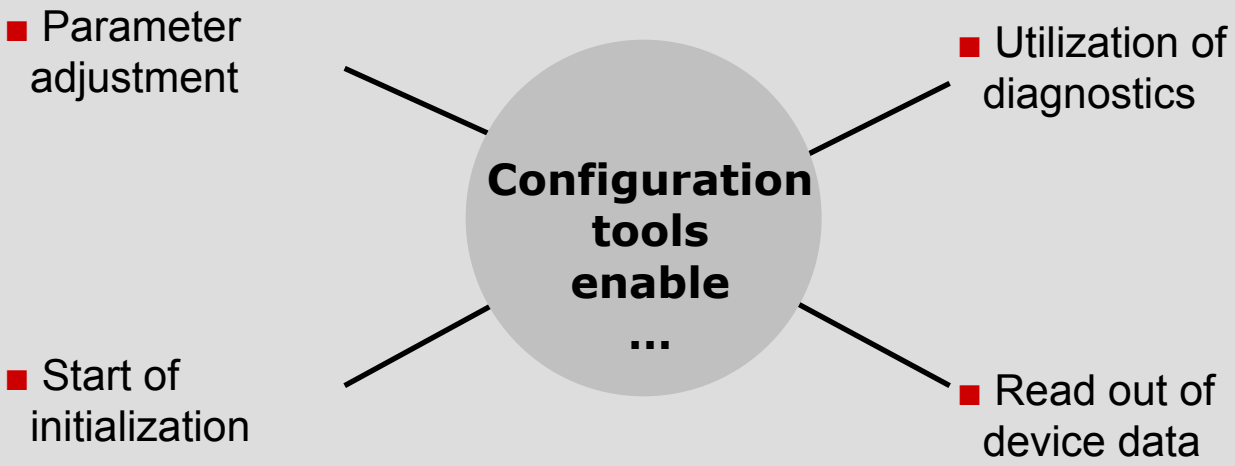
Configuration Tools

Product Management and Marketing • Positioners and Valve Accessories
July 2014

Agenda

- Why Configuration Tools?
- User Interfaces
- Local Configuration Possibilities
  - On-site Configuration
  - TROVIS-VIEW
  - Definition DTM/FDT
  - Stand alone Applications
  - Handhelds
  - Overview Positioners and Relevant Hard- and Software
- Configuration Tools for Communication Protocols

Why Configuration Tools?



- Configuration Tools are the interface between positioner and user
- Different configuration tools can be used, depending on the technical equipment of the customer and the device

Overview – Access Interfaces

On-site configuration	SSP port	HART / Foundation Fieldbus / Profibus
	Interface adapter cable & PC	DD / EDD / DTM
	TROVIS-VIEW	- Handheld or PC - Cable / Modem
		DCS
		Stand alone frame application (e.g. FDT…)
		Engineering tools (e.g. AMS,PRM…)

Local configuration

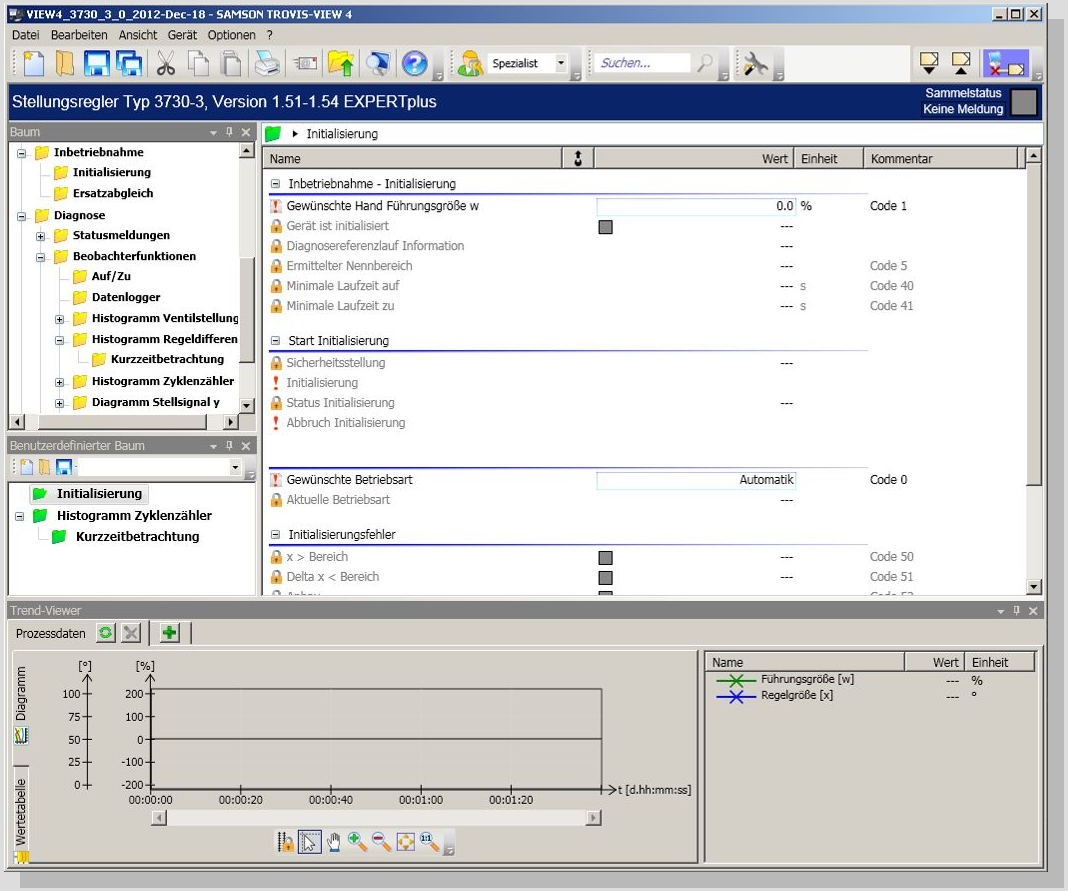
Local Configuration – On-site Configuration

