

# HCS

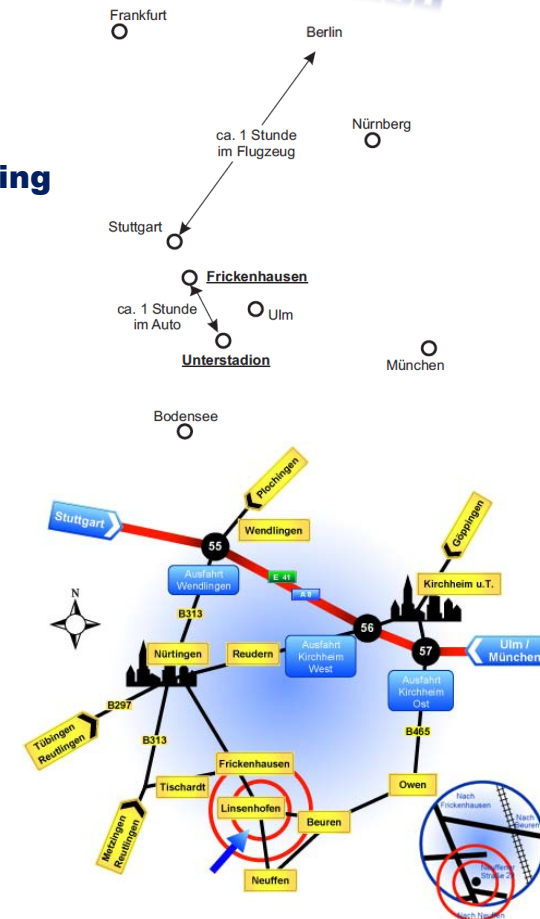
Hydraulic control systems



### ♦ Company

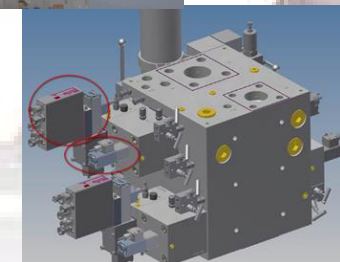
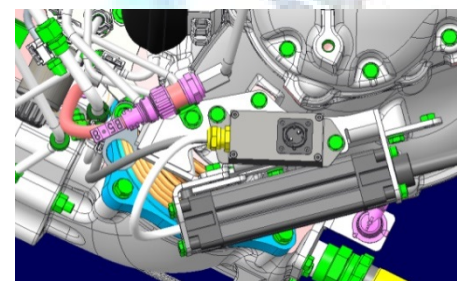
- **HCS GmbH – in Frickenhausen in the heartland of Baden–Württemberg – since 1997 a competent and reliable partner for all kinds of automation applications**
- **Focus and key competence is on development and manufacturing of electronic control systems for hydraulic and pneumatic applications and Embedded Control**
- **Outstanding customer service and shortest possible implementation leads to satisfied customers with an ever growing client base**
- **Best possible reliability of products and highest quality are part of the success**
- **A powerful team of employees – specialists in their fields are the essential point**
- **With over 30 years of experience in digital control we are always targeted at the optimum solution**

**2017!  
20 YEARS  
HCS GMBH**



### ◆ General History

- **Founded in 1997 as engineering office**
- **2 years project for high-speed tilting train**
- **Conversion to GmbH (Ltd) in 2000 and start with own product line**
- **From 2006 on modular amplifier DMA**
- **Begin of usage of PROFIBUS (2008)**
- **Realization of PROFINET Interface (2013)**
- **ATEX/IECEX electronic certified (2014)**
- **Development of IPX5/IPX9 On-Board electronic**
- **Re-development control electronic for tilting train project (2015)**
- **ODC series application on marine diesel engines and agricultural systems (2017/18)**
- **Redesign DAC-4 (complete modernization)**





