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EASY SA



NPCU - Numerical Pouring Control Unit

The actual pouring control unit (PCU) has been on the market for many years and spare parts are no longer available, increasing the risks of costly production breakdowns.

EASYsa has decided to develop a brand new system, the **Numerical Pouring Control Unit (NPCU)**.

Based on industrial and proven components available on the market, **NPCU** increase the life time of your installation by reducing the dependencies on specific electronic components and give the guarantee of a high quality of pouring process.

NPCU reduces potential issues and breakdowns and protect you against productions stops.

With basic features similar to those of the current systems, and the combination of the latest technology and sophisticated algorithms, the **NPCU** is at the same time easy to use and increases significantly the control of the pouring process, resulting in an improved quality and efficiency.

Operator interface is more complete and user-friendly, improving the overview of the pouring process and facilitate the pouring parameters adjustments and maintenance issues

NPCU can either be mounted in main electrical cabinet or as a standalone unit replacing the old pouring control.




Display supervision is a PC application which can run on the machine, on an additional touchscreen or on a laptop PC.

Before



After



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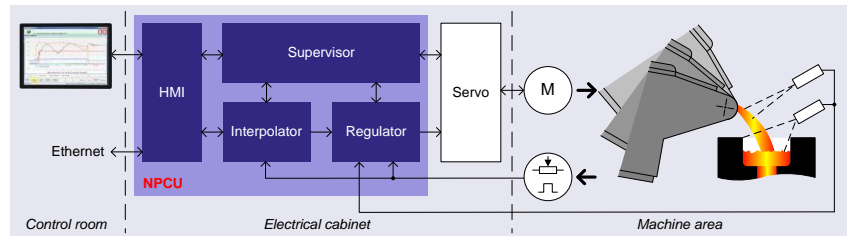
Specifications and functions



More functions

NPCU manages and controls the position of the ladle to ensure fast and accurate pouring.

- Modern algorithm with feed forward allows improved regulation of the pouring
- Jet flow and cup level regulation
- Ladle pickup, and positioning
- Pre-pouring, pouring and pouring-end
- Temperature compensation
- Overflow monitoring



More compatibility

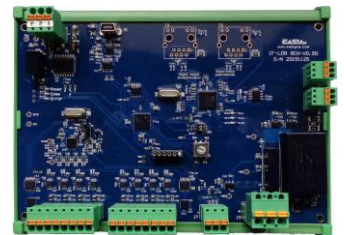
NPCU is based on standard components and software

- Industrial PC with standard interfaces
- Panel PC as supervision display
- Specific board for acquisition of light probes
- Protected software saved on memory card

Industrial PLC



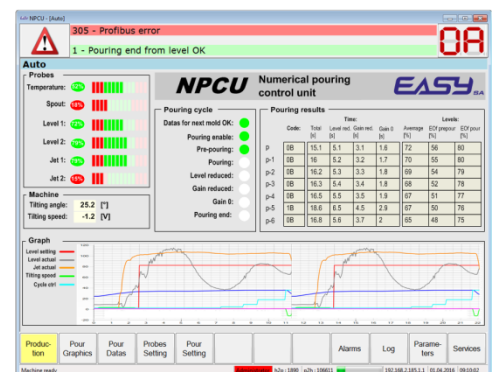
Probes interface board



More display

NPCU has its own HMI

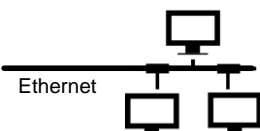
- Main page with all information
- Screen for probes adjustments
- Screen for pouring settings
- Pouring graphs for each mold
- Screen for pouring parameters adjustment and saving
- Alarms, log files
- Maintenance and diagnostics tools



