x58mm
Weight: 0.5kg
Ex approval: ATEX/IECEX - II 2 GD
Ex ia IIC T4-T6

### IHP24-F
Dimensions lxwxh: 177x150x150mm
Weight: 6kg
Ex approval: ATEX/IECEX - II 2 GD
Ex d [ib] IIC T4-T6
<table>
<thead>
<tr>
<th>Model</th>
<th>BF Standard</th>
<th>BF Custom</th>
<th>AF Standard</th>
<th>AF Custom</th>
<th>B</th>
<th>A</th>
<th>I</th>
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<tbody>
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<td>Remote/local-open/close operation</td>
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<td>Local position indicator: Open/close</td>
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<td>Local reset: Ready to reset and reset</td>
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<td>●</td>
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<td>●</td>
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<tr>
<td>ESD input</td>
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<tr>
<td>Error output</td>
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<td>In and outputs</td>
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<td>AI: 4-20mA control loop</td>
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<td>DC: Digital output</td>
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<td>6</td>
<td>4</td>
<td>6</td>
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<td>4</td>
<td>4(13)</td>
<td>0(1)</td>
<td>4(13)</td>
<td>3</td>
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<td>1(2)</td>
<td>5</td>
<td>1</td>
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<td>AI: 4-20mA sensors</td>
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<td>+80°C</td>
<td>-40° -60°C</td>
<td>+80°C</td>
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<td>Ex i</td>
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Standard = ●  
optional = ○  
contact Val Controls = *
# Model selector – IHP24-BF

<table>
<thead>
<tr>
<th>Product name</th>
<th>Type</th>
<th>Terminal box</th>
<th>Control station</th>
<th>Communication 1</th>
<th>Communication 2</th>
<th>Expansion card</th>
<th>Software features</th>
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<tr>
<td>IHP24</td>
<td>BF</td>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
<td>D</td>
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</tbody>
</table>

**BF - standard**
- A1 Terminal box
- None
- E Standard terminal box with spare term: 4 grey + 2 PE
- I Standard terminal box with spare term: 4 grey + 2 PE, 4 blue + 2 PE
- A2 Control station
  - None
- B1 Communication 1
  - None
  - 10 HART – Control loop
- B2 Communication 2
  - 00 None
  - 01 Expansion card
  - 02 None
- D Software features
  - None

Model example: IHP24-BF-100000

**BF - custom**
- A1 Terminal box
  - Customized terminal box
  - A2 Customized Control station
  - B1 Communication 1
    - 00 None
    - 10 HART – Control loop
  - 11 HART – Transmitter loop
  - 12 Wireless HART
    - 21 Modbus HTU
    - 30 Foundation Fieldbus H1
  - B2 Communication 2
    - 00 None
    - 01 Expansion card
    - 02 None
    - 05 1 x Motor relay direct/reverse
  - D Software features
    - None
  - E Custom identification
    - XX To identify custom made units

Model example: IHP24-BF-100000-A1
# Model selector – IHP24-AF

<table>
<thead>
<tr>
<th>Product name</th>
<th>Type</th>
<th>Terminal box</th>
<th>Control station</th>
<th>Communication 1</th>
<th>Communication 2</th>
<th>Expansion card</th>
<th>Software features</th>
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<tr>
<td>IHP24</td>
<td>AF</td>
<td>A1</td>
<td>A2</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
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</tbody>
</table>

**AF - standard**

- **A1** Terminal box
  - Standard terminal box with spare term: 4 grey + 2 PE
- **A2** Control station
  - None
- **B1** Communication 1
  - None
- **B2** Communication 2
  - None
- **C1** Expansion card
  - None
  - **00** None
  - **01** 2 x AO (4-20mA - active)
  - **10** 2 x AO (4-20mA - passive) and 2 x digital input
  - **11** 2 x AO (4-20mA - passive) and 2 x digital input
  - **12** Wireless HART
  - **21** Modbus RTU
  - **30** Foundation Fieldbus H1
  - **40** 4 x DI
  - **50** 1 x Motor relay direct/reverse
- **D** Software features
  - None
  - **10** None
  - **11** Advanced regulation using 4-20mA proportional valve
  - **12** Advanced regulation using 4-20mA proportional valve – Expansion card 01
  - **21** Custom identification
  - **22** To identify custom made units

