HYDRAULIC POWER UNIT

WITH

INTELLIGENT SYSTEM CONTROL
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

**Diagram:**
- iX TxB SoftControl
- FnIO
- Loop:
  - Set output
  - Read input
  - TxB approx. 20ms
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

... simply add standard I/Os or other equipment
Example System Performance Information

Designed with full proportional control in mind for accurate control

- **AAL HPU with I.S.C**
  - 31 PID loops with REAL logic
    - Generates 135 kB of compiled code
      - Insignificant impact on memory capacity

  Execution time = 0.2 ms

- **AAL HPU with I.S.C**
  - 800 IL Networks of BOOL logic
    - Generates 209 kB of compiled code
      - Insignificant impact on memory capacity

  Execution time = 0.19 ms
**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

- **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
# Technical Support

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# Sales or Spares

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