



Control Technics

Our job is  
making yours  
easier.



# *WELCOME TO CONTROL TECHNICS*

## *THE ULTIMATE SOLUTION FOR AUTOMATION*



INSPIRING INNOVATIONS



# EMBEDDED CONTROL PC-BASED CONTROL



- Inline Control
- Remote Field Controller
- S-MAX

# EMBEDDED & PC BASED CONTROL

## PLC OVERVIEW





# Control Technology

## Overview 100 class



- ILC 130 ETH:  
Mini controller for applications within the Inline-Station
- ILC 150 ETH:  
Mini controller for applications with Inline and Interbus remote bus
- ILC 150 GSM/GPRS  
Mini controller for applications with Inline and IBS remote bus, which has integrated an additional modem for remote services
- ILC 155 ETH:  
Mini controller for applications with Inline and IBS remote bus
- ILC 170 ETH:  
Mini controller for applications with Inline and IBS remote bus with integrated Ethernet-Switch and SD-Flashkarte

# CONTROLS IN THE SWITCH CABINET

## INLINE CONTROL – ILC 200 UNI/IB



**CanOpen**

**200 Class Controller**

**Enables the Inline-Station up to decentral function unit. Useful in case of emergencies.**



**Ethernet /  
Profinet**

**Fieldbus-neutral**

**Performance & features of ILC 200 IB  
and  
ILC 200 UNI are identical**



**DeviceNet**



**Profibus-DP**

**Flexible automation for  
distributed intelligence !**

# Control Technology

## Overview 300 Class



- Ethernet in all devices
- Profinet Device and controller in all devices optional
- FTP server for data or firmware up- and download
- Web server for visualization with Webvisit
- Expandable with Inline and IBS remote bus
- Pluggable CF flash card
- Integrated Real time clock
- Integrated digital in- and outputs...

# Embedded Controller

- Interfaces: Ethernet (10/100), Inline



## ILC 330 ETH / ILC 330 PN

- 0,75 MB RAM for programming
- 1,5 MB RAM for data



## ILC 350 ETH / ILC 350 PN

- 1 MB RAM for programming
- 2 MB RAM for data

- Interfaces: 2 \* Ethernet (10/100), Inline



## ILC 370 ETH 2TX-IB / ILC 370 PN 2TX-IB

- 2 MB RAM for programming
- 4 MB RAM for data



## ILC 390 PN 2TX-IB

- PROFINET IO Controller
- IEC 61131-3 and 5 with PC WORX
- 2 MB programming memory (IEC 61131)
- 4 MB data memory

# Controller in the Control Cabinet

## The Ethernet Controller – RFC 430/450



### 400 Class Controller

- Interfaces: Ethernet (10/100), Inline
- PCP communication with FBs
- “Read/write file to DEI Flash”
- Process data pre-processing
- IEC 61131-3 and 5 with PC WORX
- 0.1 (0.05) ms, typical, for 1K instructions
- 2 (8) MB RAM for programming (IEC 61131)
- 4 (16) MB RAM for data
- Pluggable configuration memory up to 4 MB
- 96 KB NVRAM for remanent data
- Directly integrated inputs/outputs 5 I / 3 O

### RFC 470 PN 3TX Technical Data



- Interfaces:  
3\* Ethernet (10/100), PRG (DSUB9),  
2 \* USB, 1\* IBS-Master (DSUB9), 1\* Profinet Controller, Onboard I/O (FLK strip)
- RUN/STOP/RESET buttons (not key-operated)
- Integrated freely programmable web server
- Diagnostics display (TFT 240x320)
- 8 MB RAM for programs
- 16 MB RAM for data
- 240 KB NVRAM for retentive data
- Pluggable parameterization memory CF Card 256 MB
- Directly integrated input/output 5E / 3A
- Real-time clock (buffered)
- Ready for Profinet IRT
- Temperature range 0°C to +55°C  
(from 45°C with ventilation module)



