Pressure control valves type AGIR, AGIS, AGIU

two stage, subplate mounting, ISO 5781 sizes 10, 20 and 32

Two stage pressure control valves with balanced poppet designed to operate in oil hydraulic systems.
AGIR: pressure reducing;
AGIS: sequence;
AGIU: unloading.

In standard versions the piloting pressure of the poppet \( \text{①} \) of the main stage \( \text{②} \) is regulated by means of a grub screw protected by cap \( \text{③} \) in the cover \( \text{④} \).
Optional versions with setting adjustment by handwheel \( \text{⑤} \) instead of the grub screw are available on request.
Clockwise rotation increases pressure.

Unloading valves AGIU can be equipped with a venting solenoid valve \( \text{⑥} \) type:
- DHI for AC and DC supply, with cURus certified solenoids
- DHE for AC and DC supply, high performances with cURus certified solenoids

Mounting surface: ISO 5781 size 10, 20 and 32
Max flow:
AGIR = 160, 300, 400 l/min
AGIS = 200, 400, 600 l/min
AGIU = 100, 200, 300 l/min
Pressure up to 350 bar

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### TABLE C070-15/E

<table>
<thead>
<tr>
<th>MODEL CODE</th>
<th>1</th>
<th>20 / 10 / 210 / V</th>
<th>Y</th>
<th>X **</th>
<th>24DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGIRR-20/***/V</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AGIU-10/11...-E</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**1** MODEL CODE

Pressure control valves
subplate mounting
AGIR = pressure reducing
AGIS = sequence
AGIU = unloading

Only for AGIR and AGIS:
- \( R \) = with check valve
- \( - \) = without check valve

Size: 10 20 32

Optional solenoid valve for venting (1)
10 = venting with de-energized solenoid
11 = venting with energized solenoid

Pressure range:
50 = 4÷50 bar (AGIR*);
210 = 4÷210 bar;
350 = 8÷350 bar

Options (2):
- \( V \) = regulating handwheel instead of a grub screw protected by cap
- \( VF \) = regulating knob instead of a grub screw protected by cap (only for AGIS, AGIU)
- \( VS \) = manual override with safety locking instead of a grub screw protected by cap (only for AGIS, AGIU)

Only for AGIU:
- \( D \) = internal drain
- \( WP \) = prolonged manual override protected by rubber cap (1)
- \( - \) = standard unloading characteristics
- \( 5, 6, 7 \) = other unloading characteristics, see section 5

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(1) Only for AGIU with solenoid valve for venting (2) For handwheel features, see technical table K150
### 3.1 Coils characteristics

<table>
<thead>
<tr>
<th>Insulation class</th>
<th>DHI pilot</th>
<th>DHE pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H (180°C)</td>
<td>H (180°C)</td>
</tr>
<tr>
<td></td>
<td>for DC coils</td>
<td>F (155°C)</td>
</tr>
<tr>
<td></td>
<td>for AC coils</td>
<td>for AC coils</td>
</tr>
<tr>
<td>Protection degree to DIN EN 60529</td>
<td>IP 65</td>
<td>(with connectors 666, 667, 669 or E-SD correctly assembled)</td>
</tr>
<tr>
<td>Relative duty factor</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Supply voltage and frequency</td>
<td>See electric feature</td>
<td></td>
</tr>
<tr>
<td>Supply voltage tolerance</td>
<td>± 10%</td>
<td></td>
</tr>
<tr>
<td>Certification</td>
<td>cURus North American standard</td>
<td></td>
</tr>
</tbody>
</table>
**REGULATED PRESSURE VERSUS FLOW DIAGRAMS** based on mineral oil ISO VG 46 at 50°C

**AGIR-10**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**AGIR-20**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**AGIR-32**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**AGIS-10, AGIU-10**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**AGIS-20, AGIU-20**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**AGIS-32, AGIU-32**

```
Flow rate [l/min]
```

```
Regulated pressure [bar]
```

