SYS TEC
ELECTRONIC

10010

sysWORXX CTR-700

SYS TEC electronic GmbH

PREDICTIVE MAINTENANCE
& CONDITION MONITORING

Programmable in the language of your employees

sysWORXX CTR-700 – powerful and versatile industrial controller
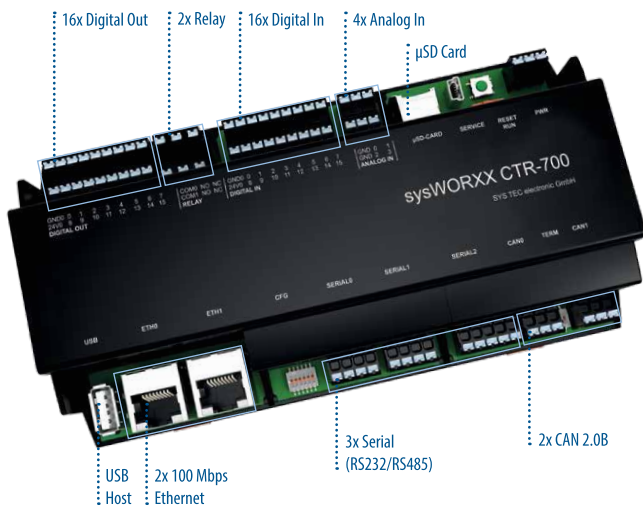to connect automation with IT

TECHNICAL FACTS

FEATURES

- Mountable on DIN rail
- NXP i.MX7 / Dual Cortex-A7
- 1024 MB RAM, 8GB eMMc

- Interfaces: digital & analog I/Os, TCP/IP, MQTT, Modbus, CANopen, USB, µSD
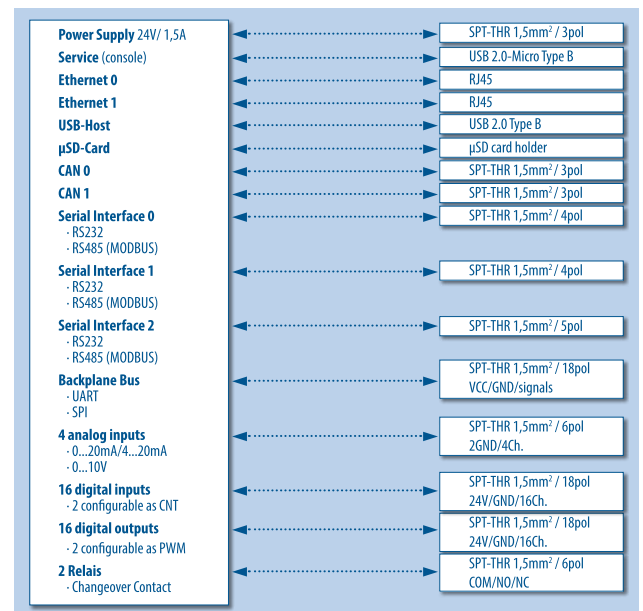- Programmable in IEC 61131-3 and IoT languages

INTERFACES
via digital & analog I/Os

16x Digital Out 2x Relay 16x Digital In 4x Analog In

µSD Card

sysWORXX CTR-700
SYS TEC electronic GmbH

USB Host | 2x 100 Mbps Ethernet

3x Serial (RS232/RS485)

2x CAN 2.0B

BLOCK DIAGRAM
sysWORXX CTR-700

Power Supply 24V/ 1,5A	SPT-THR 1,5mm² / 3pol
Service (console)	USB 2.0-Micro Type B
Ethernet 0	RJ45
Ethernet 1	RJ45
USB-Host	USB 2.0 Type B
µSD-Card	µSD card holder
CAN 0	SPT-THR 1,5mm² / 3pol
CAN 1	SPT-THR 1,5mm² / 3pol
Serial Interface 0 · RS232 · RS485 (MODBUS)	SPT-THR 1,5mm² / 4pol
Serial Interface 1 · RS232 · RS485 (MODBUS)	SPT-THR 1,5mm² / 4pol
Serial Interface 2 · RS232 · RS485 (MODBUS)	SPT-THR 1,5mm² / 5pol
Backplane Bus · UART · SPI	SPT-THR 1,5mm² / 18pol VCC/GND/signals
4 analog inputs · 0...20mA/4...20mA · 0...10V	SPT-THR 1,5mm² / 6pol 2GND/4Ch.
16 digital inputs · 2 configurable as CNT	SPT-THR 1,5mm² / 18pol 24V/GND/16Ch.
16 digital outputs · 2 configurable as PWM	SPT-THR 1,5mm² / 18pol 24V/GND/16Ch.
2 Relais · Changeover Contact	SPT-THR 1,5mm² / 6pol COM/NO/NC

