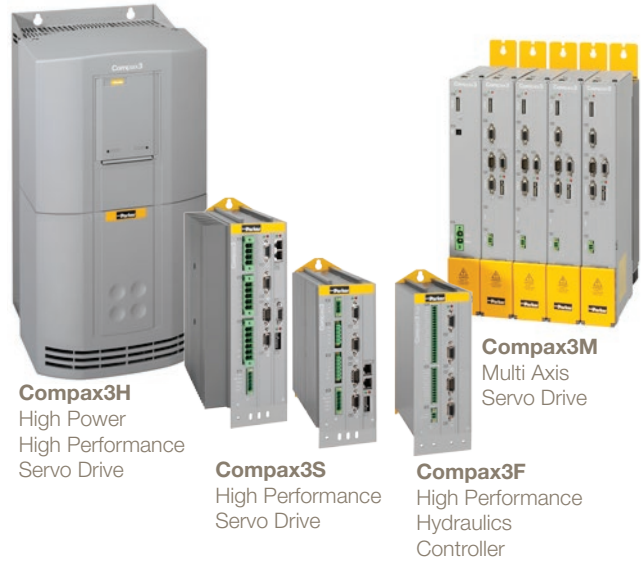# Intelligent Servo Drive Compax3

Overview

Description

Compax3 is Parker Hannifin's global servo drive. The drive series includes single and multi axis drives as well as hydraulic controllers. It features a power range from 1 to 109 kVA.

The servo drives are completely developed and manufactured in Germany. An additional Compax3 production site was established in the US. As a global servo drive controller, Compax3 is of course available all over the world. Service and support sites are located in the vicinity of all major industry locations - worldwide. The "Parker Authorized Distribution Partners" do play an important role in this context - well-trained and experienced application and support specialists will provide the necessary professional support in any situation.

Compax3H
High Power
High Performance
Servo Drive

Compax3M
Multi Axis
Servo Drive

Compax3S
High Performance
Servo Drive

Compax3F
High Performance
Hydraulics
Controller

Features

Hardware

- Power range from 1 to 109 kW
- 1 encoder output / 1 encoder input
- 8 digitale inputs /4 digital outputs
- 2 analog inputs (14 Bit)
- 2 analog outputs (8 Bit)
- Several fieldbuses
- Extensive safety technology

Technology Functions

- I10T10: Drive control via: velocity/torque control, step/direction input, encoder input
- I12T11: Positioning via digital I/Os, RS232/ RS485, absolute/relative positioning, registration mark related positioning, electronic gearbox, dynamic positioning
- T30: Programming based on IEC61131-3 with CoDeSys
  - PLCopen function modules
  - IEC61131-3 - standard modules
  - C3-specific function modules
- T40: T30 functionality + cam function

Technical Characteristics - Overview

Device:	Current [A]		Supply voltage	Power [kVA]
Compax3	$I_{cont.}$	I_{peak} (<5 s)		
S025V2	2.5	5.5	1 * 230/240 VAC	1.0
S063V2	6.3	12.6		2.5
S100V2	10	20	3 * 230/240 VAC	4.0
S150V2	15	30		6.0
S015V4	1.5	4.5	3 * 400/480 VAC	1.25
S038V4	3.8	9.0		3.1
S075V4	7.5	15		6.2
S150V4	15	30		11.5
S300V4 [1]	30	60		25.0
H050V4	50	75	3 * 400/480 VAC	35.0
H090V4	90	135		70.0
H125V4	125	187.5		91.0
H155V4	155	232.5		109.0

[1] Operation with capacitor module ModulC4.

Device:	Current [A]		DC bus voltage
Compax3	$I_{cont.}$	I_{peak} (<5 s)	
M050D6	5	10	325...679 VDC (Rated voltage 560 VDC)
M100D6	10	20	
M150D6	15	30	
M300D6	30	60	

