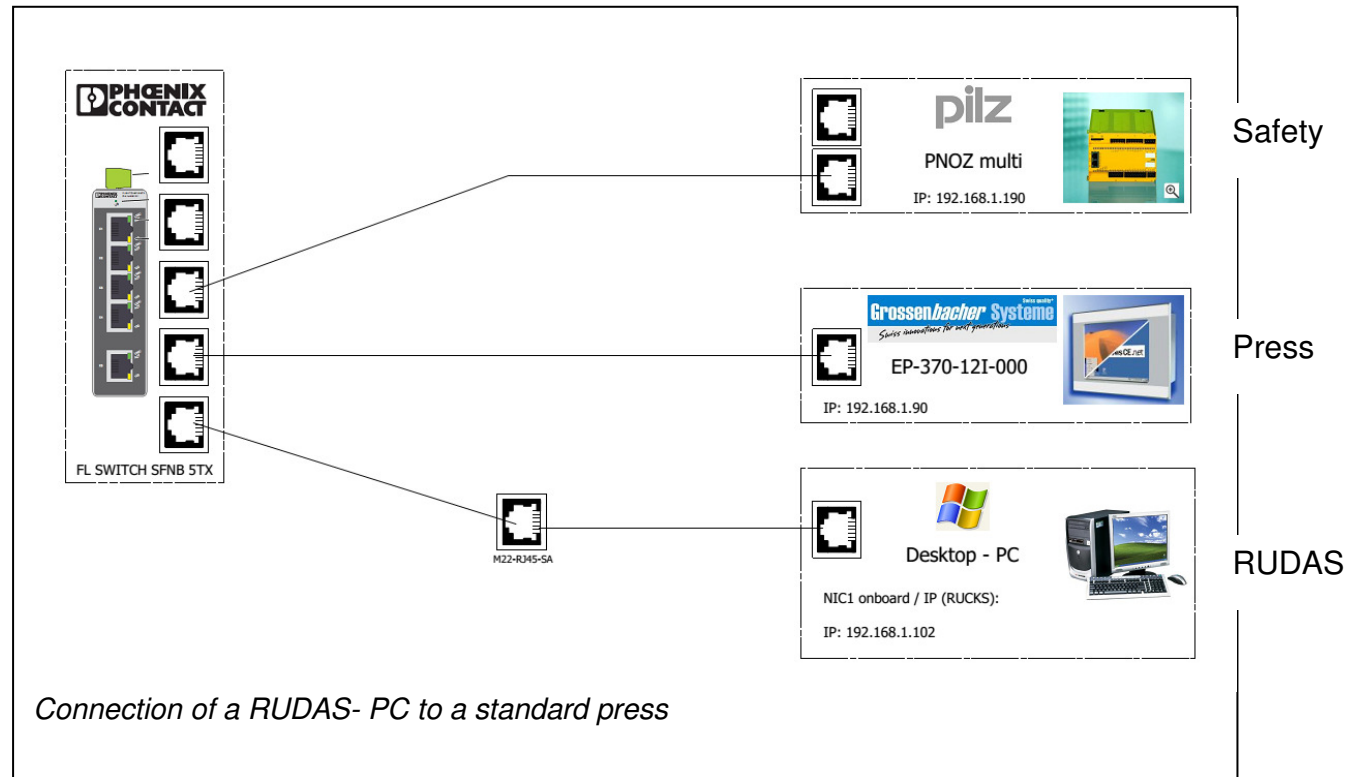


RUDAS Data Acquisition System

Our RUDAS- Data Acquisition Software is customized adjusted for you:

- Attractive graphical display of current machine parameters
- Possibility of the process data acquisition incl. saving of the recorded data (usable in MS Excel)
- Easy operable recipe management by well known Windows – user interface
- Visualization in Full- HD- Format (1920x1080)
- Software installed on a separate PC (behind the press)
- Connection to the press by LAN connection and OPC- Server (standardized interface also for other applications)