**Note:** for AGIU-10, the max flow rate is 100 l/min

**Note:** for AGIU-20, the max flow rate is 200 l/min

**Note:** for AGIU-32, the max flow rate is 300 l/min

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**OPERATING DIAGRAM**

**based on mineral oil ISO VG 46 at 50°C**

1 = AGIR-10 A → B  
2 = AGIR-20 A → B  
3 = AGIR-32 A → B  
4 = AGIR-10 B → A  
5 = AGIR-20 B → A  
6 = AGIR-32 B → A  
7 = AGIS-10  
8 = AGIS-20  
9 = AGIS-32

**Opening/closing diagram for AGIU**

1 = AGIU-**/...(standard)  3 = AGIU-**/.../6  
2 = AGIU-**/.../5  4 = AGIU-**/.../7

**NOTES**

1) Short pipes with low resistance must be used between the unloading valve and the accumulator;

2) When the resistance is high, the hydraulic pilot signal must be taken as closed as possible to the accumulator;

3) With high pump flow and small valve differential pressure of intervention it is advisable to use the version with external drain;

4) When to use the BA-*25 subplates:
   
a) in applications with working frequencies >10 Hz use subplates type BA-*25/4 (spring with 4 bar of cracking pressure);
   
b) in applications with working frequencies <10 Hz use subplates type BA-*25/2 (spring with 2 bar of cracking pressure):
6 ELECTRIC CONNECTORS ACCORDING TO DIN 43650 FOR AGIU WITH SOLENOID VALVE

The connectors must be ordered separately

<table>
<thead>
<tr>
<th>Code of connector</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>666</td>
<td>Connector IP-65, suitable for direct connection to electric supply source</td>
</tr>
<tr>
<td>667</td>
<td>As 666 connector IP-65 but with built-in signal led, suitable for direct connection to electric supply source</td>
</tr>
</tbody>
</table>

For other available connectors, see tab. E010 and K500

7 ELECTRIC FEATURES FOR AGAM WITH SOLENOID VALVE

<table>
<thead>
<tr>
<th>Solenoid valve type</th>
<th>External supply nominal voltage ± 10% (1)</th>
<th>Voltage code</th>
<th>Type of connector</th>
<th>Power consumption (3)</th>
<th>Code of spare coil</th>
<th>Colour of coil label</th>
<th>Code of spare coil</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC</td>
<td>12 DC</td>
<td>12 DC</td>
<td>666 or 667</td>
<td>33 W</td>
<td>COU-12DC</td>
<td>green</td>
<td>COU-12DC</td>
</tr>
<tr>
<td></td>
<td>24 DC</td>
<td>24 DC</td>
<td></td>
<td>30 W</td>
<td>COU-24DC</td>
<td>red</td>
<td>COU-24DC</td>
</tr>
<tr>
<td></td>
<td>110 DC</td>
<td>110 DC</td>
<td></td>
<td></td>
<td>COU-110DC</td>
<td>black</td>
<td>COU-110DC</td>
</tr>
<tr>
<td></td>
<td>220 DC</td>
<td>220 DC</td>
<td></td>
<td></td>
<td>COU-220DC</td>
<td>black</td>
<td>COU-220DC</td>
</tr>
<tr>
<td>AC</td>
<td>110/50 AC (2)</td>
<td>60 VA</td>
<td>60 VA</td>
<td>58 VA</td>
<td>COI-110/50/60AC</td>
<td>yellow</td>
<td>COE-110/50/60AC</td>
</tr>
<tr>
<td></td>
<td>120/60 AC</td>
<td>60 VA</td>
<td>60 VA</td>
<td>58 VA</td>
<td>COI-120/60AC</td>
<td>white</td>
<td>COE-120/60AC</td>
</tr>
<tr>
<td></td>
<td>230/50 AC</td>
<td>60 VA</td>
<td>60 VA</td>
<td>58 VA</td>
<td>COI-230/50/60AC</td>
<td>light blue</td>
<td>COE-230/50/60AC</td>
</tr>
<tr>
<td></td>
<td>230/60 AC</td>
<td>60 VA</td>
<td>60 VA</td>
<td>58 VA</td>
<td>COI-230/60AC</td>
<td>silver</td>
<td>COE-230/60AC</td>
</tr>
</tbody>
</table>

(1) For other supply voltages available on request see technical tables E010, E015.
(2) Coil can be supplied also with 60 Hz of voltage frequency: in this case the performances are reduced by 10 ÷ 15% and the power consumption is 55 VA (DHI) and 58 VA (DHE)
(3) Average values based on tests performed at nominal hydraulic condition and ambient/coil temperature of 20°C.
(4) When solenoid is energized, the inrush current is approx 3 times the holding current.
(5) Only for DHE
(6) Only for DHI

