aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

638 Series

Servo Drive from 1 to 15 A

Parker

ENGINEERING YOUR SUCCESS.

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Servo Drive - 638 Series

Parker Hannifin

- the global leader in motion and control technologies

A world class player on a local stage

Global Product Design

Parker Hannifin has more than 40 years experience in the design and manufacturing of drives, controls, motors and mechanical products. With dedicated global product development teams, Parker draws on industry-leading technological leadership and experience from engineering teams in Europe, North America and Asia.

Local Application Expertise

Parker has local engineering resources committed to adapting and applying our current products and technologies to best fit our customers' needs.

Manufacturing to Meet Our Customers' Needs

Parker is committed to meeting the increasing service demands that our customers require to succeed in the global industrial market. Parker's manufacturing teams seek continuous improvement through the implementation of lean manufacturing methods throughout the process. We measure ourselves on meeting our customers' expectations of quality and delivery, not just our own. In order to meet these expectations, Parker operates and continues to invest in our manufacturing facilities in Europe, North America and Asia.

Worldwide Manufacturing Locations

Europe
Littlehampton, United Kingdom
Dijon, France
Offenburg, Germany
Milan, Italy

Asia
Shanghai, China
Chennai, India

North America
Rohnert Park, California
Irwin, Pennsylvania
Wadsworth, Ohio
Charlotte, North Carolina
New Ulm, Minnesota

Local Manufacturing and Support in Europe

Parker provides sales assistance and local technical support through a network of dedicated sales teams and authorized technical distributors throughout Europe.
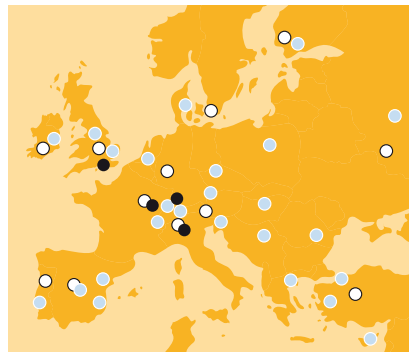
For contact information, please refer to the Sales Offices on the back cover of this document or visit www.parker.com

Offenburg, Germany

Milan, Italy

Littlehampton, UK

● Manufacturing
○ Parker Sales Offices
● Distributors

Dijon, France

Servo Drive - 638 Series

Overview

Description

638 series servo drives are suitable for all servo applications, from simple speed or current control to most complex positioning applications.

The processor of 638 series servo drives gives a rapid response time to the control circuits of 105 µs. Numerous expansion slots allow 638 series servo drives to reach a high degree of versatility, opening access to a wide variety of fieldbus communication and feedback sensors options.

Features

- Integrated motion controller
- 230 or 400 VAC direct power supply
- STO: Safety torque off in accordance with EN13489-1 Category 3, Performance Level d and EN1037 as standard
- Ultra-fast control loops (105 µs)
- Embedded PLC functions
- Programmable electronic cam
- 3 configurable trajectory generators
- Multi-axis synchronization through process bus
- Numerous fieldbuses options
- Hiperface and SSI encoder inputs options
- Optional flash memory chip for data storage
- Simple commissioning and programming Software

Technical Characteristics - Overview

| 638 Servo drives	
Supply voltage	1*230 VAC (±10 %), 50 - 60 Hz 3*230 VAC (±10 %), 50 - 60 Hz 3*400/480 VAC (±10 %), 50 - 60 Hz
Permanent current [Arms]	1...15
Peak current [A]	2...30
Overload	200 % during 5 s
Operating temperature	0...40 °C
Humidity	< 85 % relative humidity non-condensing
Altitude	1000 m (1 % derating per 100 m up to 4000 m)
Product enclosure rating	IP20

