SCHMIDT® PressControl
Machine Control Units

SCHMIDT® PressControl 75, 600 and 5000 are control units of the latest generation, which allow the design of modern production processes – from the single workstation to complete automation. You benefit from our competence in:

- Safety technology – type-approved devices
- Process measurement technology – simultaneous measuring during the process
- Process documentation

SCHMIDT® PressControl control units have the following features:

- Efficiency due to intuitive user interfaces
- Quick and secure process set-up e.g. thanks to the touch-screen and additional handwheel ram control function with SCHMIDT® PressControl 600 and 5000 in combination with the ServoPress/TorquePress
- The integrated PLC allows programming of additional inputs/outputs or sensors/actuators and the application-specific design of the workstation or the line
- The integrated measurement data processing is insensitive against interferences (EMC). This results in a high measurement security of the entire system
- With integrated safety technology, the entire system becomes a type-approved single workstation
- Service functions such as “Firmware Update” ensure the user has the up-to-date version of the software
- Guaranteed complete process documentation with full traceability
SCHMIDT® PressControl 75
Compact Functionality

Highly compact yet multifunctional SCHMIDT® PressControl 75
Available for these press systems:

- SCHMIDT® ElectricPress
- SCHMIDT® PneumaticPress
- SCHMIDT® HydroPneumaticPress

Its easy and intuitive touchscreen allows for quick and efficient process set-up or change-over. Process specific data can be stored in up to 24 datasets.

The SCHMIDT® SafetyModule allows the design of manual workstations with safety technology that meets the latest global standards for two-hand cycle initiation, guarding or light-curtain protection.

Technical Data

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage</td>
<td>24 V DC</td>
</tr>
<tr>
<td>Current</td>
<td>&lt; 3 A</td>
</tr>
<tr>
<td>Operating temperature</td>
<td>0 – 40 °C</td>
</tr>
<tr>
<td>Protection class</td>
<td>IP 54</td>
</tr>
<tr>
<td>Interfaces</td>
<td>RK512 protocol</td>
</tr>
<tr>
<td></td>
<td>I/O: 4 digital in- and outputs (preset for operation modes)</td>
</tr>
<tr>
<td></td>
<td>CANopen for PRC - Gateway or CANopen Compact Box IP 2401</td>
</tr>
<tr>
<td>Electrical connections</td>
<td>All connections are pluggable</td>
</tr>
<tr>
<td>Display</td>
<td>2.8&quot; TouchScreen</td>
</tr>
<tr>
<td>Operation</td>
<td>4 function keys</td>
</tr>
<tr>
<td></td>
<td>3 languages</td>
</tr>
<tr>
<td>Modes of operation</td>
<td>Two-hand release with SafetyModule</td>
</tr>
<tr>
<td></td>
<td>Light curtain with SafetyModule</td>
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<tr>
<td></td>
<td>Start button for operation without SafetyModule</td>
</tr>
<tr>
<td></td>
<td>Workpiece control</td>
</tr>
<tr>
<td></td>
<td>Activation of sliding table</td>
</tr>
<tr>
<td></td>
<td>Return stroke initiation with external signal</td>
</tr>
<tr>
<td>Operating functions</td>
<td>Piece- or preselection counter</td>
</tr>
<tr>
<td></td>
<td>Set-up mode</td>
</tr>
<tr>
<td></td>
<td>BDC dwell time</td>
</tr>
<tr>
<td></td>
<td>User Management</td>
</tr>
<tr>
<td></td>
<td>Blow-out/blow-off</td>
</tr>
<tr>
<td>Dimensions</td>
<td>3.5 x 4.7 x 2.3” (h x w x d)</td>
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<tr>
<td>Mounting</td>
<td>Fastening screws, optional magnet holder</td>
</tr>
</tbody>
</table>

SCHMIDT® ElectricPress 43
with PressControl 75 and SafetyModule

Magnet Holder, optional mountable on the side or behind
**SCHMIDT® PressControl 600**
Press Control With Integrated PLC & Process Data Management

The SCHMIDT® PressControl 600 with integrated PLC and process data management is made for intelligent process control of force/stroke monitored SCHMIDT® ManualPress, (Hydro) PneumaticPress, SCHMIDT® ElectricPress or SCHMIDT® ServoPress/TorquePress. Additional automation tasks around the press process can also be realized by the SCHMIDT® PressControl 600.