### ◆ Data

- **22 distributors and partners in > 12 countries**
- **> 80.000 electronic units in the field and more than 3.000 bus-interface applications**
- **> 70 % export rate**
- **Customers on all 5 continents**
- **> 80 man year experience / 7 employees**
- **Philosophy and Destination**
  - **Customer is always key focus**
  - **Flexible and solution oriented acting**
  - **Fast execution and innovative solutions**
  - **Quality oriented completion**
  - **Cost sensitive realization of requirements**



### ◆ Competencies Electronic development

- **Analogue and digital circuit technology**
- **Equipment for automation engineering**
- **Core competency in fluid technology**
- **Bus-Interfaces (PROFIBUS/NET, ETHERNET, CAN)**
- **Integrated development of Hard-/Software**
- **PCB and complete systems development**
- **Specialized on Embedded Control**
- **Additional special experience in development of electronic equipment for usage in:**
  - **EX-applications**
  - **Offshore**
  - **Mining**



### ◆ 2017 / 2018

- „ODC“ for agricultural application
- Series application DMA 5-fold with E/IP interface for milk packaging factory – Brake controller functionality
- Re-certification of PROFINET and PROFIBUS interfaces for DMA
- Start development customer specific LVDT sensor electronics
- Series application for power supply and EMC filter PCB for lighting application
- CANopen application DMA in oil monitoring system
- Start re-development DAC-4 series
- Qualification test of PT-boards on rolling stock for high-speed train application started
- More to come!



#### Certificate

PROFIBUS Nutzerorganisation e.V. grants to  
HCS Hydraulic Control Systems GmbH  
Neuffener Str. 29, 72636 Frickenhausen, Germany  
the Certificate No. Z10981 for the PROFIBUS IO Device:  
Model Name: DMA/DAC  
Revision: SW/FW-V0.1.0; HW: 2  
Identnumber: 0x01F0; 0x0002  
GSD: GSDML-V2.3-HCS-DMA-20150204.xml  
DAP: DAP 3: Standard, MRP, 0x00000003

This certificate confirms that the product has successfully passed the certification tests with the following scope:  
☒ PNO\_Verision V2.2  
☒ Conformance Class C  
☒ PNO\_Tester\_Verision V2.2.4  
☒ Tester SIEMENS AG, Fürth, Germany, PN329-1, IRT079-1

This certificate is granted according to the document:  
 "Framework for testing and certification of PROFIBUS and PROFINET products".  
 For all products that are placed in circulation by February 26, 2021 the certificate is valid for life.

Karlsruhe, March 07, 2018

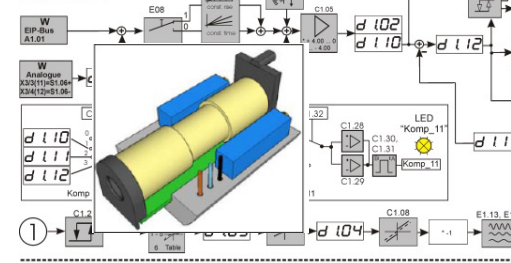
Board of PROFIBUS Nutzerorganisation e.V.

(Official in Charge)

(Karlstein Schneider)

(Dr. Jörg Hübner)

#### Branch 1

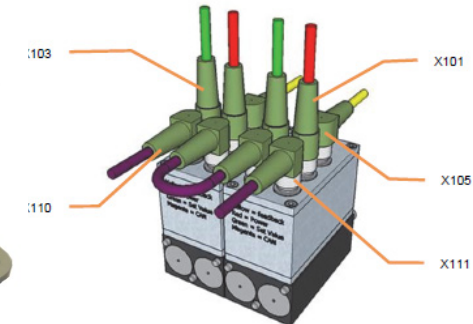


#### Branch 2

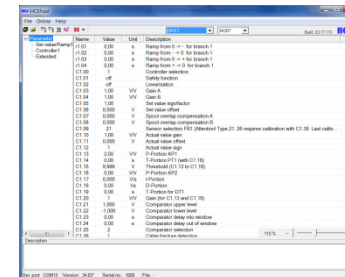


### ◆ 2016

- „ODC“ first serial application in marine environment
- „ODC“ CANOpen functionality implemented
- Independent power supply now available for DMA with PROFINET or PROFIBUS
- Pre-development study for LVDT sensor electronics for solenoid manufacturer
- HCSTool new features implemented:
  - help function with integrated manuals
  - zoom function for screen size
- Welcome to our new partners in Italy