Technical Characteristics

Technical Data

Model 638....F0STO	Unit	A013	A023	A043	A063	B036 [1]	B056 [1]	B086 [1]	B106 [1]	B156 [1]
Supply and currents										
Supply voltage	[V]	1*230 VAC (±10 %), 50 - 60 Hz 3*230 VAC (±10 %), 50 - 60 Hz				3*400 VAC (±10 %), 50 - 60 Hz				
Permanent current	[Aeff]	1	2	4	6	2.5	5	7.5	10	15
Peak current (200 % for 5 s)	[A]	2	4	8	12	5	10	15	20	30
Frame size		A				B				
Control voltage	[V]	24 VDC								
Operating temperature		0...40 °C (2 % derating per °C between up to 50 °C)								
Humidity		< 85 % relative humidity non-condensing								
Altitude		1000 m (1 % derating per 100 m up to 4000 m)								
Product enclosure rating		IP20								

[1] Also available with 230 and 480 VAC power supply

Input / outputs (X10 Plug)

- 8 Digital inputs (24 V) including 2 interrupts
- 5 Digital outputs (24 V) including 3 opto-coupled (configurable) and 2 relays (1 configurable, 1 for drive ready)
- 2 Analog inputs (0 - 10 V, ±10 V)
- 2 Analog outputs (±10 V)

Configurable feedback interface (X30 plug)

- Resolver input (standard)
- Hiperface encoder input (option)
- Sine / Cosine encoder input (option)

Optional Flash memory chip (X300 - module)

- Storage of complete drive data (firmware, function code, parameters, applications program)

Configurable multi-function interface (X40 plug)

- Incremental encoder input
- Incremental encoder output
- Stepper-motor input
- Absolute single or multi-turn SSI encoder input

Communication

- Serial communication (COM1 Interface) RS232
- Application communication (COM2 Interface)
  - RS232, RS422, RS485
  - Profibus-DP
  - CANopen DS402
- Inter axis communication (COM3 Interface) Parker System bus / RS485

I/O extension

- 5 Digital Inputs / 2 Digital Outputs (COM2 Interface)
- 14 Digital Inputs / 10 Digital Outputs (X200 Plug)
- 4 Digital Inputs / 4 Digital Outputs (X120 Plug)

Safety

- STO: Safety torque off in accordance with EN13489-1 Category 3, Performance Level d and EN1037 as standard (connector STO X11)
- Brake / PTC output (BR/TH X62 Plug)

Standards & Conformance

- CE marked:
  - EN61800-3 (EMC compliance) with integral filter
  - EN50178 (Safety, low voltage)
- UL certification

Dimensions
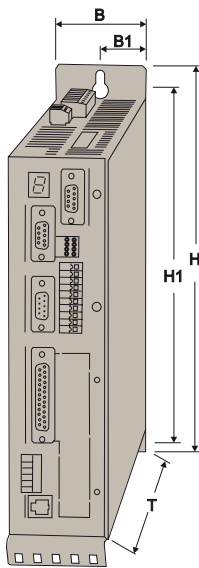
| Model	Nominal current [A]	B [mm]	H [mm]	T [mm]	B1 [mm]	H1 [mm]	Weight [kg]
638A	1 ... 6	56	250		28	211	1.6
638B	2.5 ... 5	66	318.6	232	44	281.25	2.7
	7.5 ... 15	86			64		4.4

Accessories

EASYRIDER Software

EASYRIDER is a graphical software for the 630 series providing a single user interface for accessing all drive parameters, programming motion and calibrating the drive. This unique assistant offers an autopilot mode helping user in all phases of application set-up: from the choice of the motor in the motor library to the drive auto adjustment. All set-up steps are extremely simplified.
EASYRIDER gives also the possibility to develop advanced motion in an intuitive way using its BIAS language.