**Control Unit**
All process integrated system elements and data are controlled and managed centrally by the SCHMIDT® PressControl 600. The standard system configuration already includes a basic programming, special applications can be programmed as well.

**Integrated Operator Panel**
The integrated operator panel of SCHMIDT® PressControl 600 with complete operating interface is made for parametrizing and operating the control as well as for visualization, administration, and documentation of process data (dataset management).

**Features**
- User-friendly, intuitive menu navigation by touchscreen
- Individual design of user interface
- Keypad with integrated membrane for the input of numerical values and choice of functions
- Softkeys have different functions on different levels and simplify the handling
- Quality evaluation on the basis of force/stroke tolerances, and thus a reliable detection of NOK parts with process monitored presses
- Handwheel software for setup mode for SCHMIDT® ElectricPress (force/stroke monitored) or SCHMIDT® ServoPress/TorquePress, external handwheel as an option (connection via SCHMIDT® PRC Gateway)
- Industrial strength, even in harsh environments
- Protection class IP 54

SCHMIDT® DataBase software maps the process data of all individual assembly steps into a data bank, including historic data. And with the SCHMIDT® PRC OPC software available on these models, data exchange will now become the automation standard.

**Technical Data**

- **Industry PC with**
  - Integrated PLC
  - Integrated CNC (with SCHMIDT® ServoPress/TorquePress)
  - Intelligent process control
  - Diagnosis and service functions
  - Linux operating system
  - Solid State Drive

- **Drive**
  - CANopen with possibility to connect:
    - SCHMIDT® PRC Gateway
  - CANopen Compact box
  - EtherNet TCP/IP
  - PROFIBUS (optionally via external CANopen/PROFIBUS-Gateway) 16 Byte input/output data
  - PROFINET (optionally via external CANopen/PROFINET-Gateway) 16 Byte input/output data
  - EtherCAT (optionally via external CANopen/EtherCAT-Gateway) 16 Byte input/output data

- **Field bus**
  - EtherCAT (optionally via external CANopen/EtherCAT-Gateway) 16 Byte input/output data

- **Interfaces**
  - EtherNet (10/100 MBit)
  - 2 x USB

- **Panel with**
  - Intuitive user interface

- **Screen**
  - Integrated 7" widescreen TFT display (800 x 480) with touchscreen

- **Power supply**
  - 24 V DC with integrated UPS

- **Assembly**
  - Mech. adaption VESA 75 for optional table or wall fixture as well as fixture for housing
SCHMIDT® PressControl 600 functions as a system control and takes over the process monitoring. The hard- and software components forming a system concept with real time characteristics. This is guaranteed by a system architecture with CANopen fieldbus. Press force monitored SCHMIDT® ManualPress, SCHMIDT® (Hydro-)PneumaticPress, SCHMIDT® ElectricPress or SCHMIDT® ServoPress/TorquePress will be activated via fieldbus. The collected measuring data as well as in-/output data will be exchanged by the fieldbus.

Communication with other systems via:
- CANopen
- EtherNet (OPC server)
- PROFIBUS (optional via external CANopen/PROFIBUS-Gateway)
- PROFINET (optional via external CANopen/PROFINET-Gateway)
- EtherCAT (optional via external CANopen/EtherCAT-Gateway)

SCHMIDT® PRC Gateway
- 2 CANopen connections for control (master) and PDA (Slave), with 24 V power supply
- 24 V interface with 16 inputs and 16 outputs
- Short-circuit-proof and overload-proof
- Status LED’s for CAN bus and I/O’s
- Encoder interface for external handwheel as handheld
- Supply voltage 24 V DC
- Top hat rail mounting
**SCHMIDT® PressControl 5000**

**Compact System Control For Intelligent Process Control**

**Control Unit 5000 RT**

All system elements and data involved in the process are centrally controlled and administrated by the control unit SCHMIDT® PressControl 5000 RT. The integrated PROFIBUS interface permits integration of the press system as an intelligent Profibus slave into existing PROFIBUS networks. Parametrization, operation and programming will be effected by using software components which are installed on the operating panel SCHMIDT® PressControl 5000 HMI or on a user PC. The standard system configuration already includes a basic programming for different operating profiles; special applications can be additionally programmed.