# PC WORX – One Programming Tool for All PLCs

- You can create the program for any controller class produced by Phoenix Contact and you can change to the next higher class without any problems > Consistency
- PC WORX is designed for applications at every process level
- Distributed plant setup: many options for data exchange: INTERBUS (master/slave), Ethernet (Modbus/TCP, IEC 61131-5) and Profinet



# INSTRUMENTATION

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## Universal Transmitter UT-94



### Features

- Universal field selectable input/output
- Wide choice of input signals
- 1.5KV Isolation between I/P, O/P and supply
- Fully configurable through front keys
- DIN rail mounted
- Built in transmitter supply
- 4-digit LED display
- Digital filter and square root extractor

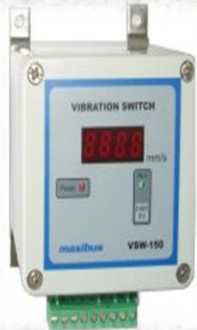
## Dual Channel Vibration Transmitter VT7S12



### Features

- Small Compact size DIN rail mounted
- Digital Display
- Micro controller based dual channel Transmitter
- Transducer/cable health check
- Easy configuration front keys
- Dual Retransmission 4-20 mA output
- Measuring parameter: Acceleration, velocity, displacement field configurable
- Relay for Alarms, Danger

## Vibration Switch VSW-150



### Features

- 3 in 1 Vibration Transmitter - Display Switch
- Bright 3½ - digit LED display
- Vibration range available upto 50mm/s
- Relay & analog output
- Excellent long-term stability
- Easy configuration from front keys
- Set value switch
- Local/ Remote mounting provision for high temperature application

## Vibration Monitoring System - 4 Channel VMS-4S



### Features

- Online Vibration monitoring
- Micro controller based 230V AC power supply
- 4 channels monitoring
- RS-485/ 232 Output for communication (Modbus)
- Buffer Output
- Parameter: Displacement, Velocity, Acceleration

## Vibration Meter VM908



### Features

- Backbone of Predictive maintenance
- Essentials for Good Maintenance
- Necessary Instrument for Tool Box
- Basic vibration measurement
- Measurement of overall vibration level in rotating machines
- Parameter: Displacement, Velocity, Acceleration
- Frequency range: 10 Hz to 5 KHz
- High Frequency: Acceleration (unit:m/s<sup>2</sup>): Equivalent peak
- Battery: 9V 6F22, 25 hours of continuous operation

## VT7S10 Vibration Transmitter VT7S10



### Features

- Loop power vibration transmitter (4-20 mA output)
- Measurement of overall vibration level in rotating machines.
- Dynamic buffered signal output for analysis
- Velocity range 0-12.5, 25, 50mm/s
- Reading type : Peak to Peak and RMS value
- Frequency range : 10 Hz to 1 KHz
- Excitation Voltage 19-30 VDC
- Sensor temperature upto 150 °C

## Humidity Cum Temperature Transmitter HT7S



### Features

- High Accuracy
- Measuring range: 0-100 % RH
- Linearised analog 4-20mA output
- Loop powered supply
- Interchangeable sensor
- Replaceable humidity sensor assembly
- Class-A RTD Pt100 sensor for temperature measurement

## Loop Calibrator TCS 4050M



### Features:

- High accuracy:  $\pm 0.05\%$  of FS
- High resolution:  $1\mu A$
- Display in value and %
- Pushbutton membrane keys
- Bold,  $4\frac{1}{2}$  digit LCD display

### Applications:

- Plant maintenance engineers
- Oil, gas and petrochemical plants and refineries
- Pharmaceutical plants
- Food & Beverage plants
- Power plants
- Service companies



## Universal Calibrator UNICAL 3001M

### Features:

- Multi function calibrator
- Unique 'Auto Cal' & 'Auto Zero' function
- 5-digit, 0.56" Red LED display
- 17 calibration function
- User friendly operation with dedicated keys
- Special calibration function for Cu-53
- Two Custom T/C & resistance simulation
- Rechargeable 'AA' size Ni-MH cells