- Standard operation of digital positioners directly at the device to navigate through the menu and to adjust the parameter codes
- Turn/push button for 3730 series

- Capacitive keys for type 3725

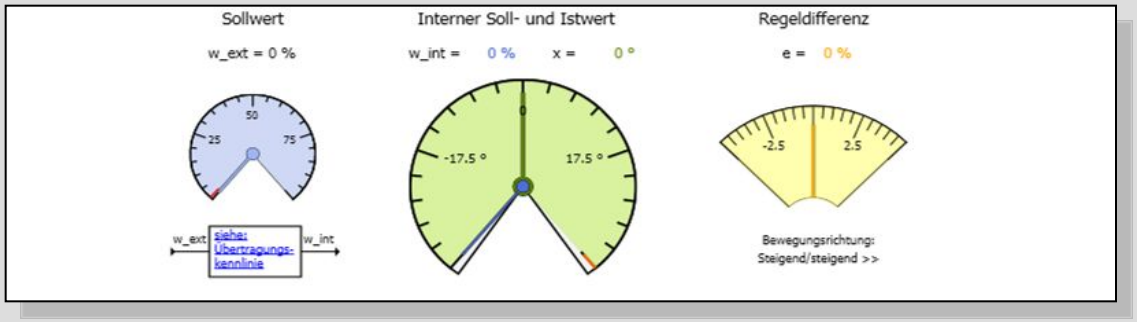
Local Configuration – TROVIS-VIEW

- More complex visualization possible
- Standardized operating interface for more than 25 different SAMSON devices



Local Configuration – TROVIS-VIEW

- Graphics (histograms, trends, …)



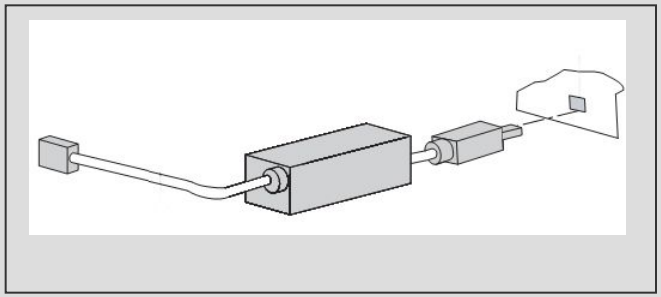
- TROVIS-VIEW on the Internet – information / download / driver software
  http://www.samson.de/page.php?sp=de&lh=l4&ll=l99&ti=TROVIS-VIEW&bo=service/de-trovis-view.php

Download TROVIS-VIEW with device-specific modules

Product	TROVIS-VIEW	
Heating and District Heating Controller **TROVIS 5431**	V 3.6	
Electropneumatic Positioner with HART® communication **3730-3**	V 3.6	V 4.0
Electropneumatic Positioner with PROFIBUS-PA communication **3730-4**	V 3.6	V 4.0
Electropneumatic Positioner with FOUNDATION™ fieldbus communication **3730-5**	V 3.6	V 4.0

Local Configuration – TROVIS-VIEW

- Connection to PC via SSP interface
  - Isolated USB Interface Adapter necessary

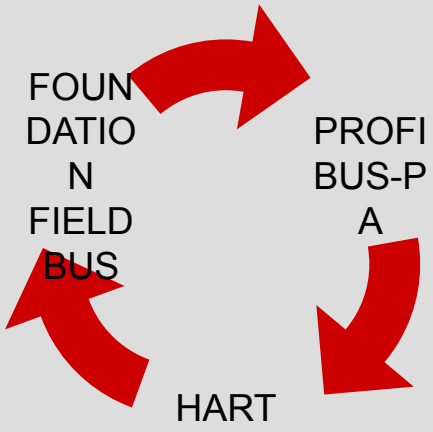


- TROVIS-VIEW 4 is interoperable with:
  - Windows® XP
  - Windows® Vista
  - Windows® 7

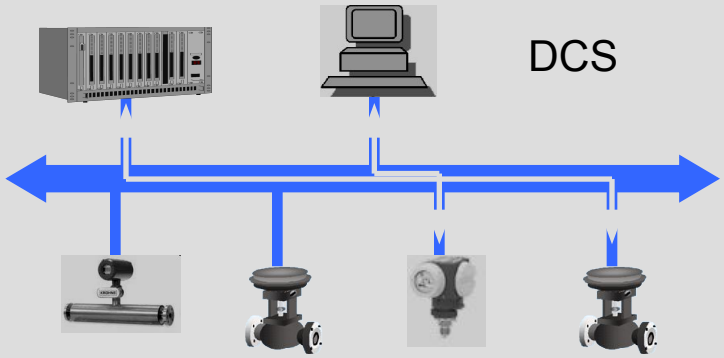
- Versions ≥ 3.60 are free

Configuration Tools for Communication Protocols

- Communication Protocols



- Fieldbuses
  - Connect field devices to



- HART
  - Uses input signal 4 – 20 mA

Integration Software for Field Devices

Software „driver“ for field device description in specific description languages, summarize the performance characteristics of the field devices and serve as drivers for the device integration

- DD – Device Description
- eEDD – enhanced Electronic Device Description / Enhancements enable visualization of graphics, histograms, trends …
- GSD – Device data base file / PROFIBUS
- DTM – Device Type Manager / Includes an own operation tool

SMART VALVE INTEGRATION CENTER

What is FDT/DTM ?