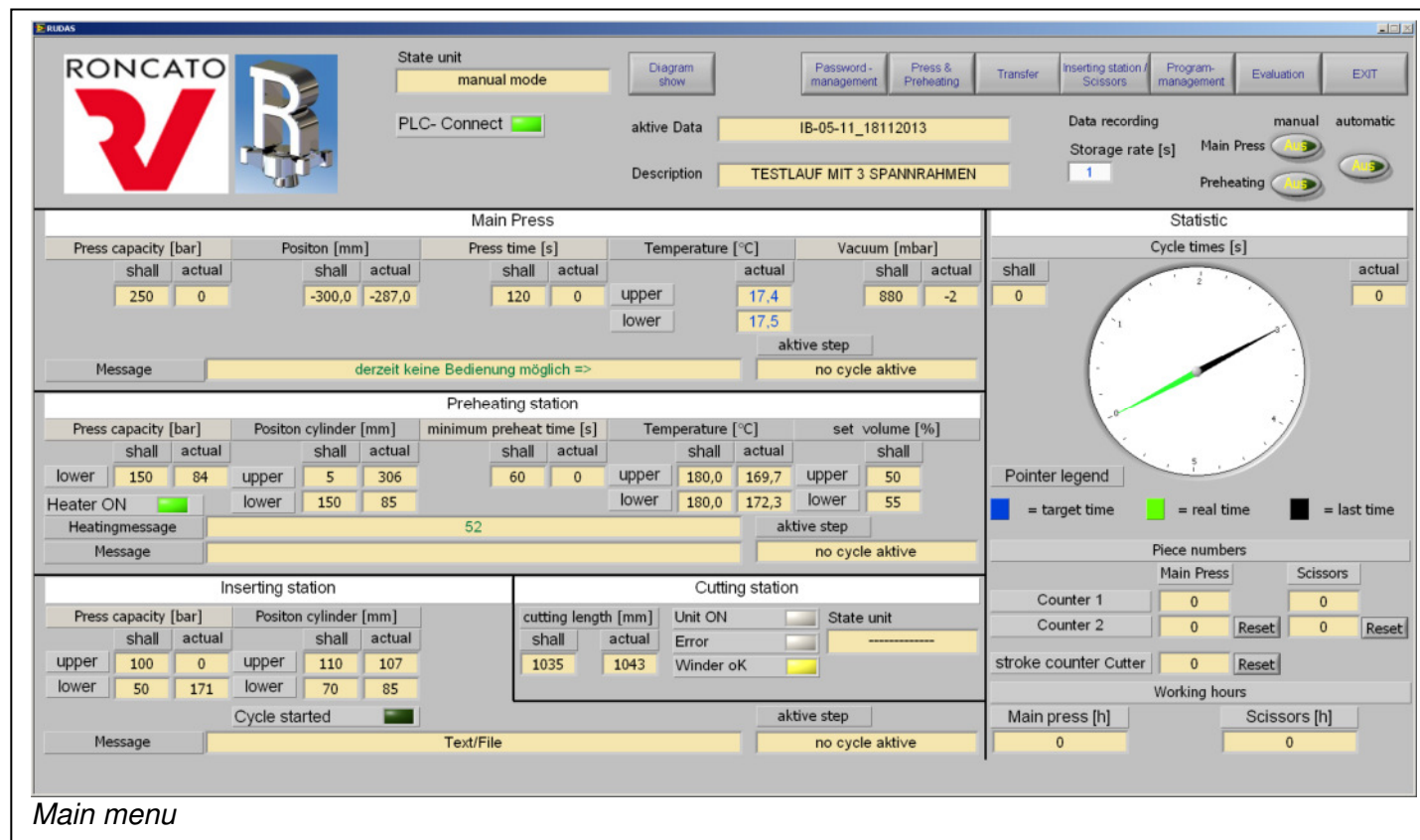


Main Menu

- Display of all relevant nominal and actual values
- Separate information windows for heating and machine
- Display of a fault report if there is a failure

Automatic Menu

- Determine of single phases (process progress) and its sequence
- Choosing of actuator and assigning of the kind of movement in each single phase
- Definition of special parameters, like pressure and waiting times



Menu Global Parameters

- Determine of process values for the operation by hand
- Offset value adjustment of each single heating zone

