maax® 3S
Automation solution for extrusion line retrofitting

The maax® 3S automation system is particularly suitable for the retrofitting of gear pumps or screen changers in extrusion lines.

Operation, control, regulation and monitoring of the operating parameters are simplified. Production data are displayed transparently and operation is simple and intuitive. Process and production safety of the line are increased.

Your benefits
- Simple and clear operation of the start-up and shutdown routines
- Quick and precise control of the extruder or pump speeds
- Independent start-up and production control of the pump speed
- Integrated temperature control of the line components
- Fast troubleshooting thanks to plain text messages
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Features
- Comfortable and reliable operation via touch panel
- Temperature zones max. 3
- Online language switching
- Start-up and production control of the pump speed
- Remote access possible at any time

Operation
- Automatic acceleration to start-up speed on starting
- Operation with pressure control right from the start
- Integrated filter monitoring
- Quick and exact control of the pump inlet pressure

Technical data:

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Analog inputs 4-20 mA</td>
<td>4</td>
</tr>
<tr>
<td>Analog outputs 4-20 mA</td>
<td>2</td>
</tr>
<tr>
<td>Melt pressure measurements</td>
<td>3</td>
</tr>
<tr>
<td>Melt temperature measurement</td>
<td>1 (Type J)</td>
</tr>
<tr>
<td>Heating zones</td>
<td>3</td>
</tr>
<tr>
<td>Types of temperature sensor</td>
<td>Type J, K, R, S, T, PT100</td>
</tr>
<tr>
<td>Configurable control loops</td>
<td>1 (pump inlet pressure)</td>
</tr>
<tr>
<td>Interfaces</td>
<td>Profinet/Ethernet</td>
</tr>
<tr>
<td>Monitor</td>
<td>Siemens Touch Panel KTP400</td>
</tr>
<tr>
<td>Auxiliary energy</td>
<td>24 VDC, -15% to +20%, approx. 3 A</td>
</tr>
<tr>
<td>Operating/storage temperature</td>
<td>0 to +50°C/-20 to +60°C</td>
</tr>
</tbody>
</table>

maax® 3S as part of the expac® system
As a system vendor, MAAG offers complete assemblies for your extrusion line comprising an extrex® gear pump, screen changer, maax® automation solution and drive unit. As the sum of the individual parts, the expac® system improves the productivity of your process. MAAG’s experience enables it to combine all the components in the best way to provide an optimum solution. This also significantly enhances operational safety. Integrated statistical functions and process data memory enable traceable quality management. Influencing of additional degrees of freedom, such as the pump inlet pressure by way of the presetting (pump inlet pressure regulation), additionally enhances plant flexibility.

With maax® 3S, you get full service on demand
- Supply of the complete electrical equipment, including the automation system
- Design and supply of all required mechanical assemblies and parts, such as connections, flanges, subframes
- Supply and control engineering integration of melt filtration systems
- Installation of the electrical and mechanical assemblies
- Process engineering optimization and advice
- Commissioning, incl. training of the operating personnel
- 24/7 service with short response times

Illustration with maximum configuration of the maax® 3S with extruder / pump / belt control and screen changer pressure monitoring