Features

- Intuitive and easy use
- Set-up assistant
- Integrated motor library
- Oscilloscope function
- Drive and fieldbus diagnostic
- Drive advanced programming
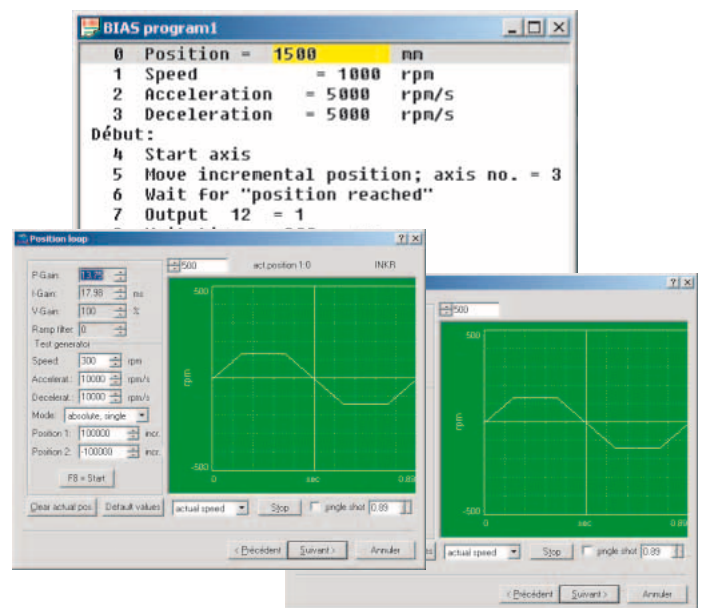
Order Code

	1	2	3	4	5	6	7	8	9	10	11	12
Order example	638	x	xx	3	F	0	STO	000	EAE	RD2	RM1	X7x

1	Series	
	638	638 series

2	Frame size	
	A	Size A
	B	Frame B

3	Nominal current		
	01	1 A	
	02	2 A	
	04	4 A	Size A
	06	6 A	
	03	2.5 A	
	05	5 A	
	08	7.5 A	Frame B
	10	10 A	
	15	15 A	

4	Intermediate circuit voltage	
	3	325 VDC / 230 VAC
	6	565 VDC / 400 VAC
	7	678 VDC / 480 VAC

5	Filter	
	F	With integrated filter (Standard)
	A	Less leakage current (AC side Y capacitors deactivated, JP600 open)

6	EMC clip	
	0	Without EMC - clip (Standard)

7	Safety technology	
	STO	Safe Torque Off (Standard)

8	Additional option module RP xxx via COM2		
			Slot
	000	No option	A (A, B)
	232	RS232 interface	A (B)
	422	RS422 interface	A (B)
	485	RS485 interface	A (B)
	CAN	CAN-Bus interface	B (A)
	CCA	CANopen (DS402) + Parker System bus + RS485	B (A)
	CC8	CANopen (DS402) + Parker system bus + 4 inputs and 4 outputs + RS485	B (A)
	PDN	PROFIBUS DP	B (A)
	PC8	Profibus DP+CAN2+outputs and 4 inputs + RS485	B (A)
	PCA	Profibus DP+CAN2 + RS485	B (A)
	EA5	I/O Interface (5 inputs, 2 outputs)	

9	Additional option module on the drive via X200		
			Slot
	000	No option	-
	EAE	I/O Interface (14 inputs, 10 outputs)	C
	CCA [1]	Parker System bus + RS485	C
	CC8 [1]	Parker system bus + 4 inputs and 4 outputs + RS485	C

10	X300 Functions module		
	RD2	Standard X30 Resolver module	D
	HF2	HIPERFACE Module	D
	SC2	Sine/Cosine Module	D

11	With memory chip		
	RM1	Resolver + Memory-Module	D
	HM1	HIPERFACE + Memory Module	D
	SM1	Sine/Cosine + Memory Module	D
	EM1	EnDat + Memory module	D

12	Additional option	
	empty	no additional options
	X7x	Ready - contacts X10.7 - X10.8
	BSx	Moisture / condensation protection

[1] Cannot be combined with CCA, CC8, PC8, PCA
No CANopen DS402

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374.

AEROSPACE
Key Markets
- Aircraft engines
- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products
- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

CLIMATE CONTROL
Key Markets
- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products
- CO_2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

ELECTROMECHANICAL
Key Markets
- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products
- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions

FILTRATION
Key Markets
- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products
- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

FLUID & GAS HANDLING
Key Markets
- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products
- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

HYDRAULICS
Key Markets
- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products
- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

PNEUMATICS
Key Markets
- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products
- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors

PROCESS CONTROL
Key Markets
- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products
- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

SEALING & SHIELDING
Key Markets
- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products
- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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