FDT – Field Device Tool

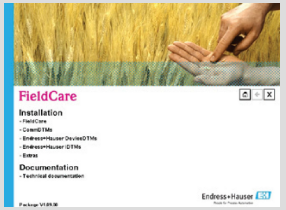
- Standardized (software) interface; specifies the data transmission between the system level (FDT frame application) and the field devices (e.g. positioners)

DTM – Device Type Manager

- Every field device (e. g. positioner) has its own – manufacturer specific – driver including a configuration tool, comparable to a printer. This driver is called Device Type Manager (DTM) and contains all data and functions of the field device.
- SAMSON DTM can be downloaded: *http://www.samson.de/page.php?sp=de&lh=l4&ll=l99&ti=Integration%20in%20Engineering%20Tools%20und%20Systeme&bo=service/de-dtm.php*
- SAMSON device DTM enable as device drivers the integration in FDT-based frame applications such as:
  - Engineering tools via DCS
  - FDT-based „stand-alone“ configuration software, e.g. PACTware or Fieldcare

Local Configuration Possibilities – FDT/DTM as „Stand-Alone Application“

- Connection to the 4 – 20 mA signal outside of an explosion protected area
- „Stand-alone“ FDT frame applications such as PACTware or Fieldcare enable the use of the SAMSON positioner DTM for the local configuration
- PACTware is a manufacturer-, fieldbus- and device-independent FDT frame application to process DTM via a computer
- **HART positioner (373x-3 & 3730-6)**
  - ✔ HART modem with USB interface
  - ✔ Positioner DTM
  - ✔ Modem driver
- Fieldbus positioners (3730-4 & 373x-5) need a high-priced Fieldbus card



SAMSON Positioner DTM

PACTware

File Edit View Project Device Extras Window Help

Project

Device tag

HOST PC

COM7

-/-

-/- Parameter

Expert+

Device name: SAMSON 373X-3 (Rev6) R1.51-1.59

Description: 373X-3 (Rev6) / DTM (v.1.4.0)

Condensed state No message

SAMSON MESS- UND REGELTECHNIK

Device catalog

- Positioner Type 3730-3
  - Settings
    - Identification
    - Operation unit
    - Positioner
  - Start-up
    - Initialization
    - Substitution
  - Diagnosis
    - Status messages
      - Logger
      - Extended
      - Reset
      - HART Device statu
      - Simulation
    - Statistical information
    - Tests
    - Leakage detection
  - Operation
    - Process data
    - Operating mode
    - Reset
    - Maintenance

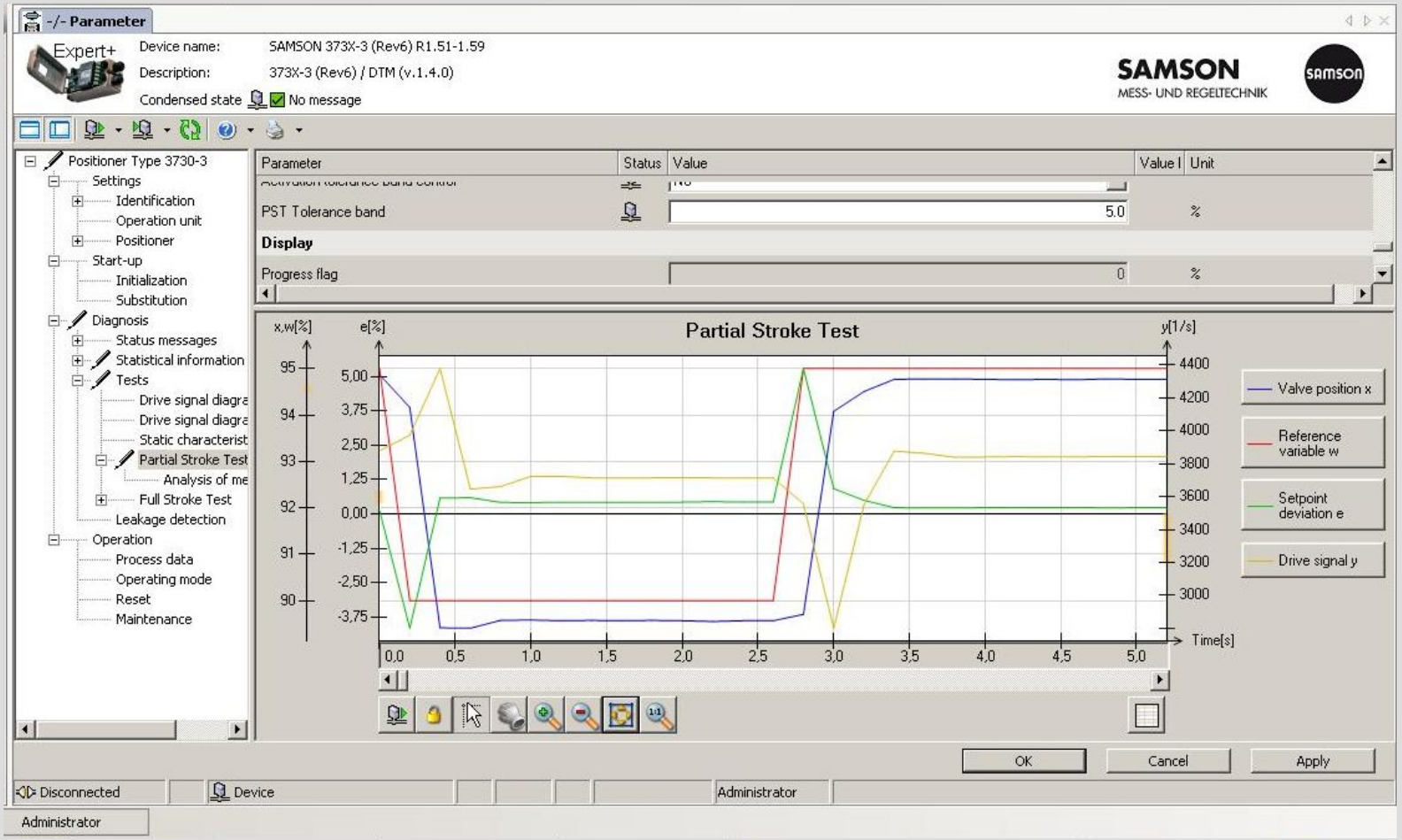
Parameter	Status	Value	Value I	Unit
Diagnosis - Status messages - Extended				
Air supply		OK		
Shifting working range		OK		
Leakage pneumatics		OK		
Limit working range		OK		
Observing end position		OK		
Connection positioner - valve		OK		
Working range		OK		
Friction		OK		
Actuator springs		OK		
Inner leakage		OK		
External leakage		OK		
PST/FST		OK		
Open/Close		OK		