Order Code

Devices: Compax3

Example:		1	2	3		4	5	6	7	8
		C3	S	025	V2	F10	I10	T10	M00	

1	Device family	
	C3	Compax3

2	Device type	
	S	Single-axis
	H	High power
	M	Multi-axis device
	F	Hydraulics controller (C3F001D2F12)

3	Device currents static/dynamic; supply voltage	
	Compax3S	
	025 V2	2.5 A / 5 A; 230 VAC (single phase)
	063 V2	6.3 A /12.6 A; 230 VAC (single phase)
	100 V2	10 A / 20A; 230 VAC (3 phase)
	150 V2	15 A / 30 A; 230 VAC (3 phase)
	015 V4	1.5 A / 4.5 A; 400 VAC (3 phase)
	038 V4	3.8 A / 9 A; 400 VAC (3 phase)
	075 V4	7.5 A / 15.0 A; 400 VAC (3 phase)
	150 V4	15.0 A / 30.0 A; 400 VAC (3 phase)
	300 V4	30.0 A / 60.0 A; 400 VAC (3 phase) [1]
	Compax3H	
	050 V4	50 A / 75 A; 400 VAC (3 phase)
	090 V4	90 A / 135 A; 400 VAC (3 phase)
	125 V4	125 A / 187.5 A; 400 VAC (3 phase) [2]
	155 V4	155 A / 232.5 A; 400 VAC (3 phase) [2]
	Compax3M	
	050 D6	5.0 A / 10.0 A; 400 VAC (3 phase)
	100 D6	10 A / 20 A; 400 VAC (3 phase)
	150 D6	15 A / 30 A; 400 VAC (3 phase)
	300 D6	30 A / 60 A; 400 VAC (3 phase)
	Compax3F	
	001 D2	24 VDC

4	Feedback	
	F10	Resolver (not for C3F)
	F11	SinCos© (Hiperface) (not for C3F)
	F12	Encoder, Sine/cosine with/without hall, EnDat

5	Interface	
	I10	Step/direction / analog input (only I10T10)
	I11	Positioning via inputs/outputs (only I11T11)
	I12	Positioning via I/Os or RS232 / RS485 / USB
	I20	PROFIBUS DP V0/V1/V2 (12 Mbaud)
	I21	CANopen
	I22	DeviceNet
	I30	Ethernet Powerlink
	I31	EtherCAT
	I32	PROFINET

6	Technology function	
	T10	Servo controller (only I10)
	T11	Positioning
	T30	Motion control programmable in accordance with IEC 61131-3
	T40	Motion control programmable in accordance with IEC 61131-3 & electronic cam

7	Options	
	M00	No additional supplement
	M10	Extension by 12 digital I/Os & HEDA Motionbus (not for T10, T11)
	M11	HEDA Motionbus (not for T10, T11)
	M12	Extension by 12 digital I/Os (not for T10, T11)
	M21	Analog current / voltage inputs (0...20 mA) and (-10...+10 V) (3 each)

8	Optional safety technology for C3M	
	S1	Safe torque off (furnished with the device)
	S3	Extended safety technology

[1] Operation of the C3S300V4 with capacitor module ModulC4.
[2] external voltage supply for ventilator fan required. Available in two versions for single phase feed. Standard: 220/240 VAC: 140 W, on request: 110/120 VAC: 130 W

Software dongle for SafePLC

Example:		1
		SafePLC

1	Accessories	
	SafePLC	Dongle for programming the safety technology for the C3M option S3

PROFIBUS and PROFINET are registered trademarks of PROFIBUS & PROFINET International (PI). EtherCAT® is a registered trademark and patented technology, licensed by Beckhoff Automation GmbH, Germany.

Accessories

Power module: PSUP

	1	2	3	4	5
Example:	**PSU**	**P**	**10 D6**	**USB**	**M00**

1	**Device family**	
	PSU	Mains Module
2	**Device type**	
	P	Mains Module
3	**Nominal power; supply voltage**	
	10 D6	10 kW; 400 VAC (3 phase)
	20 D6	20 kW; 400 VAC (3 phase)
	30 D6	30 kW; 400 VAC (3 phase) [1]
4	**Interface**	
	USB	USB connection
5	**Options**	
	M00	no additional supplement

[1] Operation of the PSUP30 only with line choke.
Required line choke for the PSUP30: 0.45 mH / 55 A
We offer the following line chokes:
LCG-0055-0.45 mH
(WxDxH: 180x140x157 mm; 10 kg)
LCG-0055-0.45 mH-UL
(with UL certification, WxDxH: 180x170x157 mm; 15 kg)

Connection set for Compax3 and PSUP

Mating plug connector (furnished with the device)

	1
Example:	**ZBH02/02**

1	**Accessories**	
	ZBH02/01	for C3S0xxV2
	ZBH02/02	for C3S0xxV4 / S150V4 / S1xxV2
	ZBH02/03	for C3S300V4
	ZBH02/04	for C3F00xD2
	ZBH04/01	for C3M050D6, C3M100D6, C3M150D6
	ZBH04/02	for C3M300D6
	ZBH04/03	for PSUP10
	ZBH04/04	for PSUP20/PSUP030

