

# Xtrapuls Gem AC Servo-controllers



## Functions

- Universal servo-drives with integrated controller
- Configurable standard modes of operation
- Programmable real-time motion applications
- Resolver and encoder feedback

## Power stage

- IGBT power stage
- Integrated or separate power supply
- Integrated EMC-filter and dynamic braking
- Nominal current 2.5 A / 230 V ... 35 A / 480 V

## Interfaces

- RS 232/422
- Various fieldbusses
- Digital and analog I/Os

## Tools

- Project manager
- Setup assistant
- Multi-axis programming and diagnostic
- Auto-tuning

# XtrapulsGem, AC Servo-controllers

XtrapulsGem is a family of very flexible AC servo-controllers with outstanding real-time application capabilities. The basic versions already offer the required interfaces and functions to cover a wide range of single- and multi-axis applications.

## Electrical specification

Drive type	GD1-230					GD1-400				GD1-400				Power supply type	GDPS-400 <sup>4</sup>	
	/05	/08	/11	/17	/30	/05	/08	/14	/20	/30	/45	/60	/90		/16	/32
Peak current [Arms]	5	8	11	17	30	5	8	14	20	30	45	60	90	Rated power	16 kW	32 kW
Cont. current [Arms]	2.5	4	5.5	8.5	15 <sup>3</sup>	2.5	4	7	10	15	20	30	35	Input voltage	3x230 VAC/3x480 VAC	
Input voltage	1x230 VAC <sup>1</sup> /320 VDC <sup>2</sup>					3x480 VAC <sup>1</sup> /680 VDC <sup>2</sup>				680 VDC <sup>2</sup>						

<sup>1</sup>Integrated power supply <sup>2</sup>External power supply <sup>3</sup>With integrated power supply 10 Arms

<sup>4</sup>Integrated mains filter, DC bus output for parallel connection of several drives, external braking resistor

## Control loops

- Digital drive for AC synchronous motors
- Current loop 62.5  $\mu$ s
- Speed and position loop  $\leq 500 \mu$ s
- Closed loop control of position, speed or torque
- Cogging torque compensation
- Max. speed up to 25'000 rpm

## Communication interfaces

- RS-232 up to 19.2 kbit/s baud rate
- CANopen up to 1 Mbit/s baud rate
- DIP switches for node address
- Extension slots for optional fieldbus interfaces

## Feedbacks

- 16 bit resolver interface
- Incremental encoder interface
- Hall sensor interface
- Interface for SinCos encoders with absolute commutation track, Endat<sup>®</sup> or Hiperface<sup>®</sup>

## Safety features

- Safe torque off (option)

## Backup

- SD card for backup

## I/O interfaces

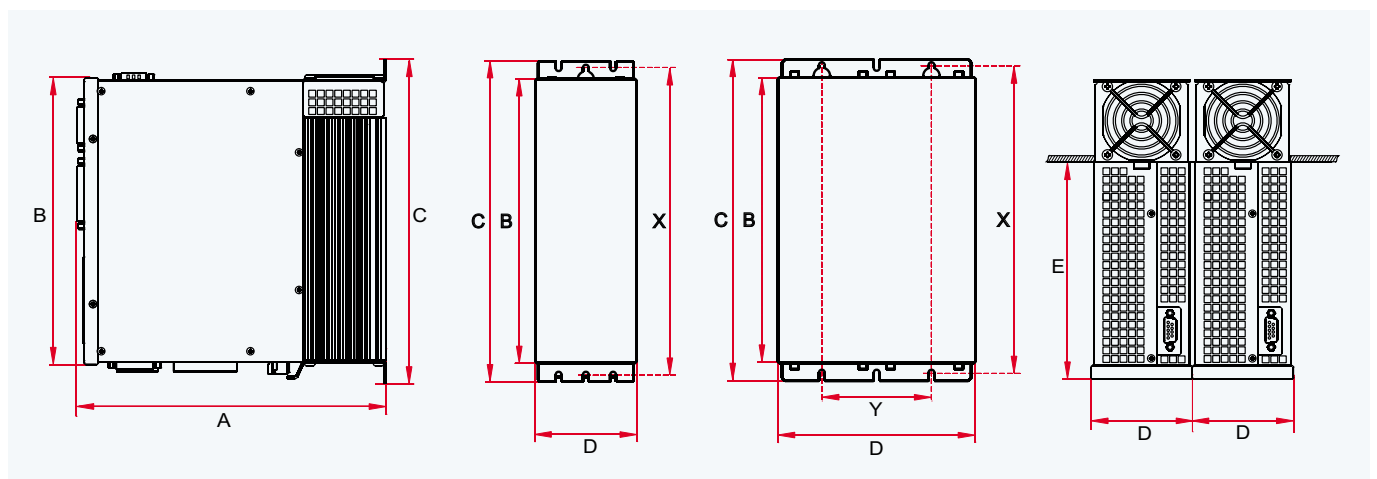
- Digital I/Os with dedicated functions (Enable, limit switches, home sensor, etc.)
- User configurable digital I/Os
- All digital I/Os opto-isolated
- Analog inputs  $\pm 10$  V / 12 bit resolution
- Analog outputs  $\pm 5$  V / 8 bit resolution
- "Amplifier OK" relay output
- Motor brake control output 24 V / 1.5 A
- Extension slots for optional I/O interfaces

## Standards

- CE
- UL listed



## Mechanical dimensions



Dimensions [mm]	A	B	C	D	E	X	Y
GD1-230/05 to 08	175	208.5	235	74	-	224.5	-
GD1-230/11 to 30	225	208.5	235	74	160.5	224.5	-
GD1-400/05 to 30	225	208.5	235	74	160.5	224.5	-
GD1-400/45 to 90	225	208.5	235	144	160.5	224.5	80
GDPS-400/16	175	208.5	235	74	160.5	224.5	-
GDPS-400/32	225	208.5	235	74	160.5	224.5	-

With the flexible functional concept that allows choice of its behaviour, one single drive type can meet extremely different requirements, from the simple execution of a standard motion command to the stand-alone control of an entire machine module.