8 DIMENSIONS [mm]

AGIR, AGIS, AGIU size 10

ISO 5781: 2000
Mounting surface: 5781-06-07-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 1109/70, 2 OR 3068
Ports A, B: Ø = 14 mm
Ports X, Y: Ø = 5 mm

view from X

AGIU-10/10/EX
Mass = 5.3 Kg

AGIU-10/10/IX
Mass = 5.3 Kg

AGISR-10
Mass = 5.3 Kg

AGIR-10: Mass= 3.3 Kg
AGIS-10: Mass= 3.8 Kg
AGIU-10: Mass= 3.8 Kg
AGIR, AGIS, AGIU size 20
ISO 5781: 2000
Mounting surface: 5781-08-10-0-00
Fastening bolts:
4 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4100
Ports A, B: Ø = 22 mm
Ports X, Y: Ø = 5 mm

| View from X | 79.4 | 73 | 60.3 | 39.7 |
| AGI-20/10/**-XX | Mass = 7.5 Kg |
| AGIR-20 | Mass = 5.5 Kg |
| AGISR-20 | Mass = 9 Kg |

AGIR, AGIS, AGIU size 32
ISO 5781: 2000
Mounting surface: 5781-10-13-0-00
Fastening bolts:
6 socket head screws M10x45 class 12.9
Tightening torque = 70 Nm
Seals: 2 OR 109/70, 2 OR 4131
Ports A, B: Ø = 28 mm
Ports X, Y: Ø = 5 mm

| View from X | 96.8 | 92.9 | 48.4 |
| AGI-32/10/**-XX | Mass = 11.4 Kg |
| AGIS-32 | Mass = 9.9 Kg |
| AGISR-32 | Mass = 15.5 Kg |

Overall dimensions refer to valves with connectors type 666

### 9 MOUNTING SUBPLATES

<table>
<thead>
<tr>
<th>Valves</th>
<th>Subplate model</th>
<th>Port location</th>
<th>Ports</th>
<th>Φ Counterbore [mm]</th>
<th>Mass [Kg]</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGI*-10</td>
<td>BA-305</td>
<td>Ports A, B, Y underneath;</td>
<td>A G 1/2&quot; B G 1/2&quot; X-Y G 1/4&quot; OUT</td>
<td>30 30 21.5 -</td>
<td>1</td>
</tr>
<tr>
<td>AGI*-20</td>
<td>BA-505</td>
<td></td>
<td>A G 1&quot; B G 1&quot; X-Y G 1/4&quot; OUT</td>
<td>46 46 21.5 -</td>
<td>2</td>
</tr>
<tr>
<td>AGI*-32</td>
<td>BA-705</td>
<td>G 1/2&quot;</td>
<td>A G 1/2&quot; B G 1/2&quot; X-Y G 1/4&quot; OUT</td>
<td>63.5 63.5 21.5 -</td>
<td>7.5</td>
</tr>
<tr>
<td>AGIU-10</td>
<td>BA-325 (with incorporated check valve)</td>
<td>G 1/2&quot;</td>
<td>A G 3/4&quot; B G 1/4&quot; X-Y G 1/2&quot; OUT</td>
<td>30 36.5 21.5 30</td>
<td>5</td>
</tr>
<tr>
<td>AGIU-20</td>
<td>BA-425 (with incorporated check valve)</td>
<td>Ports A, B, Y underneath;</td>
<td>A G 1&quot; B G 1&quot; X-Y G 1/4&quot; G 1&quot; OUT</td>
<td>46 46 21.5 46</td>
<td>6.5</td>
</tr>
<tr>
<td>AGIU-32</td>
<td>BA-625 (with incorporated check valve)</td>
<td>G 1/2&quot;</td>
<td>A G 1/2&quot; B G 1/2&quot; X-Y G 1/2&quot; OUT</td>
<td>63.5 63.5 21.5 63.5</td>
<td>13</td>
</tr>
</tbody>
</table>

The subplates are supplied with fastening bolts. For further details see table K280

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