More connectivity and quality

NPCU has files storing and Ethernet connection

ASCII files





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Supervision and control

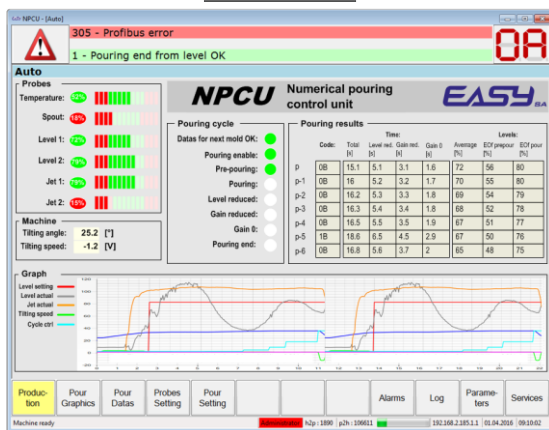


Production

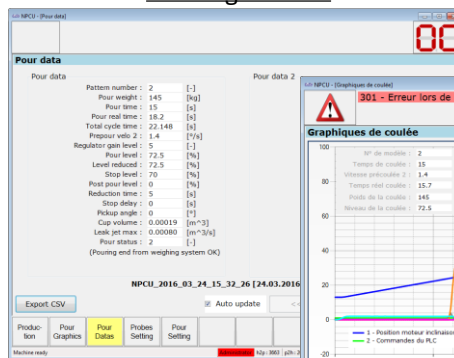
Looking and understanding "how" and "why" is essential to optimize pouring process. Main screen collect all information about pouring process to check and to ensure molds are poured correctly:

- probes diagnostics
- pouring cycle information
- historical data and graphs for last poured molds