## Functional concept

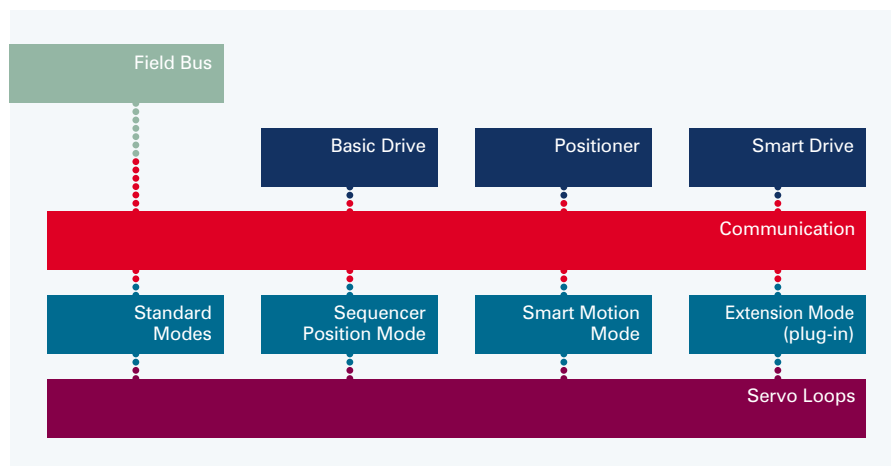
Choice of drive behaviour:

- Basic Drive (ex. CANopen DSP-402)
- Positioner with sequences
- Smart drive with user application program

Function libraries:

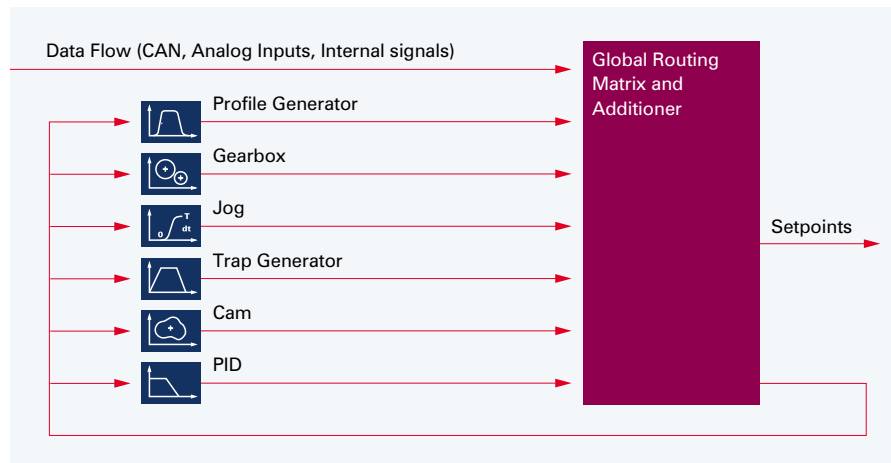
- Standard modes (DSP-402)
  - Sequencer position mode
  - Smart motion mode
- Access to library objects with object dictionary, communication layer with open access to object dictionary

Functional concept



## Built-in motion control functions

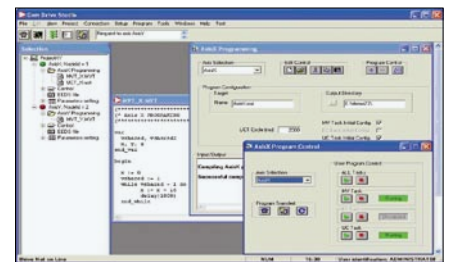
- Homing
- Jog function
- Camshaft
- Gearbox
- PID
- Profile generators
- Switching CAM
- Flexible combination and connection of function blocks, commands and setpoints
- Configuration via object dictionary



Smart motion mode

## Real-time application

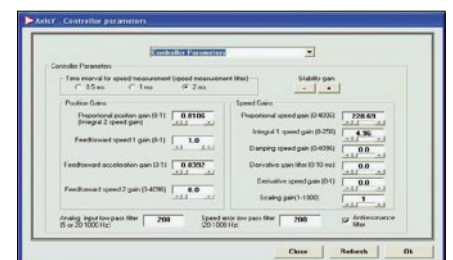
- Fast cyclic task
- User defined cyclic task
- Motion task
- Programming according to IEC61131



Programming window

## Tools

- Project manager
- Digital oscilloscope
- Code editor and compiler
- Sequence editor
- Motor libraries
- Multiaxis monitoring
- Setup wizards for motor and drive
- Auto-tuning function for control loops
- Auto-phasing function for motor adjustment



Controller parameters window

# Addresses

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## The Infranor Group

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Infranor creates added value for its customers by providing tailor-made motion solutions.

Based on strong working relationships, Infranor offers extensive market know-how, comprehensive engineering skills and a wide range of high-quality products leading to productivity gains and therefore to comparative advantages for its customers in their respective markets.

## The Infranor Brand

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The Infranor Brand is a synonym for:

- Excellence
- Cooperation
- Added value