PROGRAMMING
via IEC 61131-3 & IoT languages

Example for Visualisation in Node-RED

SYSTEM SOFTWARE

Operating System	Linux / Debian
PLC Runtime	OpenPCS – IEC 61131-3
Wiring Editor	Node-RED
Further Programming Languages	C#, C/C++

COMMUNICATION PROTOCOLS

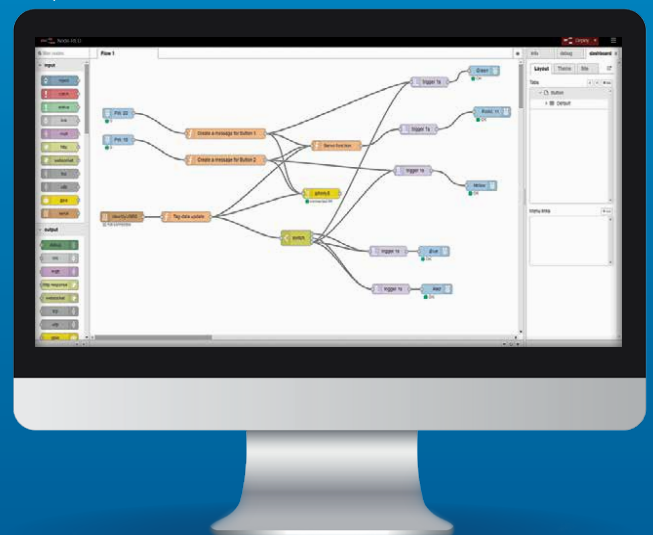|	
IoT Data Protocols	OPC UA, MQTT
Fieldbus Protocols	CANopen, CAN Layer 2, Modbus & more
Mesh Network	Wirepas via Extension Module

VISUALISATION

Standard for PLC	SpiderControl / IniNet (*commercial license*)
Alternative Visualisation	Node-RED (*free license*)

