

# XtraDrive

Next generation intelligent servo driver  
with integrated positioner



Also introducing!

**XtraDrive-DP**  
with embedded PROFIBUS



# Small tracking error **XtraDrive**

State of the art high precision AC servo driver, with embedded programming capabilities.

**XtraDrive** is based on a unique propriety control technology offering solutions for the most demanding applications.

Multiple networking connectivity options and automated tuning provide easy integration into your machine.

- Supports rotary and linear motors
- Patented non-linear technique for tight control
- Very low tracking error with no overshoot and zero settling time
- Integrated positioner using various programmable motion profile modes
- Automatic tuning of servo parameters for optimal settling time
- Oscillation Canceling Algorithm (OCA)
- 1.5 Axis (Master-Slave with automatic offset correction)
- Network connectivity

## YET Technologies implemented in **XtraDrive**

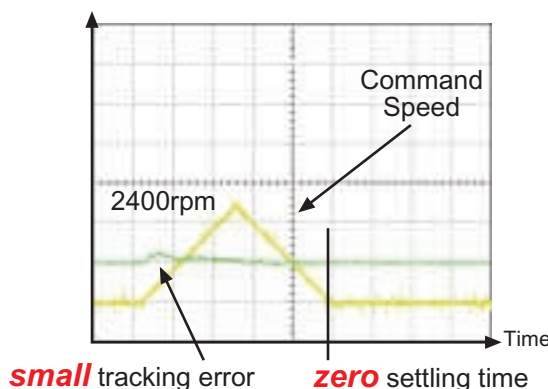
### NCT

Non-linear control, adaptive feed-forward algorithm and digital processing of encoder pulses, provide both small tracking error and zero settling time

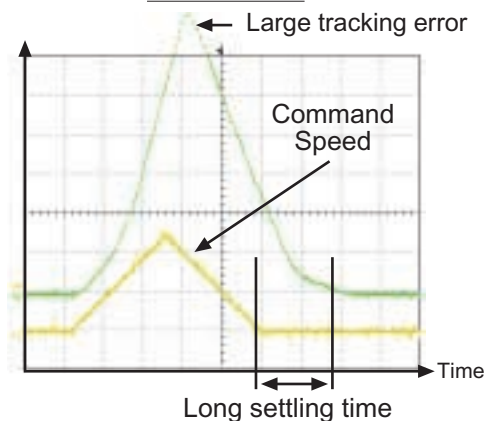
- *Increased throughput*
- *Reduced influence of external perturbations*

### Small tracking error, zero settling time

XtraDrive Product



Other Driver



### Auto-Tuning

Embedded software for automated optimal tuning

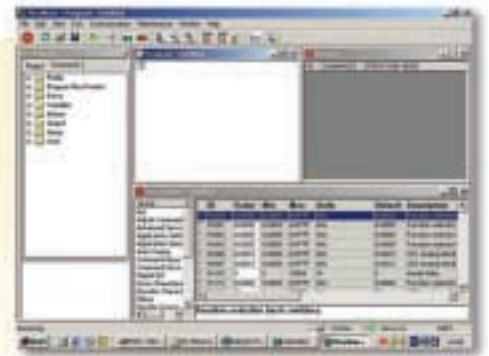
- *Optimal parameters setting, not depending on operators skills*
- *Shorter setup time*

## XtraWare

XtraWare is an advanced software tool for the setup, optimal tuning and user programming of the XtraDrive AC servo driver.

With the user-friendly XtraWare you are able to perform a variety of functions through your PC:

- Setup Wizard
- Write and download a user-program
- Immediate execution of control commands
- Tuning
- Driver Setup
- Parameter editing
- Alarm display
- Jog operation
- Monitor
- Help



The XtraWare runs under Microsoft WINDOWS®

### Power:

1-phase 200-230 VAC: 30W-800W  
3-phase 400 VAC: 0.5kW-3kW

### Compatible with industry standards:

- Encoder
  - A Quad B encoders
  - Omron - Yaskawa serial
- Command Input
  - Analog
  - Pulse train
  - Serial port-RS 232/422
  - Daisy chain up to 15 drives
  - Network by option board

### Integrated positioner with embedded I/O programming



### Network connectivity

- Profibus (Embedded in the drive)
- DeviceNet
- Mechatrolink

### Auto-Tuning

### Intelligent control functions:

- Point to point
- Movement synchronization among several axes
- Sequential command buffer
- User program
- Home, Limits, I/O
- I/O sequential programming
- Master/Slave

## Product positioning: high end and general purpose for high throughput and superior accuracy

### Typical applications:

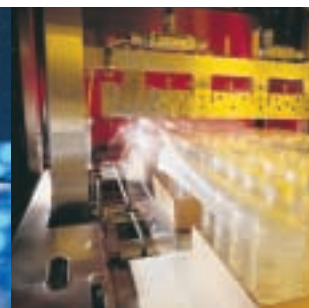
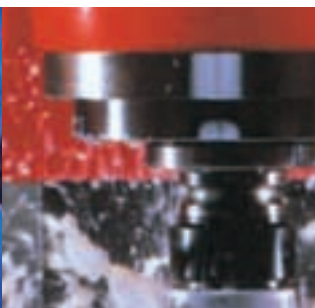
- Semiconductor: wafer and chip handling machines, wafer inspection, wire bonding, chip testing
- Packaging
- Precise laser cutting
- Machine tools
- Display inspection machines
- Handling and pick & place
- General purpose





