Meet an open-circuit piston pump that’s built for better precision, performance and productivity.

It’s time for an open-circuit piston pump that’s built for better.

With sophisticated controls that enhance system efficiency, and a compact design that delivers incredible power, the Eaton X20 portfolio of open-circuit piston pumps is built to maximize machine performance and productivity. Plus, with a variety of advanced electronic control options and a reputation for remarkable reliability, the X20 portfolio makes it easy to design smarter, more efficient machines that work and keep working in the most demanding applications.

Experience X20 – a small pump with big power that’s built for better productivity, fuel efficiency, control and reliability.

X20 features sophisticated controls that improve performance while optimizing efficiency.

**Load sense control**
Limits outlet pressure to a set margin above load pressure.

**Torque control**
Limits pump torque to a set maximum.

**Electronic inverse proportional pressure control**
Limits outlet pressure negatively proportional to signal current.

**Electronic proportional pressure control**
Controls displacement proportional to current signal.
EP - Return to min. displacement in case of power loss

**Electronic displacement control**
EPD - Return to max. displacement in case of power loss
Load sense control
- Tunable to system requirements through orifices in the control
- Compact design: 20mm shorter
- Can be adjusted without leaking and contains an adjustment limit to prevent damage
- Non-removable adjusting screws
- Easier access to load sense bleed down orifice

620 Torque control
- Add-on control - No loss or degradation of pressure compensator or load-sense functions
- High-accuracy control based on Eaton’s proven PVH design – the industry benchmark
- Externally adjustable torque setting – No disassembly required
- Hydraulic displacement feedback – Reliable and stable performance

Inverse proportional pressure control
- Efficient use of power, freeing up horsepower for more productive work
- Eliminate load sense valve section and load sense lines available on all displacements
- Dedicated pump to ensure consistent cooling
- Fail safe functionality

Electronic displacement control
- Dynamic control based on specific machine needs
- Eliminate load sense line available on all displacements
- Full control over the displacement of the pump
- Allows for great flexibility
- Efficient use of the power available
- Delivers low losses

Electronic proportional pressure control
- Coming soon

### Dynamic response per SAE J745 (using swash plate position)

<table>
<thead>
<tr>
<th></th>
<th>Response (off stroke)</th>
<th>Recovery (on stroke)</th>
<th>Load sense recovery</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>msec</td>
<td>msec</td>
<td>msec</td>
</tr>
<tr>
<td>ADU041</td>
<td>20</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>ADU049</td>
<td>20</td>
<td>75</td>
<td>90</td>
</tr>
<tr>
<td>ADU062</td>
<td>25</td>
<td>90</td>
<td>115</td>
</tr>
<tr>
<td>ADU080</td>
<td>26</td>
<td>75</td>
<td>115</td>
</tr>
<tr>
<td>ADY074</td>
<td>13</td>
<td>47</td>
<td>84</td>
</tr>
<tr>
<td>ADY098</td>
<td>24</td>
<td>68</td>
<td>94</td>
</tr>
</tbody>
</table>

- **Accuracy**: Less than 10% maximum variation across all operating conditions
- **Packaging**: No increase in length or width; Height increase 40 mm (similar to cold start valve)
- **Setting range**: Fully adjustable from 20%-90% of peak torque, no part changes required

### Electrical data

#### Voltage

<table>
<thead>
<tr>
<th></th>
<th>12 V DC</th>
<th>24 V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max Current</td>
<td>1500 mA</td>
<td>750 mA</td>
</tr>
<tr>
<td>R20, Resistance(ohm)</td>
<td>5.19 +/- 0.52%</td>
<td>20.8 +/- 2.08</td>
</tr>
<tr>
<td>Type of Control</td>
<td>Current</td>
<td>Current</td>
</tr>
<tr>
<td>PWM Control Frequency</td>
<td>250 Hz</td>
<td>250 Hz</td>
</tr>
<tr>
<td>Duty Cycle</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Insulation material</td>
<td>Class H, 180 deg C</td>
<td>Class H, 180 deg C</td>
</tr>
<tr>
<td>Protection Class</td>
<td>IP69K/IPX9K</td>
<td>IP69K/IPX9K</td>
</tr>
<tr>
<td>Connector</td>
<td>AMP Junior Power</td>
<td>AMP Junior Power</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40 deg C; 85 deg C</td>
<td>-40 deg C; 85 deg C</td>
</tr>
</tbody>
</table>

#### Operating Temperature

-30 deg C; 105 deg C