## Thermocouple Calibrator TCS 4070



### Features:

- User-friendly menu driven operation
- High accuracy & resolution
- Measures and simulates TC/mV
- Digital simulation, no trim pots
- 16x2 Line alphanumeric LCD
- Rechargeable 'AA' size Ni-MH cells
- Automatic CJC
- 3 preset value in SIM mode
- Light weight, handy, portable



# PROCESS AUTOMATION

## Single Display On/Off Controller 5006RN



### Features

- Universal input (TC, RTD, Volts, mA)
- Accuracy 0.1% of F.S.
- Retransmission with accuracy: 0.25% of F.S.
- RS485 Modbus Communication
- Bright Red seven segment
- Status Indication LEDs
- Display brightness control
- Transmitter Power Supply

## Legacy PID Controller 5030



### Features

- Universal inputs (TC, RTD, mA, V)
- Heating, cooling and alarm outputs
- Up to three alarm relays
- Remote set-point for cascade control
- Motorised Valve output
- Configurable control parameters
- Simultaneous PV, SV, MV display
- Isolated retransmission & TPS output
- RS485 Modbus-RTU

## LC5248 Tiny On/Off Controller



### Features

- Universal input (TC, RTD, Volts, mA)
- Accuracy 0.1% of F.S.
- Compact 1/16 DIN package
- Two Outputs (Relay/SSR)
- SMPS/ 24V Power Supply
- Bright Red seven segment
- Status Indication LEDs
- Display brightness control

## Single Loop Controller 5040



### Features

- Universal Input selection
- Universal output including valve positioner output
- Universal Power Supply
- Fast Loop response time of 250mSec
- 4 Relay and 4 Digital outputs for Control, Alarms and events
- 4 Digital Inputs
- 18 Alarm types
- Auto-tune PID, On-Off or Motorised Valve control
- Two analog outputs for control/retransmission
- RS485 port with Modbus RTU protocol

## Legacy On/Off Controller 5002U



### Features

- Universal inputs (TC, RTD, mA, V)
- Accuracy of 0.1% FS
- One-shot Calibration algorithm
- Up to 4 independent programmable relays
- Retransmission output (Isolated)
- RS 485 Serial communication
- Transmitter power supply
- Weather proof flame proof enclosure

## LC5248-AT Auto-Tune PID Controller



### Features

- 1/16 DIN package
- Auto-tune PID
- Universal Input
- Two Outputs (Relay/SSR)
- SMPS/ 24V Power Supply

## LC5296-AT Auto-tune PID Controller



### Features

- 15 Alarm configurations
- RS485 serial communication
- Retransmission output

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## 128-Channel Logger/DAQ Module 8040



### Features

- 16 to 96 channels
- 512KB non-volatile flash memory
- Universal input for each channel-mix
- High noise rejection and isolation
- Scanning speed: 96 Channels/Sec
- Two RS485 ports
- One Centronics printer port
- Operator terminal with 2x16 LCD
- Programming via Operator terminal or PC

## 4-Channel Scanner/DAQ Module 8204



### Features:

- Universal input
- Compact 1/8 DIN Size
- Isolated RS485 port with Modbus-RTU
- Comprehensive Alarm/Trip logic programming
- Full mapping flexibility of relay grouping
- Configuration and calibration from front keys
- Fast channel scanning
- Individual or group alarm facility
- One-shot digital calibration
- 4-20mA Analog Retransmission (Optional)

## 8-Channel Scanner/DAQ Module 8208



### Features

- Universal Input
- Universal Power Supply
- Fast channel scanning
- Configuration levels with password
- Configuration and calibration from front keys
- Isolated RS485 port with Modbus-RTU
- Full mapping flexibility of four relays and groups
- Comprehensive Alarm/Trip logic programming
- User-friendly design



## 24-Channel Scanner/DAQ Module 85XX



### Features

- 8/16/24 channel configurations
- High noise rejection and isolation
- Universal input for each channel-mix
- Comprehensive alarm/trip logics
- Individual or group alarms
- RS485 Serial communication
- Live, remote data viewing
- Direct serial printer interface
- 48 open collector outputs
- Retransmission output (Isolated)
- Weather proof flame proof enclosure