OK Cancel Apply

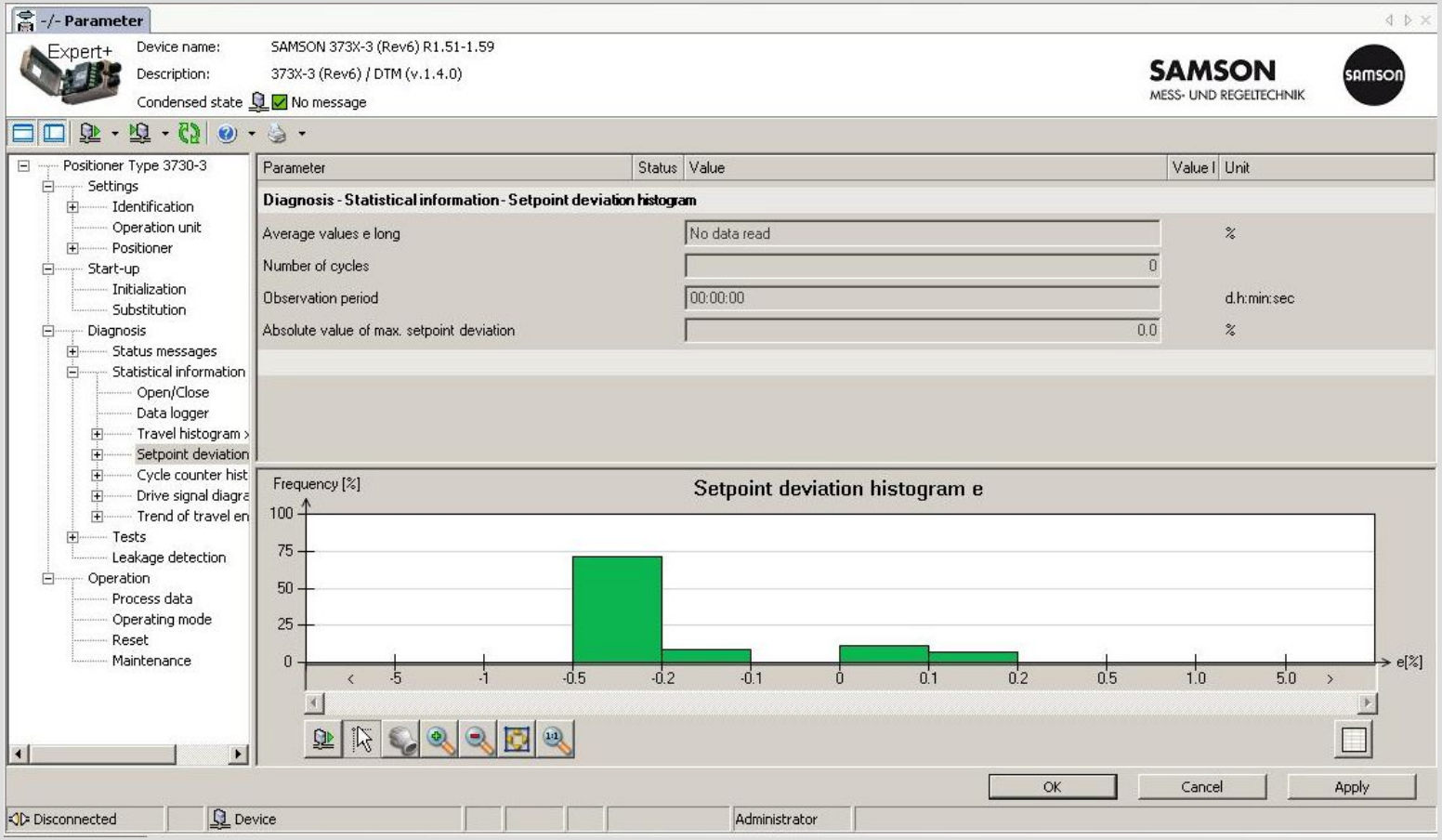
Disconnected Device Administrator

<NONAME> Administrator

SAMSON Positioner DTM

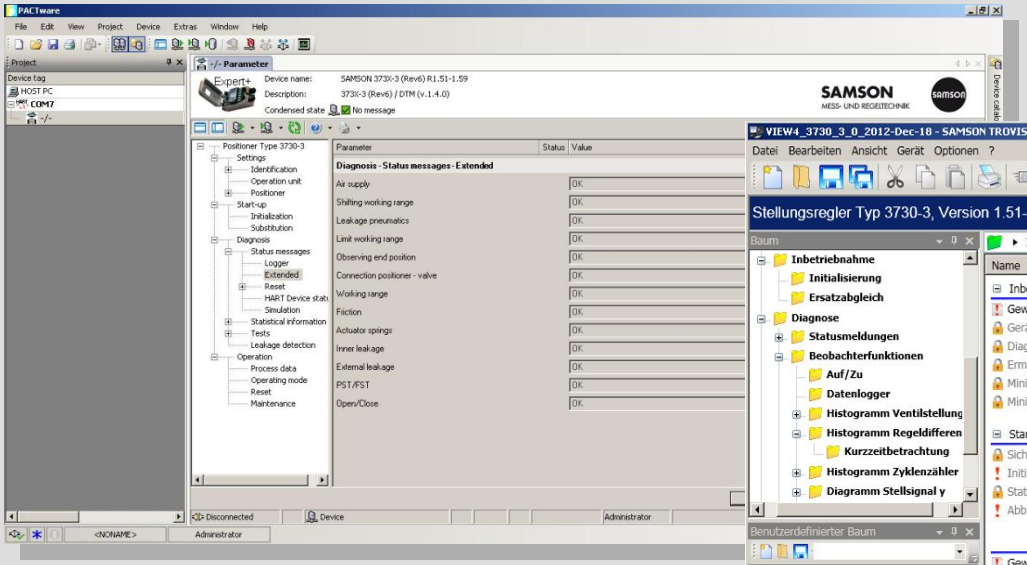


SAMSON Positioner DTM

