



**ADVANCED**  
**ACTUATORS LIMITED**  
Unit 4, Ryefield Way, UK

**WWW.ADVANCED-ACTUATORS.COM**

**HYDRAULIC POWER UNIT**

**WITH**

**I**NTelligent **S**ystem **C**ontrol



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## HMI SoftControl



## What is Intelligent System Control?

Simply a combination of automation products to deliver a more reliable control package.

- The HMI soft control from Beijer Electronics
- Dedicated intelligent HPU Software from AAL
- Packaged Hydraulic Power Unit with real time monitoring.

**Developed to deliver a full turn key solution for advanced control.**

## Why integrate HPU, PLC and HMI?

- ▶ Microprocessors can manage the operator interface tasks and the control logic from one single device
- ▶ Combined with standard modern remote I/Os, iX HMI provides an elegant, scalable and cost-effective all-in-one solution
- ▶ The EtherCAT technology is designed for speed - fully Ethernet-compatible

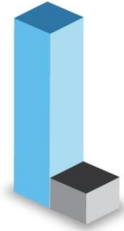


- ▶ Unifying HMI and soft control means:
  - Reduced cost by eliminating components and wiring
  - Compact design reducing panel sizes.
  - Improved operation by centralizing remote access and administration

## Main Differences between I.S.C and PLC alternative

### ▶ Application memory

- TxB Soft Control
  - Unlimited
- PLC
  - Depends on CPU types/sizes



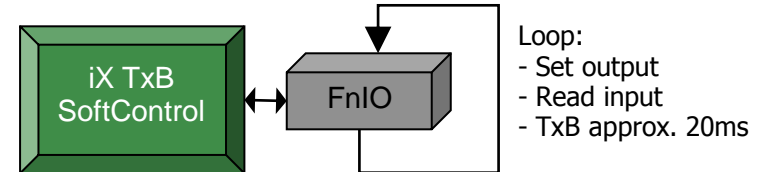
### ▶ Execution of compiled code

- TxB Soft Control
  - Out performs almost any PLC today
- PLC
  - Compact PLCs, fast handling of logic



### ▶ I/O communication

- TxB Soft Control
  - Real-time performance with EtherCAT
- PLC
  - Fast as CPU and I/O is one unit



## Revolutionary Interface

Beijer Innovative HMI at the competitive edge of your fingertips

- ▶ A smart and intuitive user interface is a gateway to improved system operation, usability and end-user satisfaction
- ▶ Attractive iX HMI with top-class graphics, full colour, 800 x 480 or 1280 x 800.
- ▶ The latest screen technology; LED backlight for clear screens with wide viewing angles



## Live HPU Status & Maintenance Information

Multiple Actuator Control with full HPU diagnostic

- ▶ All system variables accessed via HMI
  - ▶ No programming by user needed.
  - ▶ Fully adjustable on site.
  - ▶ Multi User level access as standard
- ▶ Local HPU & Actuator Control via HMI
- ▶ Full variable motor control for precise pressure control.



## Technical Information I.S.C

Performance levels to suit most applications

- ▶ Display sizes 7, 12 and 15 inches
- ▶ High performance CPU - Intel Atom 1.1 GHz
- ▶ Communication with I/Os via high-speed EtherCAT fieldbus or Modbus
- ▶ 1 GB application memory
  - ▶ Expandable
- ▶ 32 Kbyte non-volatile memory
  - ▶ For persistent data
- ▶ Extensive range of I/O nodes
  - ▶ Digital or Analogue



**EtherCAT** 



RTU/TCP



**... simply add standard I/Os or other equipment**







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## High Speed Communication via EtherCAT



- ▶ EtherCAT is an industrial Ethernet and utilizes standard frames and the physical layer as defined in the Ethernet Standard IEEE 802.3
- ▶ The EtherCAT Master is the only node within a network segment allowed to actively send an EtherCAT packet or frame
  - This concept prevents delays and guarantees real-time capabilities
- ▶ Nearly unlimited number of nodes for complex HPU systems and monitoring.

## Summary



EtherCAT<sup>®</sup>



▶ **High-performance HMI hardware combined with innovative hydraulic & system control software**

- Multi-level menu systems for faster execution of actions and for saving screen space
- Right information at hand where the operator needs it
- Full integration with hydraulic control all in one system.

▶ **Designed using leading IEC 61131-3 development tools**

- IEC 61131-3 development environment
- Easy-to-use field bus configuration and integration



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