## 9000U Signal Isolator

### Single/Dual and Three/Four output Signal Isolator



### Features

- Up to 4 different outputs channels
- 0.1% Accuracy
- 1.5KV Isolation between I/P, O/P and supply
- All standard current/voltage input/output options
- Non-standard input/output options also available
- 90-265VAC and 24VDC Power supply (Options)
- Compact DIN rail enclosure
- Built in transmitter supply

## Bar Graph Indicator 40005



### Features

- 101 LED Bar with 1% Resolution
- Universal input (TC, RTD, mV, mA, V)
- 4-digit seven-segment LED
- Alarm Status LEDs
- Two alarm outputs
- RS485 serial communication
- Retransmission output
- Transmitter power supply
- Customizable units-of-measure window
- Square root extractor

## 409 Smart Indicator

### Features

- Field selectable input (TC, RTD, mV, mA, V)
- Alarm and communication status LED
- Programmable alarm logics
- Transmitter Supply
- RS485 Serial Communication
- Retransmission O/p (Isolated)
- Compact 1/8 DIN Size



## Compact Indicator LI4248

### Features:

- 9 input options (TC, RTD, mA, V)
- 4-digit 0.56" LED display
- SMPS or DC power supply option
- Two programmable relays
- Transmitter Supply (Optional)
- Two Alarm Output (Optional)



## 408-2IN Large Display Indicator

### Features

- 8 input options (TC, RTD, mA, V)
- Large 4-digit LED display (1.8")
- High accuracy of 0.25%
- Built-in Transmitter Supply
- Configuration by front keys
- Weather-proof/flame-proof enclosure (Optional)



## Flow Indicator Totaliser 6 digit 1006

### Features

- 4-Digit Flow Rate display
- 6-Digit Total Value display
- Programmable conversion factor
- Two Flow and Batch Control Relays
- Floating decimal point and Roll-over record
- Selectable square root extractor
- High/Low, Pre warn and end of process set points
- Transmitter power supply
- Retransmission output
- RS485 serial communication



## Compact Indicator LI4248

### Features:

- 9 input options (TC, RTD, mA, V)
- 4-digit 0.56" LED display
- SMPS or DC power supply option
- Two programmable relays
- Transmitter Supply (Optional)
- Two Alarm Output (Optional)



## Flow Indicator Totaliser 8 Digit 1008S

### Features

- 5-Digit Flow Rate display
- 8-Digit Total Value display
- Four Relays for Flow and Batch Control
- Four Digital Input



## Large Display Indicator 405-4IN

### Features

- 4" Large LED Display
- 18 selectable input types (TC, RTD, mV, mA, V)
- Transmitter Power Supply
- RS485 serial communication
- Programmable retransmission output
- Two programmable alarm outputs
- Available as Panel/ Wall mounting



## Flow Indicator Totaliser 8 digit with PT compensation option 1008V

### Features

- 4-Digit Flow Rate display
- 8-Digit Total Value display
- Four Flow and Batch Control Relays



# POWER / ENERGY MANAGEMENT

## Energy Meter 2110

### Features

- Accuracy class 1.0 as per IS13779/ IEC 61036.
- True RMS sensing on both channels.
- Self/Aux powered
- 2 X 16 back-lit LCD display
- 14 Parameters of 1Ø AC Line using 14 display screens
- AUTO-SCALING from Kilo to Mega to Giga watt
- Programmable pulse input & output
- Calibration using front keys/ PC
- Isolated RS 485 (MODBUS-RTU protocol)



## Energy Meter 2130

### Features

- Accuracy class 1.0 as per IS13779/ IEC 61036 (class 0.5 option)
- True four quadrant measurement
- Self/Aux powered
- Four row back-lit LCD display
- 51 Parameters of 3Ø AC Line using 19 display screens
- AUTO-SCALING from Kilo to Mega to Giga watt
- Programmable pulse input & output
- Calibration using front keys/ PC
- Isolated RS 485 (MODBUS-RTU protocol)