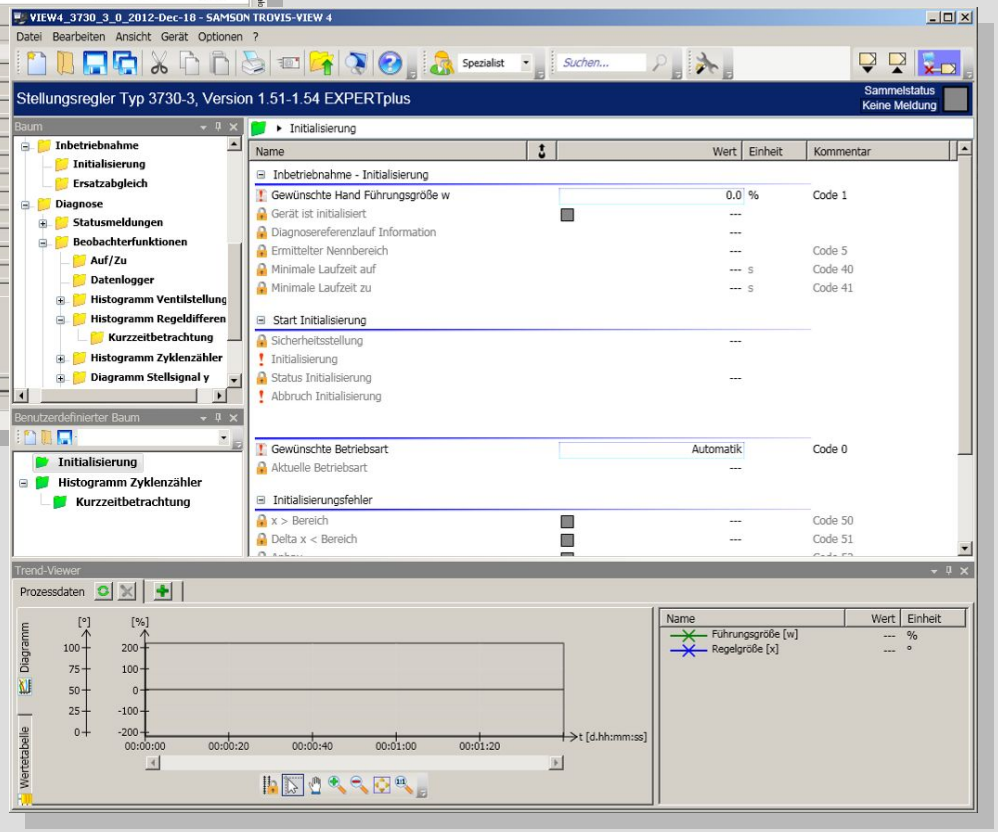


DTM & TROVIS-VIEW

- DTM

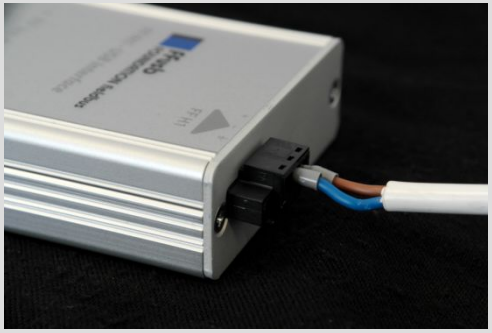


- TROVIS-VIEW



Local Configuration Possibilities – Stand-Alone Solutions for Fieldbus Applications