Parameter Global: Anlage 1

Übernehmen Zurück

Parameter global

Datensatzname

Presse öffnen/schliessen

Geschlossen / Offen [mm]

0 0

Speed Tippen [%]

0

Bremsrampe AUF / AB [mm]

0 0

min / max Position der Achse [mm]

0 0

Presse Kraftaufbau

Druck Hand [bar]

150

Umschaltdruck [bar]

0

Maximaler Druck [bar]

150

Toleranzband Druck nur in Automatik [bar]

0

Offset Druck [bar]

0

Mittelplatte

Geschlossen / Offen [mm]

0 0

Speed Tippen [%]

0

Offset Wegmesssystem [mm]

0

min / max Position der Achse [mm]

0 0

Etage unten

Solltemperatur Heizen [°C]

0

Solltemperatur Kühlen [°C]

20

Toleranzband Temperatur oben / unten [K]

0

Offsetwerte [K] Etage UNTEN oben

Zone	4	5A	5	5B	6	W2
Offset	0	0	0	0	0	0
Überwachung	AUS	AUS	AUS			

Offsetwerte [K] Etage UNTEN unten

Zone	1	2A	2	2B	3	W1
Offset	0	0	0	0	0	-50
Überwachung	AUS	AUS	AUS			

Heizen Allgemein

Dampf

oben

unten

Solltemperatur [°C]

0 0

Offset [K]

0 0

Proportionalanteil [GAIN]:

0 0

Integralanteil [TI]:

0 0

Differentialanteil [TD]:

0 0

Vulkanisierzeit

Zonenkontrollzeiten

Ventilsteuerung

Schlag	Min	Sec	Min	Sec
1	0	0	Heizen / Kühlen oben	0
2	0	0	Temp_abfall oben	Rücklauf
3/4/5	0	0	Heizen / Kühlen unten	0
			Temp_abfall unten	Entlüftung
				0
				Kondensat
				0

Etage oben

Solltemperatur Heizen [°C]

0

Solltemperatur Kühlen [°C]

0

Werkzeugkühlung deaktiviert:

AUS

Offsetwerte [K] Etage OBEN oben

Zone	10	11A	11	11B	12	W4
Offset	0	0	0	0	0	0
Überwachung	AUS	AUS	AUS			

Offsetwerte [K] Etage OBEN unten

Zone	7	8A	8	8B	9	W3
Offset	0	0	0	0	0	0
Überwachung	AUS	AUS	AUS			

Betriebsmeldungen

Text/File

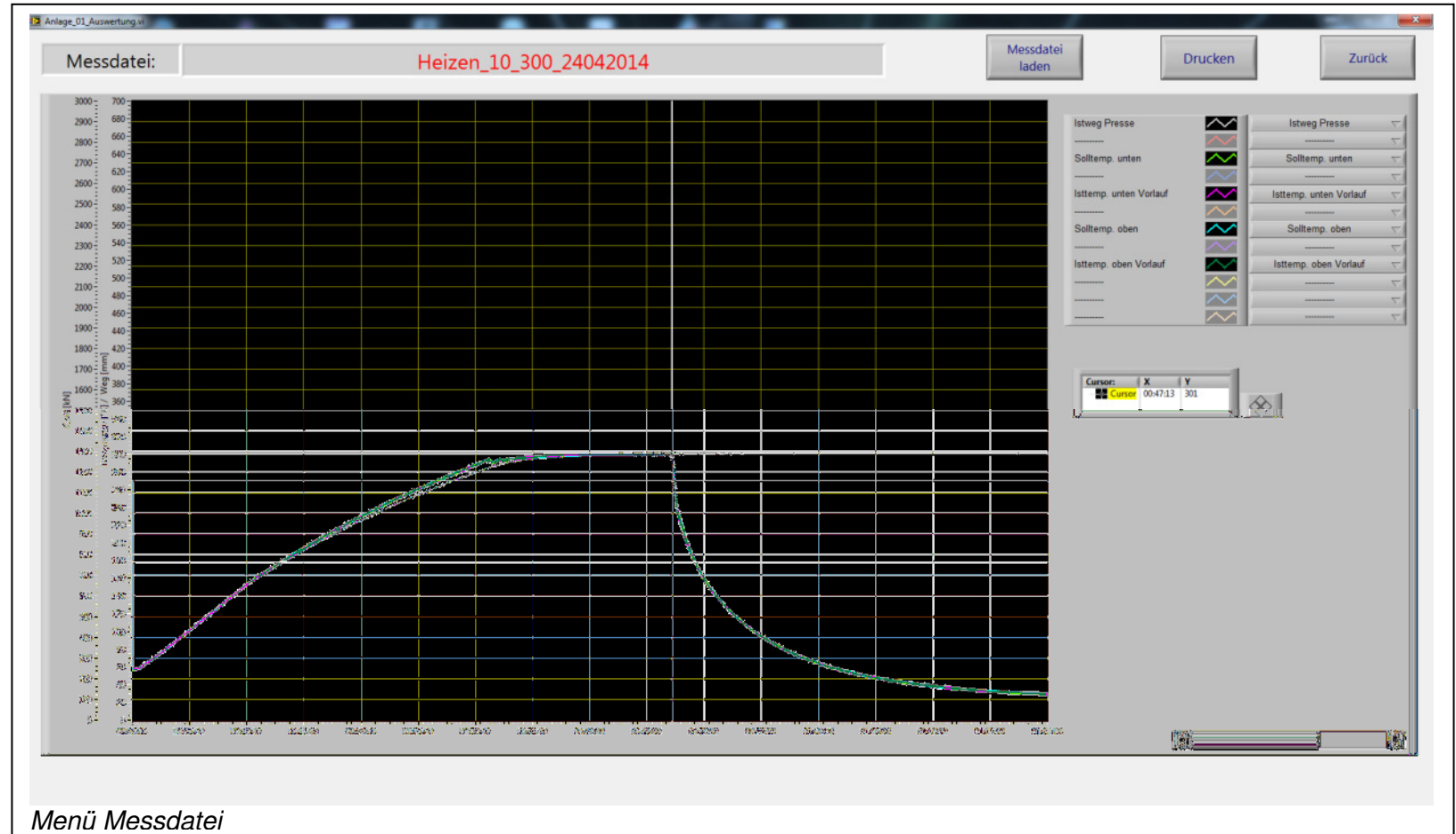
Heizmeldungen

Text/File

Menu global parameters

Menu Measure File

- Normalized display of current process data above the time axis
- Possibility of graphical display in RUDAS (see picture) or external programs like MS Excel
- Removing of not relevant graphs possible
- Comfortable printing of displayed graphs directly from the analyses window
- Scalable diagram axis to optimize the display



Menu Program Management

- Comfortable management of the programs and recipes
- Using of the known Windows file operations incl. the function erasing and display
- Saving of the receipts with long text names

Menu Receipt Parameter

- Offline- receipt editing at the RUDAS PC without interruption of the current machine program

Alternative for that:

- Management of the machine receipts by the machine control, but data saving by the RUDAS PC

Furthermore possible:

- Editing of certain machine parameters with RUDAS PC by a direct access to the machine visualization

Rezeptur Parameter

IB-05-11_18112013

Back

Set cycle Time 0

Preheating station

Pressure [bar] / Time [s]

Set Pressure 150 Set Press time 60

set volume upper 50 set volume lower 55

Positions [mm]

open close

Cylinder upper 100 290

Cylinder lower 50 82

Temperature upper [°C]

Set- Temperature 150 Range of tolerance [K] 10

Offset [K]

Zone 6	Zone 7	Zone 8	Zone 9	Zone 10
4,0	4,0	2,0	2,5	5,6

Temperature lower [°C]

Set- Temperature 150 Range of tolerance [K] 10

Offset [K]

Zone 1	Zone 2	Zone 3	Zone 4	Zone 5
1,0	1,0	2,0	2,0	3,0

Cutting station

Positions [mm]

open close

Downholder upper 0 70

lower 0 80

Set Cutting length 1035

Press

Vacuum [mbar] / Time [s]

Vacuum to time 10

Vacuum built on 880 Vacuum removed 49

Positions [mm] / Speed Auto [mm/s]