## Energy Meter 2160

### Features:

- 3-Ph Meter
- Accuracy class 0.5 as per 14697/IEC 60687
- 50 Electrical parameter display Field programmable CT & PT primary values
- True RMS, microcontroller based
- Aux powered
- Isolated RS485 (Modbus-RTU protocol)
- Pulse output for energy
- Auto Scaling from kilo to Mega to Giga watt
- Total Harmonic Distortion in Voltage & Current (Optional)



## VAF Indicator VAF2200

### Features:

- View 3 Parameters (Volt/Amp/Frequency) in single meter
- Ultra bright 3+3+3 digit LED display with auto scaling capability
- Field Selectable three phase configuration
- CT Programmable: 1 – 4000/1 or 5Amp
- PT Programmable: 110V – 33KV/110 or 415Volt
- True RMS, Micro-controller based measurement
- Accuracy Class 1.0
- Min / Max threshold setting of Volt/Amp/Frequency for relay operation
- Peak value storage of Volt, Amp, Frequency
- Compact 96X96 mm DIN case flush panel mounting

### Applications:

- Test Benches
- Renewable Energy
- Lab Equipment
- Industrial Control Panels
- Control & Relay Panels (CRP)
- Original Equipment Manufacturer (OEMs)



### Applications

- Control & Relay Panels
- Motor Control Center Panels
- Power Control Center Panels
- Process Control
- DG Set panels
- Original Equipment Manufacturers (OEMs)
- HVAC & Building Management System
- Energy Management System (EMS)
- HV & LV Switchgear Panels

## AC Line Transducers



### **Features:**

- High accuracy class 0.25%
- Confirms to IEC 60688
- Power transducers for all requirements
- Excellent long term stability
- Low burden
- Transient protected
- Both 1-ph & 3-ph versions available
- Good isolation & impulse resistance
- Minimum ripple at the output
- Fast response
- Full power factor range operation
- ABS DIN rail mounting



## Multi Function Transducer



### **Features:**

- Fully Programmable
- PC based Configuration software
- 1-Ph, 3Ph3W, 3Ph4W configurations
- Measures V, I, Hz, PF, KW, KVA, KWh and KVARh
- Four Analog Outputs
- Two Digital Outputs
- True RMS measurement
- <300msec Response time
- Sampling frequency better than 3.9 KHz
- RS485 Modbus Communication
- 20x4 Backlit LC Display (Optional)

### **Applications:**

- Interface with SCADA / RTU
- Remote monitoring
- Energy and Demand monitoring
- Process monitoring & control
- Electric utility-Generation, Transmission and Distribution
- Power Equipments OEMs
- HT/LT Panel



## GPS Master Clock MC-1

### **Features:**

- 2U Rack based Model
- 12 satellite parallel tracking
- 2x16 Character LCD with Backlit
- Supports RS232, IRIG-B (Modulated & TTL), PPS & PPM output
- Synchronization of IEC 61850 compliant devices
- using SNTP/NTP protocol on LAN
- Support PTP Complying IEEE 1588 Standard
- Five status LEDs on front panel
- No data loss even if GPS is not locked
- ITU-T Standard compliant for accuracy
- Modular structure support multiple output

### **Applications:**

- Synchrophasor measurement
- ABT metering
- EMS system
- Fault locator
- DCS/PLC

## Time Distribution Rack TDR-4

### **Features:**

- Accept signals like 1PPS, IRIG-B TTL, IRIG-B Mod, RS232 from GPS
- Six different types of output cards in a single rack
- Total 4 Nos of output per card
- Rack capacity: 9-Card Slots
- Total 36 outputs available from single rack
- Any card can be inserted in any slot
- High intensity status LEDs
- Hot Swappable
- Facility to interface redundant GPS

## Time Display Unit TDU-64

### **Features:**

- 6 digit time display unit
- 100mm digit height
- Rack/wall/panel mounted
- Display in minute, hour & Sec.
- NGTS/NMEA/IRIG-B input interface
- Large display for easy viewing from 40 mete