**SCHMIDT® DataBase** software maps the process data of all individual assembly steps into a data bank, including historic data. And with the SCHMIDT® PRC OPC software available on these models, data exchange will now become the automation standard.

**Control Unit 5000 HMI**

SCHMIDT® PressControl 5000 HMI can be parametrized and operated via operator panel SCHMIDT® PressControl 5000 RT with its complete operating interface. Furthermore visualization, administration and documentation of process data (dataset management) can be effected as well by this instrument.

**Technical Data 5000 RT**

- **Industry PC with**
  - Integrated PLC
  - Integrated CNC with all-digital drive control (integrated force-, position- and speed control loop) for up to 6 axis
  - Intelligent process control
  - Diagnosis and service functions
  - Linux operating system
  - Assembly on DIN rail (TS 35) according to EN 50022 (1.37 x 0.29 inch)
- **Drive**
  - Integrated hard disk 30 GB
- **Field bus**
  - CANopen with possibility to connect:
    - SCHMIDT® PRC Gateway
    - more than 2000 I/O’s
- **EtherNet TCP/IP**
- **PROFIBUS**
  - - PPROFIBUS Slave interface
  - - 48 Byte input/output data
- **PROFINET (optionally via external CANopen / PROFINET-Gateway)**
  - 16 Byte input/output data
- **EtherCAT (optionally via external CANopen / EtherCAT-Gateway)**
  - 16 Byte input/output data
- **Interfaces**
  - EtherNet (10/100 Bit)
  - 6 x USB
  - 2 x RS 232 (COM 1/COM 2) for diagnosis purposes
  - 4 digital inputs (24 V) galvanically isolated
  - 4 digital outputs (24 V) galvanically isolated
- **EMC**
  - Acc. to requirements of EMC law
- **Power supply**
  - 24 V DC with integrated UPS
- **Ambient temperature**
  - 0 – 40 °C

**Technical Data 5000 HMI**

- **Operating panel with**
  - Intuitive user interface
  - Diagnosis and service functions
  - Microsoft Windows XP™ operating system Screen
  - Integrated 19“ TFT display (SXGA resolution) with touchscreen
- **Drive**
  - Integrated hard disk 80 GB
- **Interfaces**
  - 1 x PS/2 keyboard
  - 1 x VGA
  - 3 x USB
  - 1 x RS232
  - 2 x Ethernet (10/100 MBit)
- **EMC**
  - Acc. to requirements of EMC law
- **Power supply**
  - 24 V DC
- **Current consumption**
  - 4 A
- **Ambient temperature**
  - 0 – 40 °C
- **Protection class**
  - IP 54
- **Weight**
  - Approx. 33 lbs
**SCHMIDT® PressControl 5000**

**System Architecture**

*SCHMIDT® PressControl 5000* does work as a system control and takes over the process monitoring. The hard- and software components forming a system concept with real time characteristics. This is guaranteed by a system architecture with CANopen field bus. The *SCHMIDT® ServoPress-/TorquePress* modules or other NC-axis will be controlled by the CANopen fieldbus and measuring data can be exchanged as well as I/O data. Furthermore, there is the possibility of connecting press force monitored *SCHMIDT® ManualPress, SCHMIDT® ElectricPress* or *SCHMIDT® (Hydro)PneumaticPress* on safety technology *SCHMIDT® SafetyModule* for CANopen.

Communication with other systems can be realized via:
- CANopen
- EtherNet (OPC server)
- PROFIBUS
- PROFINET (optional via external CANopen/PROFINET-Gateway)
- EtherCAT (optional via external CANopen/EtherCAT-Gateway)

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**External Handwheels as Handheld**

for *SCHMIDT® PressControl 600* and *SCHMIDT® PressControl 5000 RT* in conjunction with press force monitored *SCHMIDT® ElectricPress* or *SCHMIDT® ServoPress/TorquePress*, connection via *SCHMIDT® PRC Gateway*.

