



aerospace
climate control
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process control
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638 Series

Servo Drive from 1 to 15 A



Parker

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Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

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Servo Drive - 638 Series

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Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

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- the global leader in motion and control technologies

A world class player on a local stage

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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.

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Asia
Shanghai, China
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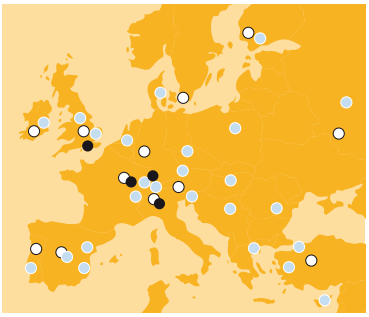
For contact information, please refer to the Sales Offices on the back cover of this document or visit www.parker.com



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

LISTED

Industrial Control Equipment 55Y4 c UL us LISTED

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

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

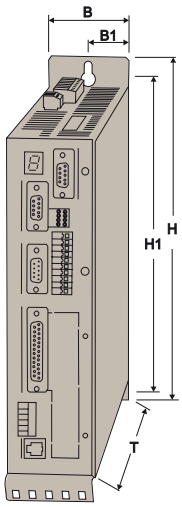
- STO: Safety torque off in accordance with EN13489-1 Category 3, Performance Level d and EN1037 as standard (connector STO X11)
- Brake / PTC output (BR/TH X62 Plug)

Standards & Conformance

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

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Dimensions



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

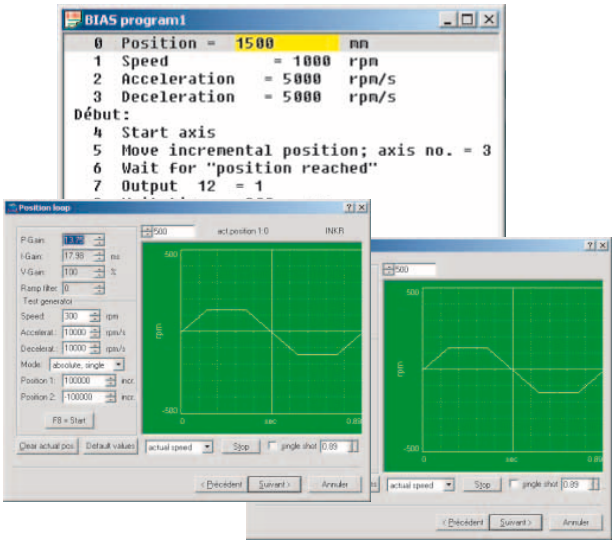
Accessories

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



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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	Size A
	02	2 A	
	04	4 A	
	06	6 A	
	03	2.5 A	Frame B
	05	5 A	
	08	7.5 A	
	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

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

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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

Tel: +45 63 12 83 00 | Email: ps@hymatik.com | www.hymatik.com | Hvidkaervej 27a, DK-5250 Odense SV, Denmark

Parker Worldwide

Europe, Middle East, Africa

AE – United Arab Emirates, Dubai
Tel: +971 4 8127100
parker.me@parker.com

AT – Austria, Wiener Neustadt
Tel: +43 (0)2622 23501-0
parker.austria@parker.com

AT – Eastern Europe, Wiener Neustadt
Tel: +43 (0)2622 23501 900
parker.easteurope@parker.com

AZ – Azerbaijan, Baku
Tel: +994 50 2233 458
parker.azerbaijan@parker.com

BE/LU – Belgium, Nivelles
Tel: +32 (0)67 280 900
parker.belgium@parker.com

BY – Belarus, Minsk
Tel: +375 17 209 9399
parker.belarus@parker.com

CH – Switzerland, Etoy
Tel: +41 (0)21 821 87 00
parker.switzerland@parker.com

CZ – Czech Republic, Klecany
Tel: +420 284 083 111
parker.czechrepublic@parker.com