Pos 0 -300,0 Speed 0 129,8

Pos 1 90,0 Speed 1 180,0

Pos 2 250,0 Speed 2 180,0

Pos 3 - (Pressure) 250 Speed 3 2,0

- (Time) 100

Pos 4 190,0 Speed 4 100,0

Height of the Tool 342,0

Tool Temperature [°C]

upper lower

Set- Temperature 17 18

Range of tolerance [K] 5 5

Speed [mm/s]

M19 to knife 150 in length 80

M17 500 M18 2500

Transfer -3- Lift

Positions [mm] / Speed Auto [mm/s]

Pos 0 10,0 Speed 0 150,0

Pos 1 110,0 Speed 1 80,0

Pos 2 256,0 Speed 2 150,0

Pos 3 400,0 Speed 3 150,0

Position tolerance 2,0

Inserting station

Positions [mm]

open close

Press cylinder upper 110 940

Ejector lower 0 70

Pressure [bar]

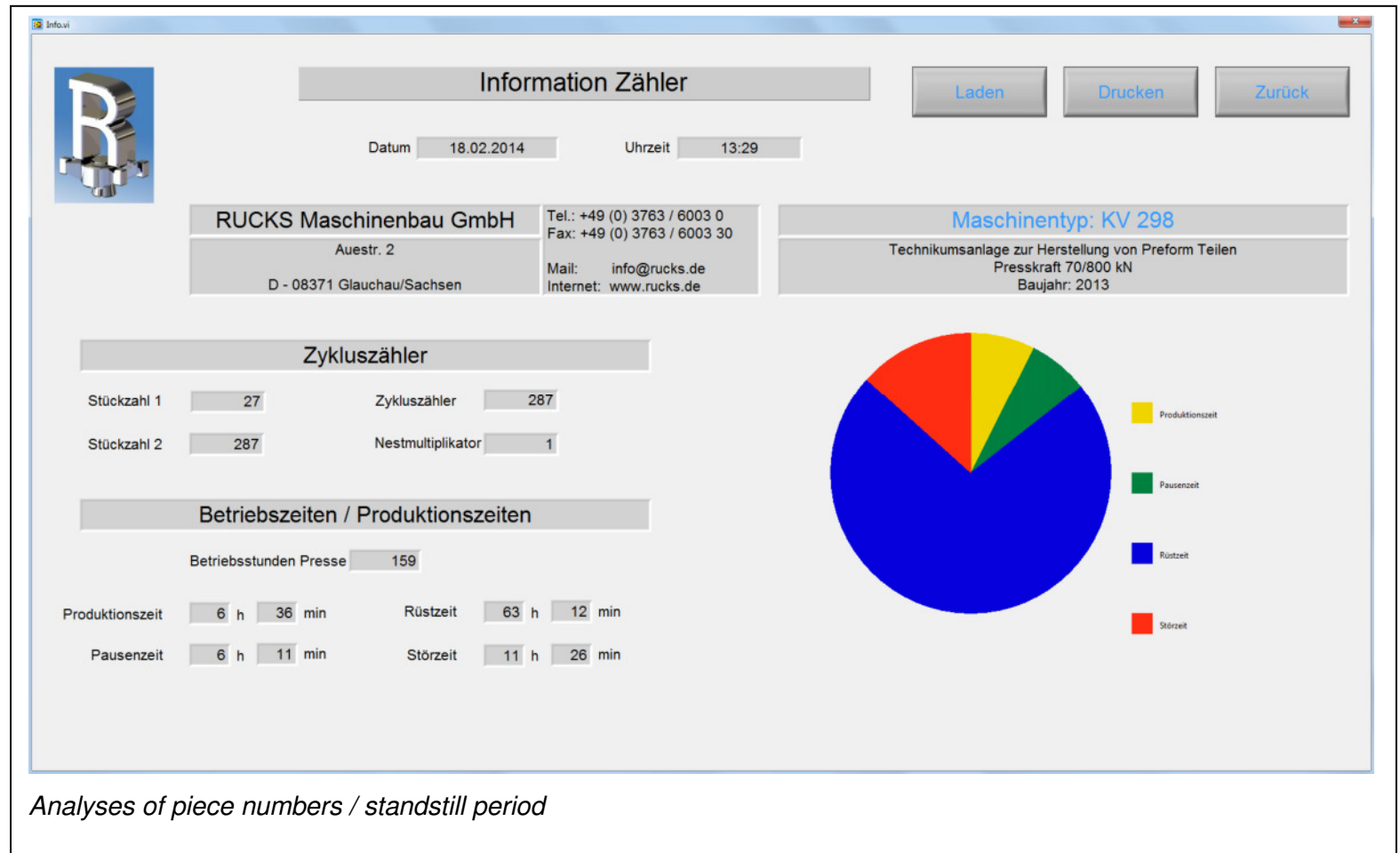
Press cylinder min 100

Ejector min 50

Menu receipt parameters

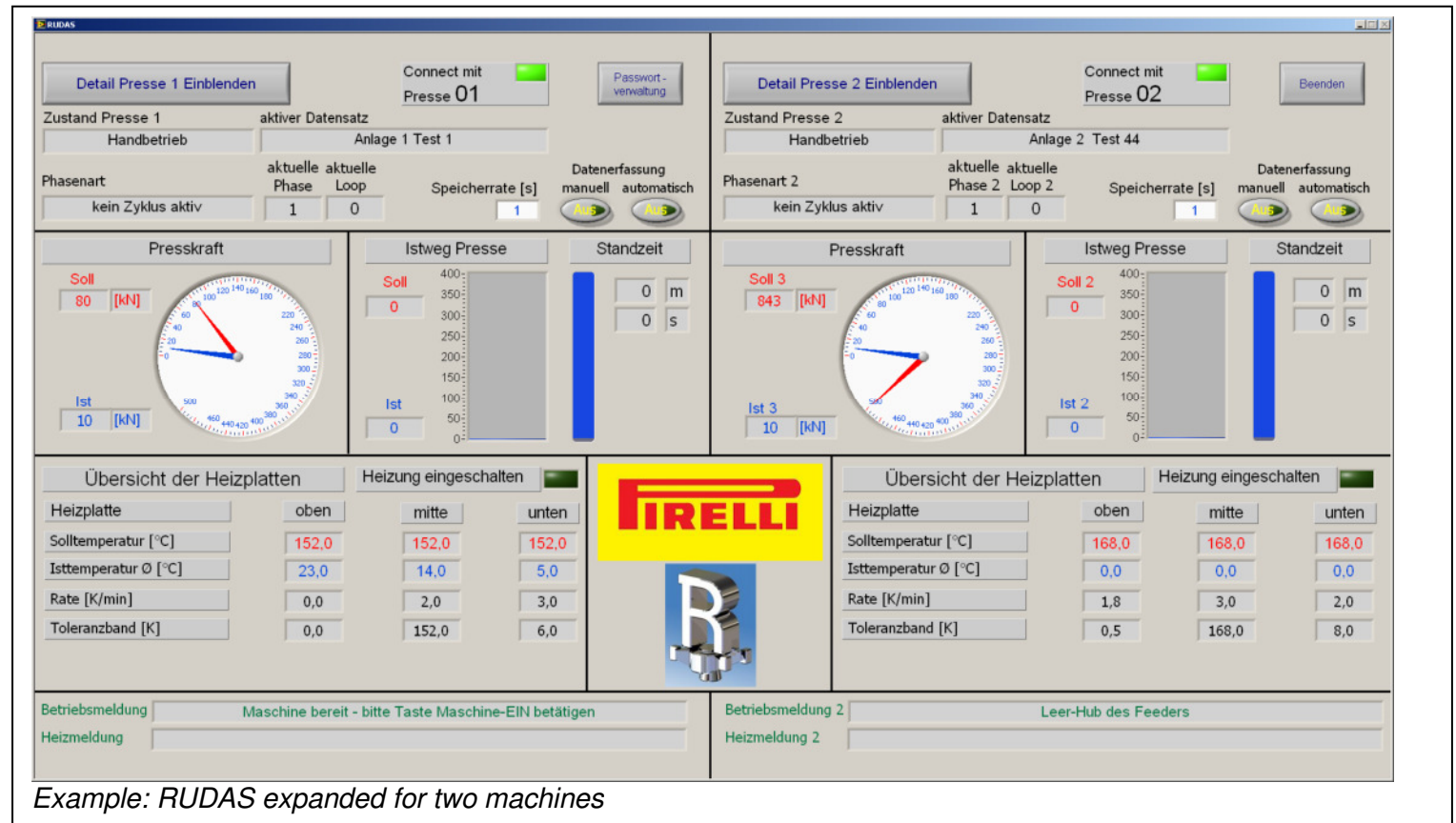
Statistic Functions

- Control and Overview by additional statistic functions, e.g.:
 - Display of energy consumption (if integrated in machine control)
 - Analyses of piece numbers / standstill period
 - Display of failures (one month circulating storage)



Expansion of RUDAS as a master computer system

Comfortable quality management by one system for up to 16 machines



Example: RUDAS expanded for two machines

Notes:

Some of the pictured RUDAS functions need optional expansions of the machine control.

All of the showed pictures are only examples with optional features. We would like to advice you.

Feature list RUDAS

<u>Function description</u>	
Display functions	
Resolution of actual value diagram	
fixed	●
variable	●