**CANopen Compact Box**

- 16 digital combination inputs/outputs (8 inputs and 8 outputs), useable optionally as input and output (24 V)
- Plug 4-pins M8 screw type
User Interface For Professional Assembly
For PressControl 600 And 5000

The user interface for professional assembly is installed in the SCHMIDT® PressControl 600 and 5000. The functionality has been developed especially for assembly operations with direct intervention in the process.

The following functions are available
- Process visualization
- Process data management
- Development tool (PLC editor)
- SCHMIDT® PRC DataBase as an option

Features
- Easy and quick setup of the processes
- Definition of the data sets and operating profiles by parameters
- Process optimization due to switchover of the process display (F/s, F/t, s/t)
- Easy and quick definition and evaluation of the processes using the quality monitor
- Guaranteed detection of “failed” parts
- Unambiguous documentation and component assignment
- Software PLC for freely programming processes
- Service functions for diagnosis and system updates

User Interface SCHMIDT® PRC 600

1 + 2 Each tolerance can be inverted, creating a do-not pass-through area or line.

3 Stroke tolerance can be positioned at any angle from horizontal to vertical.

User Interface SCHMIDT® PRC 5000
Visualization And Process Analysis
For PressControl 600 And 5000

Visualized Display
Force output and press stroke are important parameters when evaluating the quality of pressed assemblies. The data of these measurements is recorded during the process and displayed by the software as force/stroke behavior curve F/s, F/t or s/t.

Freely definable tolerances, such as force/stroke windows and stroke tolerances, are provided for quality assurance of the assembly process. With the help of these criteria, quality critical areas can be monitored selectively. If the tolerances in the monitored curve areas are not met, application-specific interventions can be carried out (e.g. selection measures).

It is easy to create tolerance criteria and to display exact curve behaviors. For an evaluation of the behavior, the working stroke and the return stroke are important. The high resolution of our measurement systems allows a large number of measuring points that are required for a process-safe evaluation. Zoom and measuring functions allowing detailed documentation about the assembly processes.

Process Analysis – Graphic Display Force over Stroke

Process Analysis – Graphic Display Force over Time

Process Analysis – Graphic Display Stroke over Time
Database Software SCHMIDT® PRC DataBase
For PressControl 600 And 5000

SCHMIDT® PRC DataBase is an optional software for the modular control system SCHMIDT® PressControl 5000 or SCHMIDT® PressControl 600. The database software is used for storing and analyzing the data of the control system – process specifications and process results – particularly under quality assurance aspects.

Features
- Documentation
- Analysis
- Quality assurance
- Traceability
- Data export in CSV format
- Q-DAS interface with certification

SCHMIDT® PRC OPC
Data Exchange via the de facto Automation Standard

In the field of automation, the data communication, using co-ordinated systems and the reference level, is becoming increasingly important. OPC defines a manufacturer-independent interface.

All parties participating in the communication must only support this interface. The OPC-capable components can be combined just like elements of a construction kit.
Assembled parts are subject to certain manufacturing tolerances. Altitude deviations of the parts result in an offset of the curves in the curve window. The curves of the parts with higher tolerance deviations may then be situated outside of the defined tolerance limits and are classified as “failed” part.

Using the function “Offset of tolerance data”, the altitude tolerances of parts can be taken into account. The defined tolerance windows and stroke tolerances are offset by the distance of a reference position. After that, the pass/fail evaluation is carried out.

**SCHMIDT® Interface Software/Hardware**

The communication with co-ordinated control system is realized via a standardized interface program with SCHMIDT® PressControl.

All relevant system states as well as “failed” productions are transferred from one control to another via a simple signal transfer. The production data stored in datasets are recallable via the SPS program. If e. g. tools are equipped with an explicit identification code, the production data automatically adapt themselves to the specific process.

All standard physical interfaces, such as
- I/O interface
- CANopen
- EtherNet
- PROFIBUS
- PROFINET (via CANopen/PROFINET-Gateway)
- EtherCAT (via CANopen/EtherCAT-Gateway)
- USB
can be used for signal transfer with the automation environment.