REMOTE ACCESS

System Services	SSH / Telnet, SFTP / FTP, HTTPD

USE CASES WITH YOUR ADDED VALUE FOR INDUSTRY 4.0

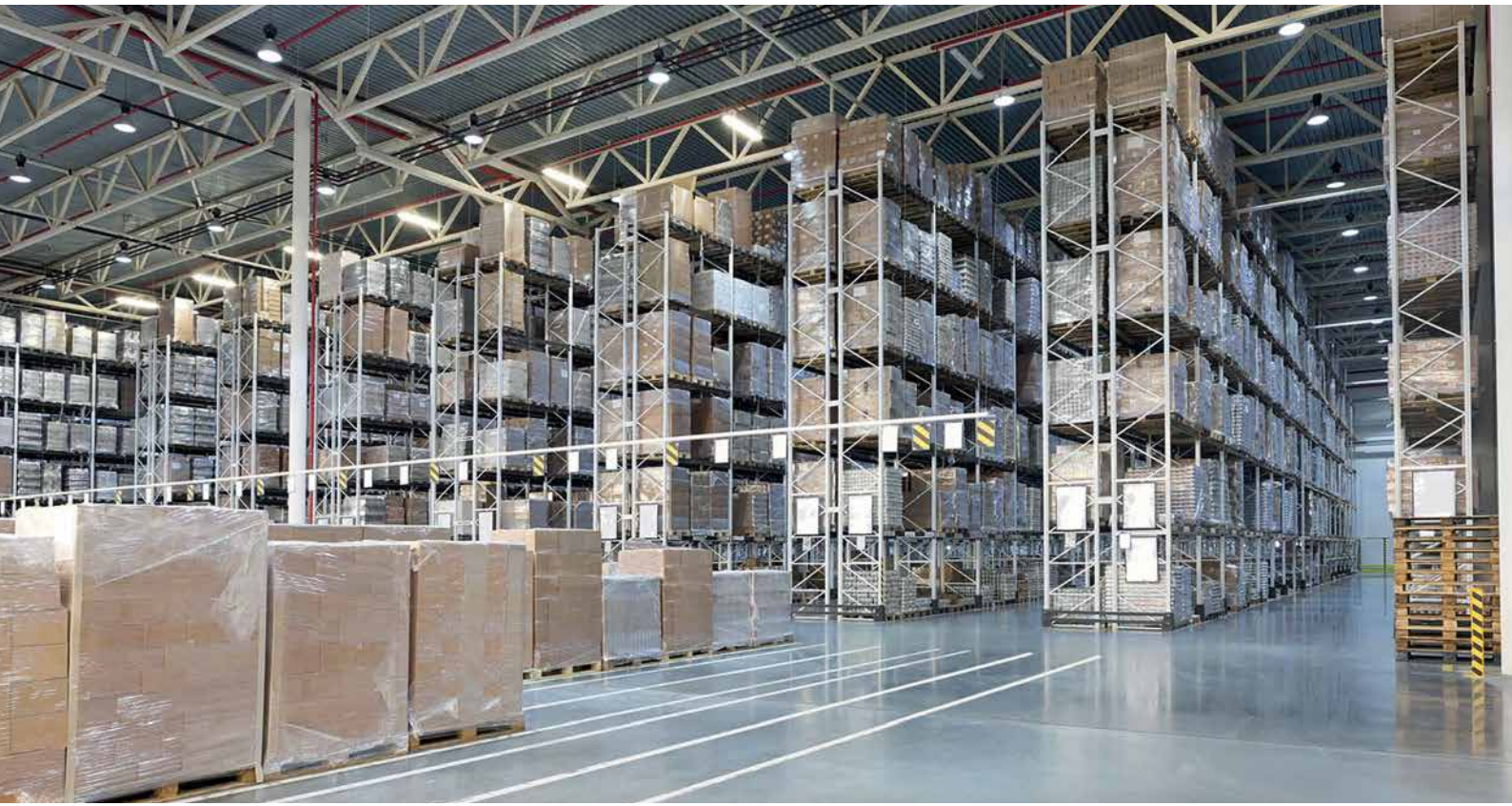## SMART CONTROL – Your digital automation 4.0

ADVANTAGES

· Open programmable system in the following languages:
  · OpenPCS – IEC 61131-3
  · Node-RED
  · Java
  · Python
  · C#
  · C / C++

· Acquisition, consolidation and evaluation of diverse data points from systems to be monitored