DE – Germany, Kaarst
Tel: +49 (0)2131 4016 0
parker.germany@parker.com

DK – Denmark, Ballerup
Tel: +45 43 56 04 00
parker.denmark@parker.com

ES – Spain, Madrid
Tel: +34 902 330 001
parker.spain@parker.com

FI – Finland, Vantaa
Tel: +358 (0)20 753 2500
parker.finland@parker.com

FR – France, Contamine s/Arve
Tel: +33 (0)4 50 25 80 25
parker.france@parker.com

GR – Greece, Athens
Tel: +30 210 933 6450
parker.greece@parker.com

HU – Hungary, Budapest
Tel: +36 1 220 4155
parker.hungary@parker.com

IE – Ireland, Dublin
Tel: +353 (0)1 466 6370
parker.ireland@parker.com

IT – Italy, Corsico (MI)
Tel: +39 02 45 19 21
parker.italy@parker.com

KZ – Kazakhstan, Almaty
Tel: +7 7272 505 800
parker.easteurope@parker.com

NL – The Netherlands, Oldenzaal
Tel: +31 (0)541 585 000
parker.nl@parker.com

NO – Norway, Asker
Tel: +47 66 75 34 00
parker.norway@parker.com

PL – Poland, Warsaw
Tel: +48 (0)22 573 24 00
parker.poland@parker.com

PT – Portugal, Leca da Palmeira
Tel: +351 22 999 7360
parker.portugal@parker.com

RO – Romania, Bucharest
Tel: +40 21 252 1382
parker.romania@parker.com

RU – Russia, Moscow
Tel: +7 495 645-2156
parker.russia@parker.com

SE – Sweden, Spånga
Tel: +46 (0)8 59 79 50 00
parker.sweden@parker.com

SK – Slovakia, Banská Bystrica
Tel: +421 484 162 252
parker.slovakia@parker.com

SL – Slovenia, Novo Mesto
Tel: +386 7 337 6650
parker.slovenia@parker.com

TR – Turkey, Istanbul
Tel: +90 216 4997081
parker.turkey@parker.com

UA – Ukraine, Kiev
Tel +380 44 494 2731
parker.ukraine@parker.com

UK – United Kingdom, Warwick
Tel: +44 (0)1926 317 878
parker.uk@parker.com

ZA – South Africa, Kempton Park
Tel: +27 (0)11 961 0700
parker.southafrica@parker.com

North America

CA – Canada, Milton, Ontario
Tel: +1 905 693 3000

US – USA, Cleveland
Tel: +1 216 896 3000

Asia Pacific

AU – Australia, Castle Hill
Tel: +61 (0)2-9634 7777

CN – China, Shanghai
Tel: +86 21 2899 5000

HK – Hong Kong
Tel: +852 2428 8008

IN – India, Mumbai
Tel: +91 22 6513 7081-85

JP – Japan, Tokyo
Tel: +81 (0)3 6408 3901

KR – South Korea, Seoul
Tel: +82 2 559 0400

MY – Malaysia, Shah Alam
Tel: +60 3 7849 0800

NZ – New Zealand, Mt Wellington
Tel: +64 9 574 1744

SG – Singapore
Tel: +65 6887 6300

TH – Thailand, Bangkok
Tel: +662 186 7000-99

TW – Taiwan, Taipei
Tel: +886 2 2298 8987

South America

AR – Argentina, Buenos Aires
Tel: +54 3327 44 4129

BR – Brazil, Sao Jose dos Campos
Tel: +55 800 727 5374

CL – Chile, Santiago
Tel: +56 2 623 1216

MX – Mexico, Apodaca
Tel: +52 81 8156 6000

European Product Information Centre
Free phone: 00 800 27 27 5374
(from AT, BE, CH, CZ, DE, DK, EE, ES, FI, FR, IE, IL, IS, IT, LU, MT, NL, NO, PL, PT, RU, SE, SK, UK, ZA)

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192-124100N1 October 2011

Parker Hannifin Ltd.
Tachbrook Park Drive / Tachbrook Park,
Warwick, CV34 6TU
United Kingdom
Tel.: +44 (0) 1926 317 878
Fax: +44 (0) 1926 317 855
parker.uk@parker.com
www.parker.com

Your local authorized Parker distributor