- Local Stand-alone solutions also for fieldbus available
- Special fieldbus cards are necessary
- Very expensive solution (several thousand Euro) because of the fieldbus cards
- Only few applications



Local Configuration Possibilities – Solutions for Fieldbus Applications

- Gateways with connection via TCP/IP
- Communication parallel to DCS
- Required software and hardware:
  - Gateway
  - Computer with FDT frame application (e. g. PACTware)
  - DTM
  - Ethernet network or crossover cable (between computer and gateway)
- Gateways:
  - FG PROFIBUS by Softing for PROFIBUS
  - FG-110 FF by Softing for FOUNDATION Fieldbus

FG-110 FF (Softing)

FG PROFIBUS (Softing)

Local Configuration Possibilities – Handhelds

- Emerson Field Communicator 375/475
  - Read-out of device data
  - Configuration of the field device
  - For HART and FOUNDATION FIELDBUS

- Connection
  - Direct connection to field device
  - Parallel connection to computer possible, for more comfortable configuration and for the use of a bigger display
  - Hardware included in delivery

- Handhelds by E+H
  - Field Xpert SFX100
  - With HART-Bluetooth-modem for the connection

Overview –
Local Configuration Tools for Different Positioners

	TROVIS-VIEW	FDT/DTM*	Handhelds	Stand-alone solutions for fieldbuses
3730-0	-	-	-	-
3730-1	-	-	-	-
3730-2	X	-	-	-
373x-3	X	X	X	-
3730-4	X	X	-	X
373x-5	X	X	X	X
3730-6	X	X	X	-

*** Also as device driver for FDT-based engineering tools via DCS**

Overview – Required Hardware and Software for Local Configuration Tools

	TROVIS-VIEW	FDT/DTM*	Handhelds	Stand-alone solutions for fieldbuses
Software required	TROVIS-VIEW + driver for Isolated USB Interface Adapter	PACTware or FieldCare, positioner DTM, communication DTM (driver)	(E)DD, manufacturers‘ software, if connection to PC required	NI fieldbus configurator (for FF) or PACTware (for devices with DTM)
Hardware required	Isolated USB Interface Adapter	HART modem with USB access (e.g. VIATOR USB HART IF by MACTeK Corporation)	Handheld and manufacturer specific hardware	Fieldbus card

*** Also as device driver for FDT-based engineering tools via DCS**

Configuration Tools for Communication Protocols

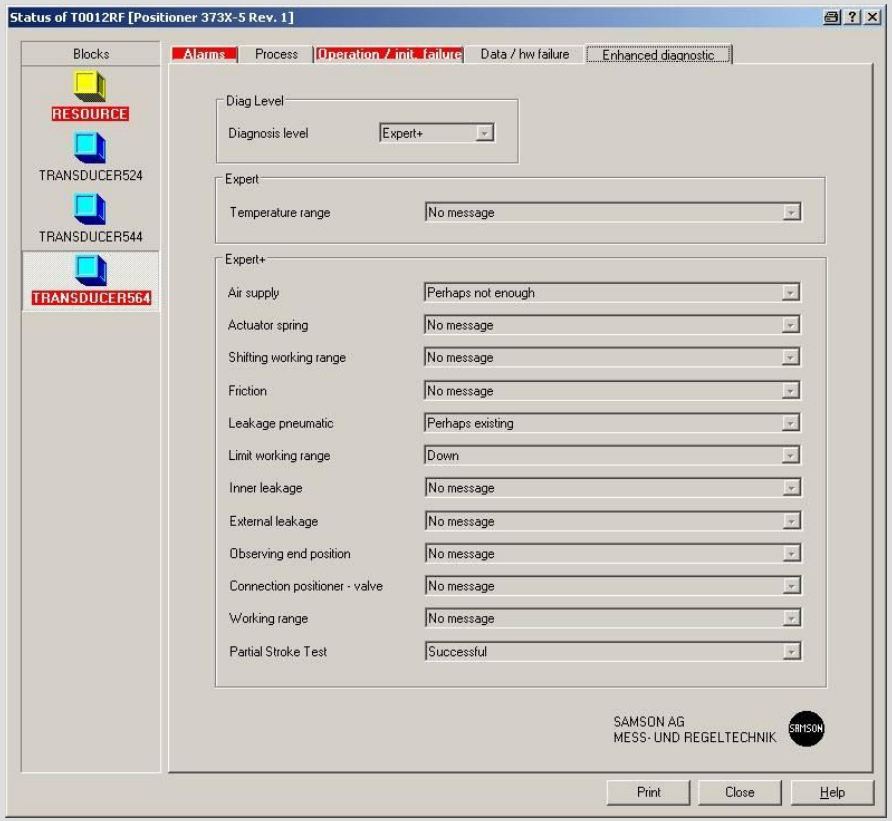
	Emerson Delta V/ AMS	Yokogawa Centum/ PRM	Siemens PDM / only DD	Honeywell Experion
	AMS Suite	PRM Plant Resource Manager	SIMATIC PDM	EXPERION PKS
HART 373x-3/-6	X	X	X	X
Foundation Fieldbus 373x-5	X	X	X	X
Profibus 3730-4			X	