· Data transfer to the cloud via MQTT

ADDED VALUE

· Elimination of costly, external service providers for programming

· Process optimization through data acquisition

· Cost savings through process optimization

· Live monitoring of relevant data *(condition monitoring)*

· Early detection of possible failures / errors *(predictive maintenance)*

USE CASES WITH YOUR ADDED VALUE FOR INDUSTRY 4.0

SMART ASSET TRACKING – Your digital logistics 4.0

ADVANTAGES

· Connection to mesh networks from different manufacturers

· Visualisation via Node-RED *(online)* & OPC UA *(target)*

· Robust, industrial-grade housing

· Strict separation of Enterprise IT & Shop Floor OT

· Direct connection of standard equipment from mechanical and plant engineering

ADDED VALUE

· Stock-level tracking

· Live monitoring of the flow of goods in production

· Flexibly controllable transportation orders

· Significantly shorter loading and unloading times

· Cost savings through process optimization

· Efficient use of resources *(e.g. transport vehicles)*

SMART ENERGY – Your digital energy management 4.0
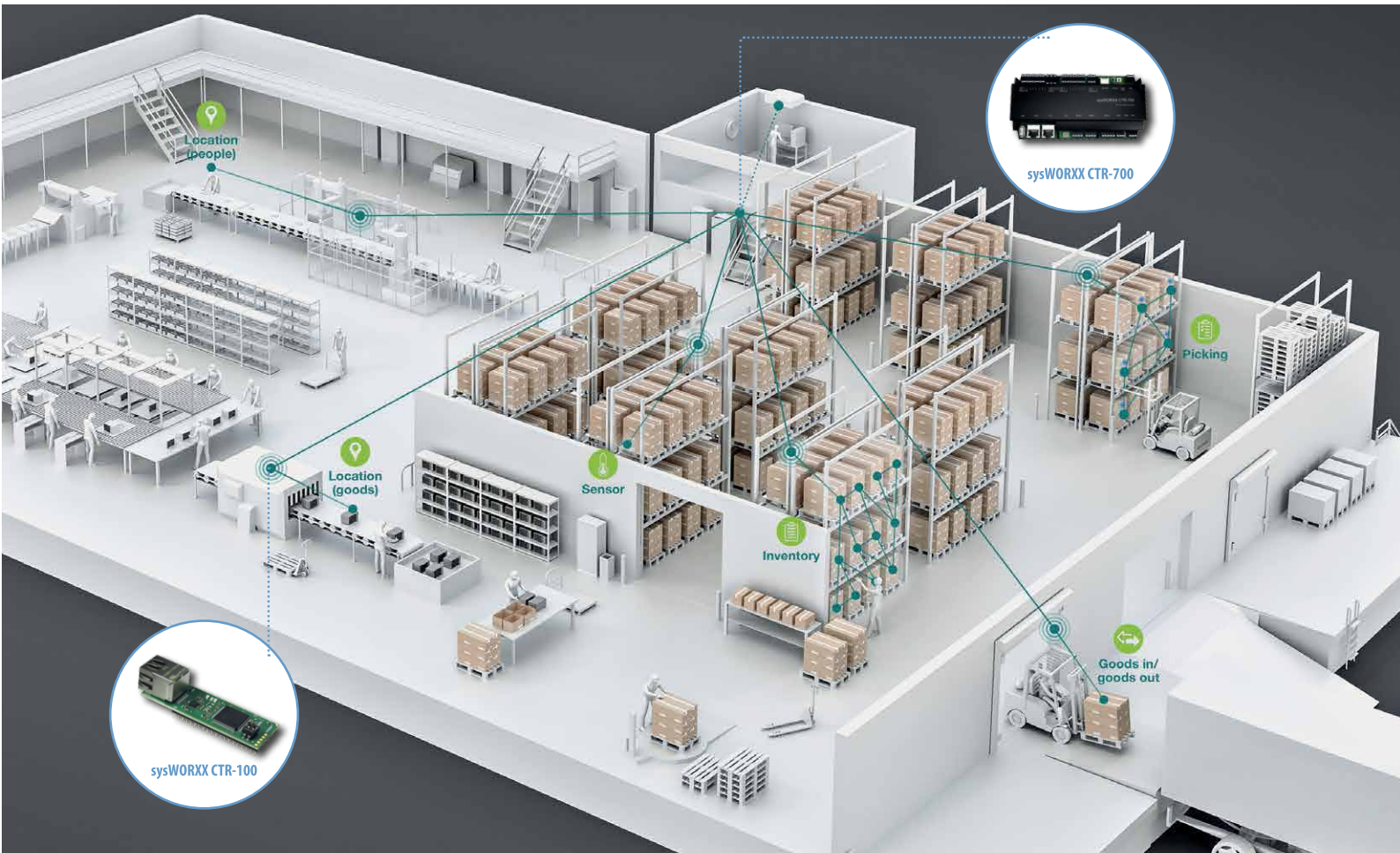

ADVANTAGES

- Compact industrial control with gateway function
- Several bus systems
- SD card slot
- Narrowband functionality from 2018
- Suitable for DIN rail mounting and installation in the control cabinet

ADDED VALUE

- Generation of relevant data on the energy consumption of individual plants and machines:
  - Acquisition
  - Visualisation
  - Optimization
- Energy flow control through data acquisition
- Intelligent energy transfer and distribution: smart grid
- Implementation of smart metering
- Implementation of smart home

YOUR COMPLETE PACKAGE FOR INDUSTRY 4.0

Combination of sysWORXX CTR-100 and CTR-700

sysWORXX CTR-700

sysWORXX CTR-100

Location (people)

Location (goods)

Sensor

Inventory

Picking

Goods in/ goods out

ADVANTAGES

· Both controllers are matched to hardware and software

· Professional and innovative products with over 27 years of experience

ADDED VALUE

· Monitoring, control and evaluation of complex industrial systems

· Energy-saving system due to mesh net functionality

· Easy integration and support with SYS TEC electronic

· Cost and time savings due to installation and commissioning by just one service provider – SYS TEC electronic

COMPARISON
between sysWORXX CTR-100 and -700

	sysWORXX CTR-100	sysWORXX CTR-700
CPU	STM32F767	i.MX7 dual Core
I/Os	Controller	Industrial
Programming	PLC	PLC, Linux, Node-RED
Visualisation	–	Via Node-RED
Location	Near sensor & actuator	Near machine & operator
COMING SOON wireless	BT-Mesh net (Add-on)	Narrowband, Mesh net

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