**Model example:** IHP24-AF-100000-C

**AF - custom**

- **A1** Terminal box
  - Customized terminal box
- **A2** Control station
  - Customized control station
- **B1** Communication 1
  - None
- **B2** Communication 2
  - None
- **C1** Expansion card
  - None
  - **00** None
  - **01** 2 x AO (4-20mA - active) and 2 x digital input
  - **02** 4 x DI
  - **03** 2 x AO (4-20mA - passive) and 2 x digital input
  - **05** 1 x Motor relay direct/reverse
  - **D** Software features
    - None
    - **10** None
    - **11** Advanced regulation using 4-20mA proportional valve – Expansion card 01
    - **21** Custom identification
    - **22** To identify custom made units

**Model example:** IHP24-AF-100000-C-A1
# Model selector – IHP24-B

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<th>Software features</th>
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<td>B</td>
<td>-</td>
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<td>B2</td>
<td>C1</td>
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</table>

- **B1**: Communication 1
  - 00: None
  - 10: HART – Control loop
  - 11: HART – Transmitter loop
  - 21: Modbus RTU

- **B2**: Communication 2
  - 00: None
  - C1: Expansion card
  - D: Software features
    - -: None
  - E: Custom identification
    - XX: To identify custom made units

Model example: IHP24-B-100000-R1

# Model selector – IHP24-A

<table>
<thead>
<tr>
<th>Product name</th>
<th>Type</th>
<th>Communication 1</th>
<th>Communication 2</th>
<th>Expansion card 1</th>
<th>Software features</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHP24</td>
<td>A</td>
<td>-</td>
<td>B1</td>
<td>B2</td>
<td>C1</td>
</tr>
</tbody>
</table>

- **B1**: Communication 1
  - 00: None
  - 10: HART – Control loop
  - 11: HART – Transmitter loop
  - 21: Modbus RTU
  - 30: Foundation Fieldbus H1

- **B2**: Communication 2
  - 00: None
  - C1: Expansion card
  - 01: 2 x AO (4-20mA - active) and 2 x digital input
  - 02: 4 x DI
  - D: Software features
    - -: None
    - C: Advanced regulation using 4-20mA proportional valve – Expansion card 01
  - E: Custom identification
    - XX: To identify custom made units

Model example: IHP24-A-Z100001-C-A1
## Model selector – IHP24-I

<table>
<thead>
<tr>
<th>Product name</th>
<th>Type</th>
<th>Communication 1</th>
<th>Communication 2</th>
<th>Expansion card 1</th>
<th>Software features</th>
</tr>
</thead>
<tbody>
<tr>
<td>IHP24</td>
<td>I</td>
<td>B1</td>
<td></td>
<td></td>
<td>D</td>
</tr>
</tbody>
</table>

- **B1**: Communication 1
- **00**: None
- **10**: HART – Control loop
- **B2**: Communication 2
- **00**: None
- **C1**: Expansion card
- **00**: None
- **D**: Software features
- **-**: None

Model example: IHP24-I-100000
# IHP24 Intelligent Hydraulic Positioner

## Model selector – IHP24-F

<table>
<thead>
<tr>
<th>Feature</th>
<th>A1</th>
<th>A2</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model example:</strong></td>
<td>IHP24-F-1000S11B</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Limit switch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>V3 Mechanical Switches</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SPDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mag Prox Reed Switch</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SPDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P&amp;F - NJ2-V3-N</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Namur inductive</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Maxx Guard switch</td>
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<td></td>
<td></td>
<td></td>
<td>SPDT</td>
<td></td>
<td></td>
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<tr>
<td><strong>Contact material</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Silver Plated Steel</td>
<td>Solid Rhodium</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Current ratings</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>16 Amp @ 125 or 250 VAC 0.6 Amp @ 125 VDC 0.3 Amp @ 250 VDC</td>
<td>1 Amp max.</td>
<td>Target On - &lt;1 mA Target Off - &gt;3 mA</td>
<td>Steady State 0-0.30 A Switched max. 0.30 A Inrush max. 1A Leakage 0A</td>
<td></td>
</tr>
<tr>
<td><strong>Power Rating</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>10W/VA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Voltage</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>Max. 120V AC/DC</td>
<td>5 VDC (5-25 VDC)</td>
<td>Max. 48 VDC / 125 VAC</td>
<td></td>
</tr>
<tr>
<td><strong>Voltage Drop max.</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-</td>
<td>-</td>
<td>0.1V @ 10 mA 0.5 V @ 100 mA</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature range</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-40°C to +80°C</td>
<td>-40°C to +80°C</td>
<td>-25°C to +100°C</td>
<td>-40°C to +80°C</td>
<td></td>
</tr>
</tbody>
</table>