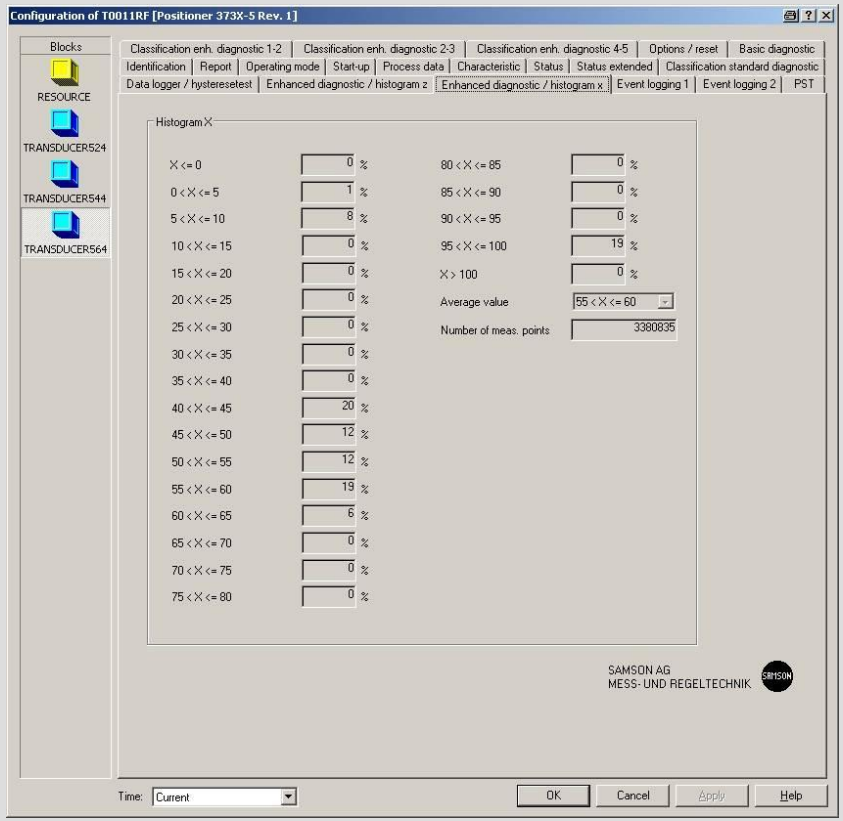
Status: January 2013 // ABB 800XA (FF + Profibus / only DTM)

- Suitable device integration software (DD, DTM…) as well as further integration: http://www.samson.de/page.php?sp=de&lh=l4&ll=l2

Example – Emerson Delta V/AMS

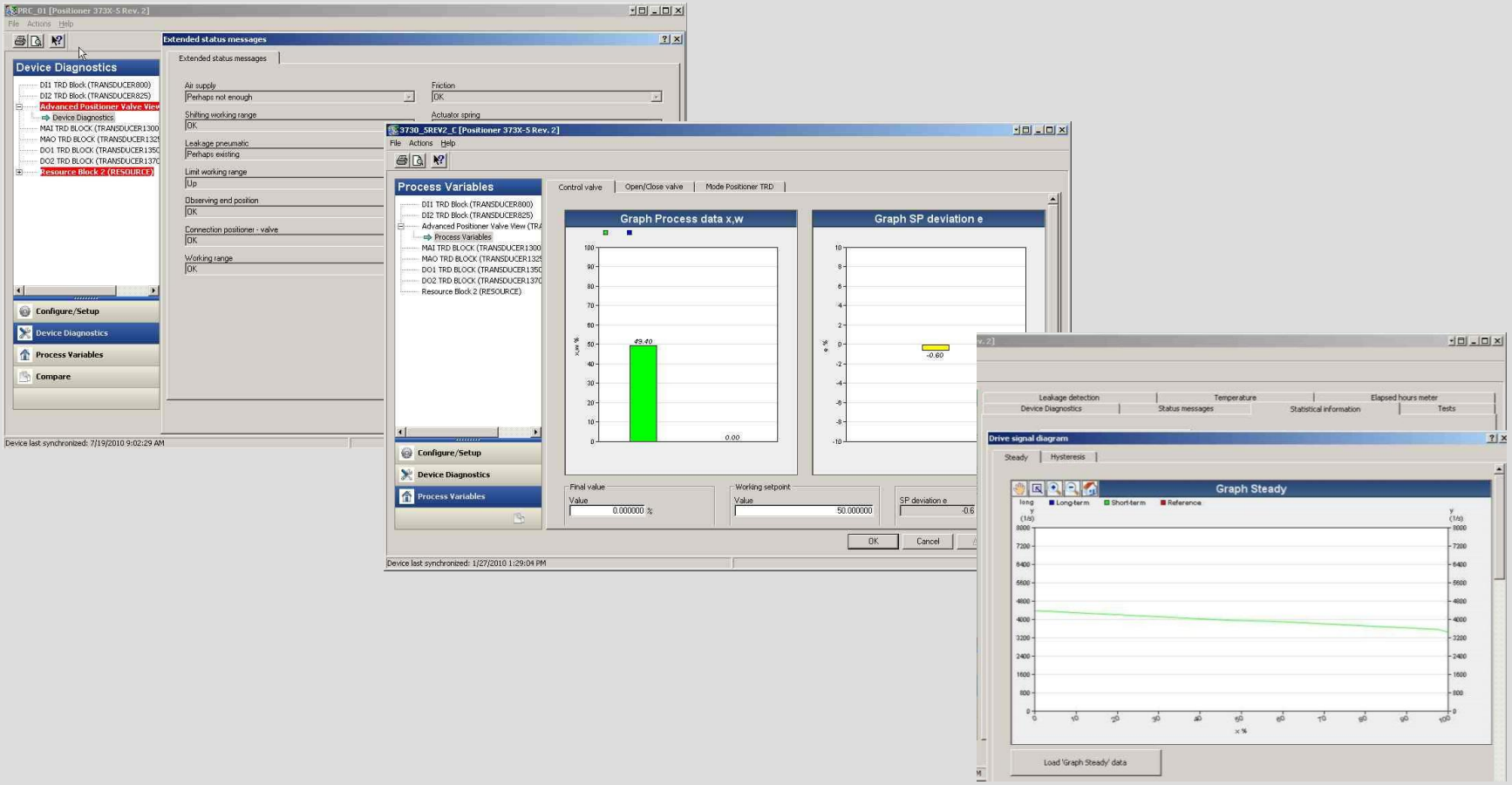
- Positioner type 3730-5 / Rev. **1** – Integration via **DD**