## XtraDrive Specifications

Servo motor capacity (kW)	0.03 0.05 0.1 0.2 0.4 0.8	0.5 1.0 1.5 2.0 3.0
Connected voltage	1-Phase 200-230 VAC	3-Phase 400 VAC
Command input	Analog, pulse train, serial port-RS232/422, external encoder	
Integrated positioner	Various programmable motion profile modes	
Network connectivity	Profibus (Embedded in drive available), DeviceNet, Mechatrolink (via option Board)	
Encoder I/F	AB(Z) encoder, serial encoder: 13,16 or 17 -bit (incremental/absolute value)	
Protection functions	Over current, over voltage, low voltage, over load, regeneration error, main circuit voltage error, heat sink overheat, no power supply, over flow, over speed, encoder error over run	
Digital input	7 (depending on module)	
Digital output	7 (depending on module)	
Analog input	2 (16 bit)	
Analog output	2 (16 bit)	
Speed control range	1 to 6000 rpm	
Speed regulation	0% (at rated speed); rated voltage $\pm$ 10%	
Speed-load regulation	0-100% load: 0.01% max. (at rated speed)	
Ambient/storage temperature	0-55° C/ -20 to 85° C	
Ambient/storage humidity	90% or less (with no condensation)	



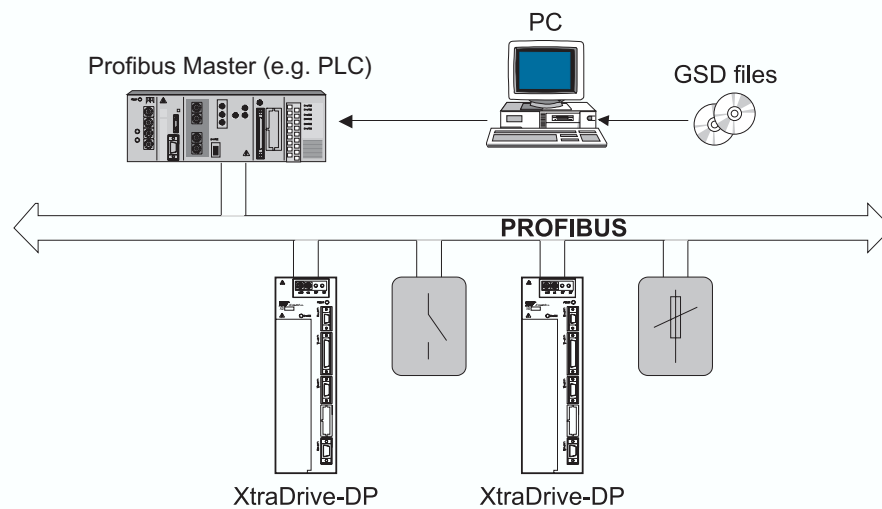
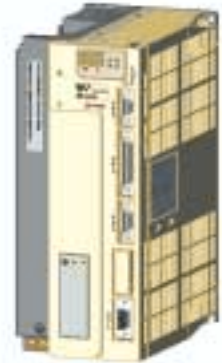
# XtraDrive-DP

with embedded PROFIBUS



## XtraDrive-DP provides all the benefits of XtraDrive family while running on PROFIBUS network.

- High performance - Using XtraDrive state-of-the-art NCT control technology
- Ease of use - Same parameter set, system variables, motion commands and programming functions as XtraDrive family.
- Using PROFIBUS' standard diagnostic features for continuous diagnostics, driver status and motion commands information.
- Parallel use of XtraWare when connected to PROFIBUS network.



## XtraDrive-DP PROFIBUS Interface Specifications

Maximum Expansion	126 stations max.
Communication	RS-485
Auto-configuring	GSD file
PROFIBUS Profile	DP
PROFIBUS Port	9-pin D-shell
Node Address	0-125 decimal Set by rotary switches (2 digit hex number)
Segment distance	100 meters (327 feet) to 1200 meters (3270 feet)
Baud Rate	Selectable from 9.6 kbps to 12 Mbps
LED Indicators:	BF - Bus failure SF - System failure

# XtraDrive-DP Specifications

Servo motor capacity (kW)	0.1    0.2    0.4    0.8	0.5   1.0   1.5   2.0   3.0
Voltage	1-Phase 200 VAC	3-Phase 400 VAC
Command input	PROFIBUS, Analog, pulse train	
Integrated positioner	Various programmable motion profile modes	
Encoder I/F	A/B (Z) encoder, serial encoder: 13, 16 or 17 -bit (incremental/absolute value)	
Protection functions	Overcurrent, overvoltage, undervoltage, overload, regeneration error, main circuit voltage error, heat sink overheat, overspeed, encoder error overrun, parameter error	
Digital inputs	7	
Digital outputs	7	
Analog input	2 at +/- 10 VDC at rated torque	
Analog output	2 at +/- 10 VDC at rated torque	
Speed control range	1 to 6500 rpm	
Speed regulation	0% (at rated speed); rated voltage +/- 10%	
Speed-load regulation	0-100% load: 0.01% max. (at rated speed)	
External torque limitation	Input voltage +/- 12 V max.	
Ambient/storage temperature	0-55° C/ -20 to 85° C	
Ambient/storage humidity	90% or less (with no condensation)	

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