*CANopen*



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gianluigi.uciari@asteriscotech.com  
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### ◆ 2015

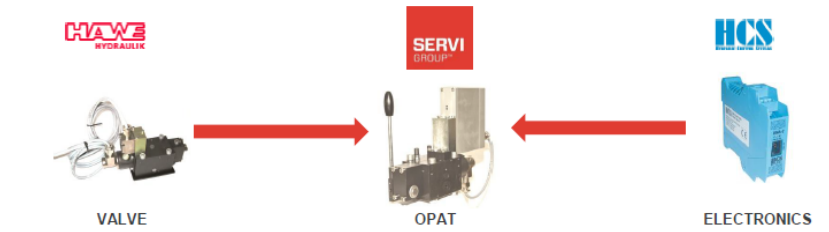
- Start of development of On-Board electronic „ODC“ for general applications
- Certification of PROFINET-Interfaces for DMA by PNO
- Re-development of amplifier and controller board for tilting train application (THC)
- Development and manufacturing of connection and supply boxes for usage in sanitary area
- Total redesign and update of webpage  
→ [www.h-c-s-gmbh.de](http://www.h-c-s-gmbh.de)
- More than 50.000 DMA reliably used in all kinds of applications





### ◆ 2014

- **Certification of On-Board electronic „OPAT“ (ATEX and IECEx) by NEMKO/Presafe**
- **Certification of DMA PROFIBUS-Interfaces by PNO**
- **Extension of PROFIBUS functionality by implementation of PROFIDRIVE**
- **PROFINET devices ready for series applications**
- **New partners in Sweden and India**
- **Redesign of adapter for RS232 ↔ USB**
- **Take over of production for several electronic devices for sanitary applications**



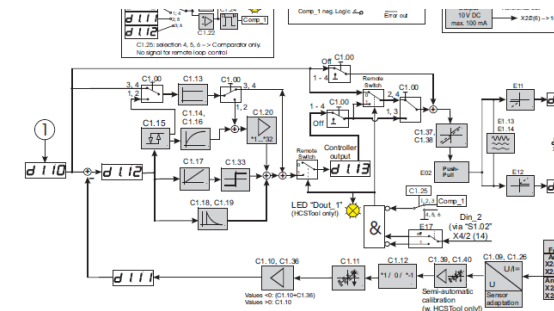
### ◆ Overview

- **Digital amplifier and controller modules (DMA)**
- **Digital amplifier and controller boards (DAC)**
- **Digital On-Board amplifier and controller (ODC)**
- **Bus-Interfaces – PROFIBUS, PROFINET, ETHERNET/IP, CANopen (DAC, DMA, ODC)**
- **LVDT sensor interfaces (DAC, DMA)**
- **Parameterization software (HCSTool)**
- **Commissioning units, hand-held control unit, interface adapter (accessories)**
- **Customer specific adaptations and electronic devices**



### ◆ DMA (Digital Module Amplifier)

- 2 and 2 x 1 – channel version – open-loop applications
- Closed loop applications (valve or process)
- With Bus-Interfaces (PROFIBUS, PROFINET, CAN-OPEN, ETHERNET/IP); single/multi-fold
- With LVDT sensor interface
- Commissioning unit, interface adapter
- Customer specific adaptations (soft- and hardware, brand-labeling)