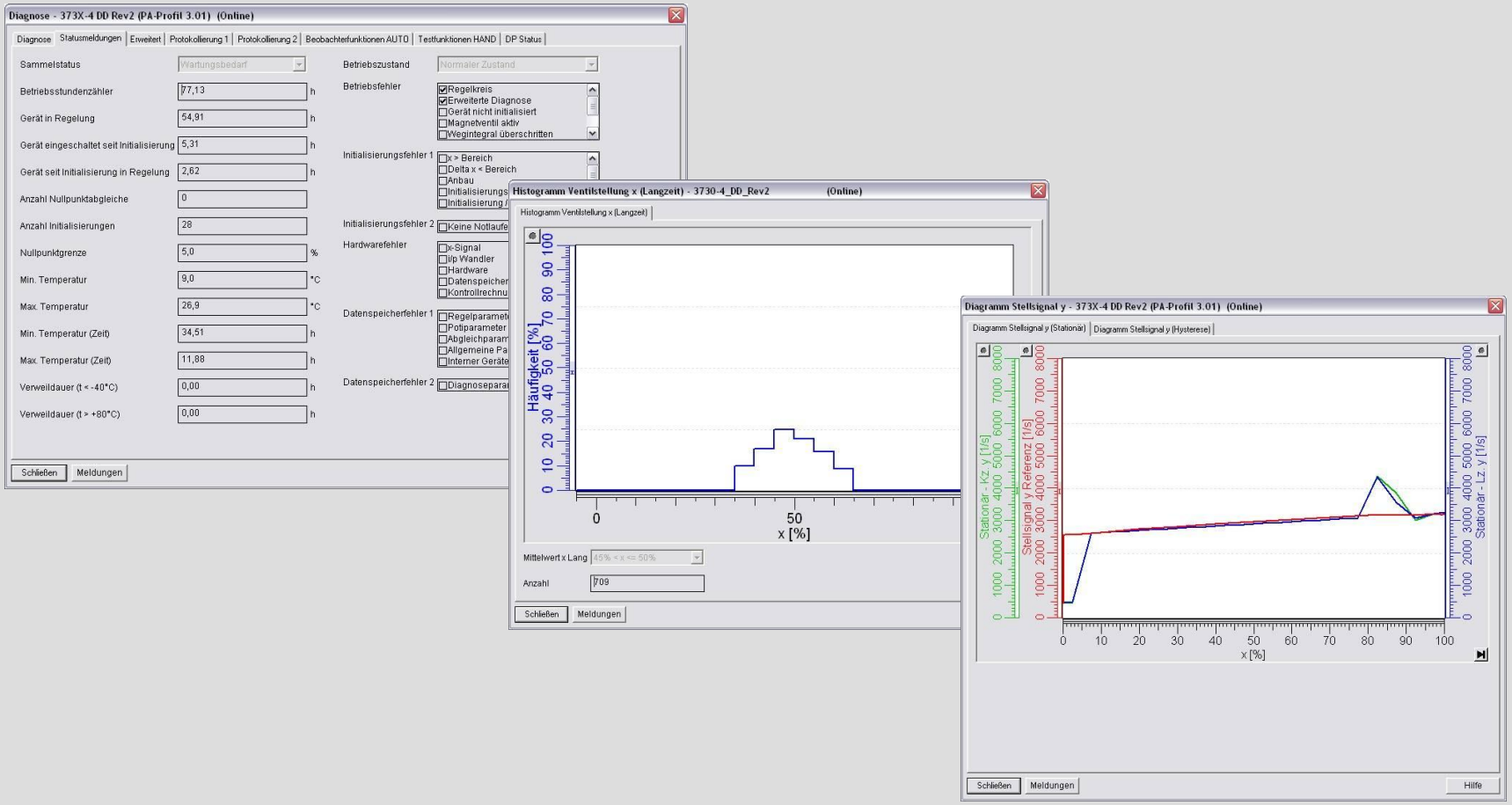
Example – Emerson Delta V/AMS

- Positioner type 3730-5 / Rev. **2** – Integration via enhanced **EDD**



Example – Siemens PDM

- Positioner type 3730-4 – Integration via enhanced **EDD**



Example – Yokogawa PRM

- Positioner type 3730-3 – Integration via **DTM**