Motor Cable

	1	2
Example:	**MOK**	**55/02**

1	**Accessories**	
	MOK	Motor cable [2]
2	**Type**	
		for SMH / MH56 / MH70 / MH105 [3]
	55/.... [1]	1.5 mm²; to 13.8 A
	54/.... [1]	1.5 mm²; up to 13.8 A cable chain compatible
	56/.... [1]	2.5 mm²; to 18.9 A
	57/.... [1]	2.5 mm²; up to 18.9 A cable chain compatible
		for MH145 / MH205 [4]
	60/.... [1]	1.5 mm²; to 13.8 A
	63/.... [1]	1.5 mm²; up to 13.8 A cable chain compatible
	59/.... [1]	2.5 mm²; to 18.9 A
	64/.... [1]	2.5 mm²; up to 18.9 A cable chain compatible
	61/.... [1]	6 mm²; up to 32.3 A cable chain compatible
	62/.... [1]	10 mm²; up to 47.3 A cable chain compatible

MOK55 and MOK54 are also possible for linear motors LXR406, LXR412.

Feedback cable

	1
Example:	**REK42/02**

1	**Accessories**	
		for MH/SMH motors
	REK42/.... [1]	Resolver cable [2]
	REK41/.... [1]	Resolver cable [2] cable chain compatible
	GBK24/.... [1]	SinCos© feedback cable [2] cable chain compatible
	GBK38/.... [1]	EnDat 2.1 feedback cable [2] cable chain compatible (C3S, H, M)
	GBK23/.... [1]	Encoder cable [2] cable chain compatible
		for linear motors
	GBK33/.... [1]	Feedback cable to LXR cable chain compatible
	GBK40/.... [1]	SSI, Start Stop (C3F)
	GBK41/.... [1]	EnDat 2.1 Feedback cable (C3F) cable chain compatible
	GBK56/.... [1]	EnDat 2.2 feedback cable (C3S, H, M) cable chain compatible
	GBK57/.... [1]	EnDat 2.2 Feedback cable (C3F) cable chain compatible

[1] - [4]

Order code for interface cables and connectors

	1
Example:	**SSK01/01**

1	**Accessories**
SSK01/....[1]	RS232 (PC-Compax3)
SSK33/.... [1]	USB (PC-PSUP)
SSK21/....[1]	Ref / analog - with flying leads (X11, X13 @C3F001D2)
SSK22/....[1]	Digital I/Os with flying leads (X12 / X22)
SSK23/....[1]	Ref /analog for I/O terminal block (X11)
SSK24/....[1]	Digital I/Os for I/O terminal block (X12, X22)
SSK25/....[1]	RS232 (PC-Pop)
SSK27/../..[6]	RS485 (C3-Pop for more than one C3H on request)
SSK28/....[5]	RJ45 Crossover cable (C3 HEDA-HEDA, PC-C3 powerPLmC, C3M-C3M communication, PROFINET, EtherCAT, Ethernet Powerlink
SSK29/....[1]	Encoder coupling of 2 axes (X11-X11)
SSK31/.... [1].[7]	Cable Modem-Compax3 X10
SSK32/20	Adapter cable for C3H to SSK01 (15 cm furnished with the device)
VBK17/01	RS232 connection controller- programming interface (furnished with the device for C3H X10)
BUS07/01	Bus terminal connector (1st. and last C3 in the HEDA bus/or multi-axis system)
SSL01 [7]	PROFIBUS cable [2] not prefabricated
BUS08/01	Profibus connector Plug with 2 cable inputs (1 arriving, 1 continuing PROFIBUS cable), as well as a switch for activating the terminal resistor
SSL02 [7]	CAN Bus cable [2] not prefabricated
BUS10/01	CAN bus connector Plug with 2 cable inputs (1x arriving, 1x continuing CANbus cable), as well as a switch for activating the terminal resistor

[1] - [6]   see "Length code for cables" (page 28)
DeviceNet -A mating plug is included in the delivery. Additional information on DeviceNet wiring can be found under: www.odva.org

Length code for cables

[1] Length code 1 (Example: SSK01/09 = length 25 m)

Length [m]	1.0	2.5	5.0	7.5	10.0	12.5	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0
Order code	01	02	03	04	05	06	07	08	09	10	11	12	13	14

[2] Color according to DESINA
[3] with motor connector
[4] with cable eye for motor terminal box
[5] length code 2 for SSK28

Length [m]	0.17	0.25	0.5	1.0	3.0	5.0	10.0
Order code	23	20	21	01	22	03	05

[6] Order code: SSK27/nn/..
Length A (Pop - 1st. Compax3) variable (the last two numbers corresponding to the cable length code for example SSK27/nn/01)
Length B (1st. Compax3 - 2nd. Compax3 - ... nth. Compax3) fixed 50 cm (only if there is more than 1 Compax3, i.e. nn greater than 01)
Number n (the last two digits)
[7] Number ordered corresponds to the cable length in m