Sampling rate of the actual values	
fixed	●
variable	●
Pressure display actual values and nominal values	
in bar	●
in kN	●
Pressure time display	●
Analyze diagram Parameter with an option to select and deselect	●
Resolution of analyze diagram	
variable	●
zoom	●
Data acquisition	
manual saving with self-elected file names	●
Automatic saving with timestamp per cycle (minimum record rate $\leq 1s$ / depend on computer hardware and number of the managed machines by RUDAS / file size with manual recording is limited to 10MB)	●
Cycle counter	●
Multiplier of mould cavity	●

- Standard
- By request, for extra charge
- * Hardware required

<u>Funktionsbeschreibung</u>	Master computer external (external PC)
Status quo display	
Operation signals general Operation signal heating Failure signal Cycle counter	●
Costumer logo in the main menu (approx. 20mm x 20mm)	●
Additional signals Window according to your request	■
Master computer functions	
Receipt respectively program management	●
Integration of further machines (RUCKS)	■
Integration of further machines (other suppliers)	■
Press programs	
Speed set value and pressure set value* (for main drives and ancillary drives)	●
Configurable programm phases (per program / receipt) Available modules (mould separator, retractable plates, ejector, and so on) Programmable in phases	60
More than 60 phases programmable	■
Program / receipt management	●
Number of passwords	1
Machine parameter and monitoring*	
Oil temperature Oil level Safety valve Position measurement system(s) Emergency stop maximum pressure	●