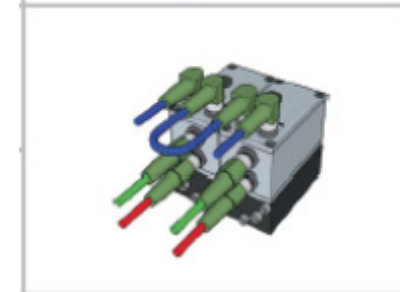
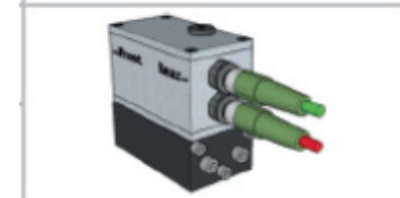
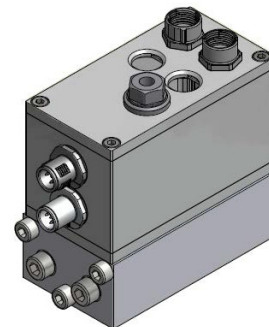
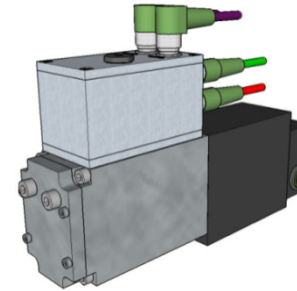
### ◆ **DAC (Digital Amplifier Controller)**

- **2 and 2 x 1 – channel version – open-loop applications**
- **Closed loop applications (valve or process)**
- **With Bus-Interface (PROFIBUS)**
- **With LVDT sensor interface**
- **Commissioning unit, interface adapter**
- **Customer specific adaptations (soft- and hardware, brand-labeling)**



### ◆ ODC (On-Board Digital Controller)

- 2 and 2 x 1 – channel version – open-loop applications
- Closed loop applications (valve or process)
- With Bus-Interface (CAN-OPEN-BUS)
- Customer specific adaptations (soft- and hardware, housing, connectors)
- Multiple configurations and adaptations possible



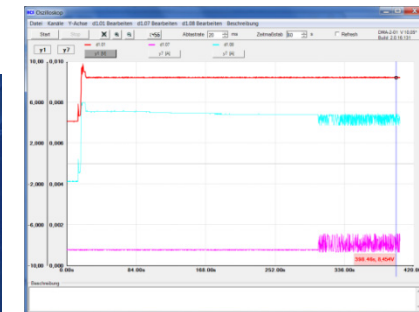
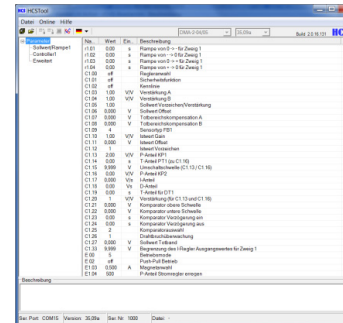
### ◆ HCSTool (Parameterization-Software)

- For all HCS products universally usable
- 3 languages on installation (D, E, F)
- With integrated oscilloscope-function for DMA modules

- Free of charge download from our web page

[www.h-c-s-gmbh.de/download](http://www.h-c-s-gmbh.de/download)

- Customer specific adaptations possible (Brand-Labeling, foreign languages)



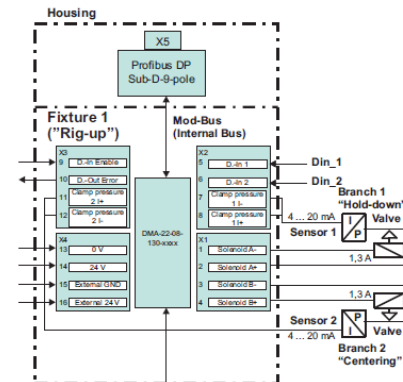


### ◆ Customer specific (Adaptations, Electronics)

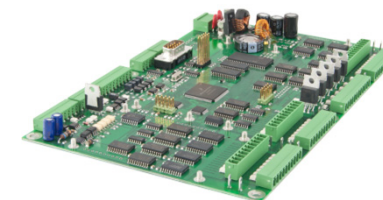
- **Brand-Labeling / OEM**  
(DAC, DMA, HCSTool etc.)



- **Special Soft- and Hardware**



- **Engineered to order:**  
**fluid technology applications**



- **Engineered to order:**  
**Embedded Control applications**

### ◆ EUROPE

#### NORWAY, ALL NORDIC COUNTRIES



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