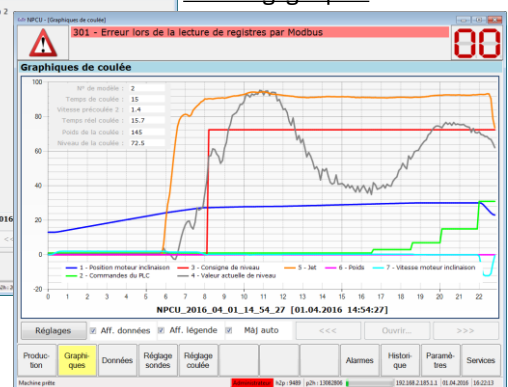
Main screen



Pouring results



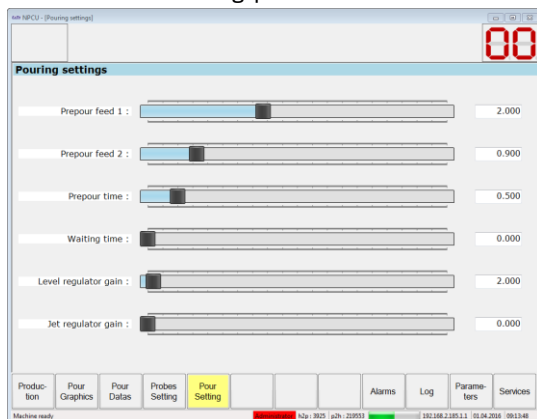
Pouring graphs



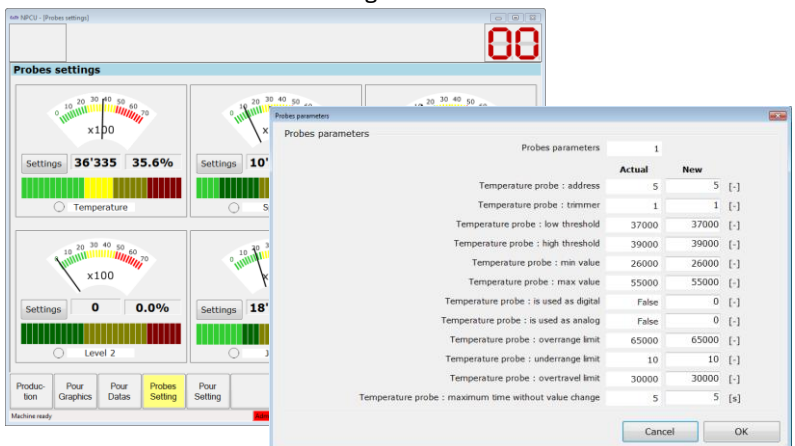
Settings

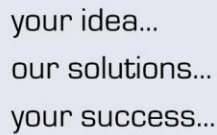
Sophisticated and graphical tools are developed by **EASYsa** and integrated into the **NPCU**. Possibility is given to modify all values, but also to keep old values and to cancel changes. For quality management all changes are stored in a log file.

Pouring parameters



Probes settings





Data and graphs for every pouring are saved on ASCII files and available on the Ethernet network.

- Pouring graph for each mold
- Data results for each mold
- Log files for reporting alarms, events, parameters changes

[illegible]

Alarm log				
Date/Time	N°	Text		
2023-01-11 11:30				
21.03.2016 13.32.36	305	Défaut Profibus	Cliquez ici la lecture des registres par Modbus	
21.03.2016 08.48.40	305	Défaut Profibus		
20.03.2016 10.16.53	305	Défaut Profibus		
20.03.2016 08.47.00	305	Défaut Profibus		
20.03.2016 17.28.44	305	Défaut Profibus		
20.03.2016 16.33.34	305	Défaut Profibus		
24.03.2016 10.46.40	305	Défaut Profibus		
24.03.2016 10.35.26	2	Fm de couler par points us		
24.03.2016 10.33.27	2	Fm de couler par points us		
24.03.2016 12.06.06	2	Fm de couler par points us		
24.03.2016 14.09.22	2	Fm de couler par points us		
24.03.2016 14.57.51	2	Fm de couler par points us		
24.03.2016 14.51.15	2	Fm de couler par points us		
24.03.2016 14.49.52	2	Fm de couler par points us		
24.03.2016 14.47.20	11	Couleur incertaine [point us incertain (sans le mètre)]		
24.03.2016 14.46.53	2	Fm de couler par points us		
24.03.2016 14.44.42	2	Fm de couler par points us		
24.03.2016 14.43.37	2	Fm de couler par points us		
24.03.2016 14.42.32	2	Fm de couler par points us		
24.03.2016 14.41.30	2	Fm de couler par points us		
24.03.2016 14.43.47	2	Fm de couler par points us		

Alarm log	Application log	Update log
Produit: Unité	Program: Ouvrages	Pour Data: Probes Setting

Alarms Log Paramètres Services



Tools are available to access parameters settings and monitor system information.

[illegible]

New Pouring Control Unit

Information

P/LC Version : 1.00
Main task cycle time : 2.000 [sec]
Main task exec. time : 0.041 [sec]
Fast task cycle time : 0.250 [sec]
Fast task exec. time : 0.004 [sec]
CPU usage : 31 [%]

Interface card

Version : 0.50
Temperature : 27.3 [°C]

HMI

version : 0.1.0.8
date : 27.03.2016
22:02:46

PC

System : Microsoft Windows 7 Professional / Win2012 / 6.1.7601.65536
CPU usage : 0.0 [%]
HDD Free space : 2085 [MB]

HDD Free space

Minimum : 2085 [MB]
Available physical : 774 [MB]
Total virtual : 2047 [MB]
Available virtual : 1937 [MB]

Production Pour Graphics Pour Data Probes Setting Pour Setting Alarms Log Parameter Services

MS-WINDOWS [Service]

00

Service

New Pouring Control Unit

EASY

User level

Administrator Change password

Adjuster Change password

Operator

Language selection

English

Active user level :
Administrator

Options Previous status System Info

Production Pour Graphics Pour Data Probes Setting Pour Setting Alarms Log Parameters Screens

NPCU is not a definitive product; this is an open system in which additional functions can be implemented.

- Camera option: machine positioning corrections during pouring (X, Y axis)