Hardware module	
USB dongle (single user license)	●
Network connection for non-RUCKS control systems TCP/IP	■

- Standard
- on request, for extra charge
- * Hardware required

System Requirements

RUCKS Maschinenbau offers complete solutions (hardware + installed, bespoke software). The connection to your machine will happen by LAN. Alternative can a desktop PC provided by the customer latest six weeks before the machine delivery.

Minimum Requirements

- CPU minimum 2x2,5 GHz Dual-Core or better Quad-Core $\geq 4 \times 3,0$ GHz
- Minimum 4GB main storage better ≥ 8 GB
- Min. 320GB hard disk better SSD ≥ 250 GB for the System + additional HDD ≥ 160 GB for data storage
- One DVD drive
- One free LAN interface for direct connection to the machine (IP in a range of 192.168.0.x) / additional second network card for an integration in external networks
- Keyboard and mouse
- Free USB interface
- Operating system **Windows 10 /64bit** (optional 32bit possible) → other OS only after consultation
- **Full administrator access** on the local PC for installation of the communication drivers
- It is optimal to have an additional "D" drive (not mandatory)
- Screen size minimum 22" TFT / Full-HD (1920x1080)

Notes:

The realization of an additional access to the internal costumer network has to be done by the IT department of the costumer.

Please consider the RUCKS electrical option list.

The installation and the setup of a VPN access provided by the costumer have to be done by the IT department of the customer.