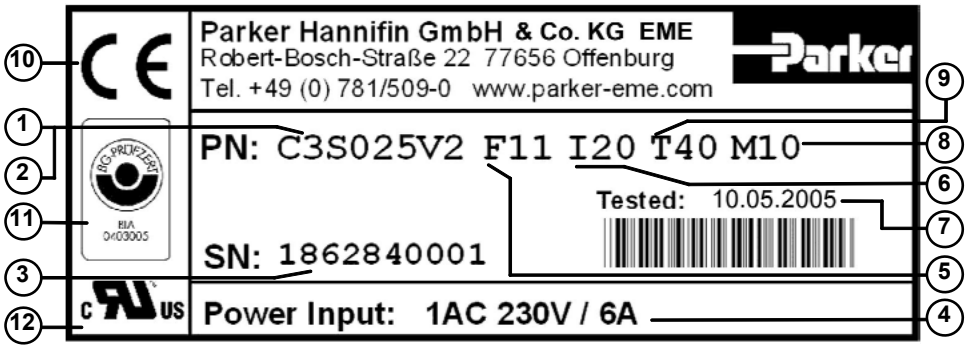
1.2 Type specification plate

Compax3 - Type specification plate:

You will find the exact description of the device on the type specification plate, which can be found on the device:



Explanation:

1	Type designation The complete order designation of the device (2, 5, 6, 9, 8).
2	**C3:** Abbreviation for Compax3 **S025:** Single axis device, nominal device current in 100mA (025=2.5A) **M050:** Multi-axis device, nominal device current in 100mA (050=5A) **H050:** High power device, nominal device current in 1A (050=50A) **MP10:** Mains module 3AC230...480V, nominal power in 1kW (10=10kW)
	D6: Nominal supply voltage (6=560VDC) **V2:** Mains supply voltage (2=230VAC/240VAC, 4=400VAC/480VAC)
3	Unique number of the particular device
4	Nominal supply voltage Power Input: 1AC = single phase, 3AC = three phase / input current
5	Designation of the feedback system **F10:** Resolver **F11:** SinCos© / Single- or Multiturn **F12:**Feedback module for direct drives
6	Device interface **I10:** Analog, step/direction and encoder input **I11 / I12:** Digital Inputs / Outputs and RS232 / RS485 **I20:** Profibus DP / **I21:** CANopen / **I22:** DeviceNet / **I30:** Ethernet Powerlink / **I31:** EtherCAT **C10:**integrated controller C3 *power*PL*m*C **C13:**integrated controller C3 *power*PL*m*C with Profibus
7	Date of factory test
8	Options **Mxx:**I/O extension, HEDA **Sx:** optional safety technology on the C3M
9	Technology function **T10:** Servo controller **T11:** Positioning **T30:** Motion control programmable according to IEC61131-3 **T40:** Electronic cam generation
10	CE compliance
11	Certified safety technology
12	UL certification

1.6.2. Conditions of utilization for UL certification Compax3S

UL certifiction for Compax3S

conform to UL:	◆according to UL508C
Certified	◆E-File_No.: E235 342

The UL certification is documented by a ”UL” logo on the device (type specification plate).

”UL” logo

Conditions of utilization

- The devices are only to be installed in a degree of contamination 2 environment (maximum).
- The devices must be appropriately protected (e.g. by a switching cabinet).
- The X2 terminals are not suitable for field wiring.
- Tightening torque of the field wiring terminals (green Phoenix plugs)
  - C3S0xxV2 0.57 - 0.79Nm 5 - 7Lb.in
  - C3S1xxV2, C3S0xxV4, C3S150V4 0.57 - 0.79Nm 5 - 7Lb.in
  - C3S300V4 1.25 - 1.7Nm 11 - 15Lb.in
- Temperature rating of field installed conductors shall be at least 60°C Use copper lines only
  Please use the cables described in the **accessories chapter** (see page 458, see page 460), they do have a temperature rating of at least 60°C.
- Maximum ambient temperature: 45°C.
- Suitable for use on a circuit capable of delivering not more than 5000 rms symmetrical amperes and 480 volts maximum.

ATTENTION
Danger of electric shock.
Discharge time of the bus capacitator is 5 minutes.

- The drive provides internal motor overload protection.
  This must be set so that 200% of the motor nominal current are not exceeded.
- Cable cross-sections
  - Mains input: corresponding to the recommended fuses.
  - **Motor cable:** (see page 477) corresponding to the **nominal output currents** (see page 516, see page 515)
  - Maximum cross-section limited by the terminals mm^2 / AWG
    - C3S0xxV2 2.5mm^2 AWG 12
    - C3S1xxV2, C3S0xxV4, C3S150V4 4.0mm^2 AWG 10
    - C3S300V4 6.0mm^2 AWG 7

- Fuses
  In addition to the main fuse, the devices must be equipped with a S 201 K or S 203 K fuse made by ABB.
  - C3S025V2: ABB, nominal 480V 10A, 6kA
  - C3S063V2: ABB, nominal 480V, 16A, 6kA
  - C3S100V2: ABB, nominal 480V, 16A, 6kA
  - C3S150V2: ABB, nominal 480V, 20A, 6kA
  - C3S015V4: ABB, nominal 480V, 6A, 6kA
  - C3S038V4: ABB, nominal 480V, 10A, 6kA
  - C3S075V4: ABB, nominal 480V, 16A, 6kA
  - C3S150V4: ABB, nominal 480V, 20A, 6kA
  - C3S300V4: ABB, nominal 480V, 25A, 6kA

3.3.3. Control voltage 24VDC / enable connector X4 C3S



PIN	Description
1	+24V (supply)
2	Gnd24 V
3	Enable_in
4	Enable_out_a
5	Enable_out_b

Line cross sections:
minimum: 0.25mm²
maximum: 2.5mm²
(AWG: 24 ... 12)

Control voltage 24VDC Compax3S and Compax3H

Controller type	Compax3
Voltage range	21 - 27VDC
Mains module	with switch-on current limitation, due to capacitive load
Fuse	MCB miniature circuit breaker or "delayed action fuse", due to capacitive load
Current drain of the device	0.8A
Total current drain	0.8 A + Total load of the digital outputs + current for the motor holding brake
Ripple	0.5Vpp
Requirement according to safe extra low voltage (SELV)	yes
Short-circuit proof	conditional (internally protected with 3.15AT)

Hardware - enable (input X4/3 = 24VDC)

This input is used as safety interrupt for the power output stage.
Tolerance range: 18.0V - 33.6V / 720Ω

Safe standstill (X4/3=0V)

For implementation of the "Safe standstill" safety feature in accordance with the ”protection against unexpected start-up” described in EN1037. Observe instructions in the corresponding **section** (see page 87) with the circuitry examples!
The energy supply to the drive is reliably shut off, the motor has no torque.
A relay contact is located between X4/4 and X4/5 (normally closed contact)

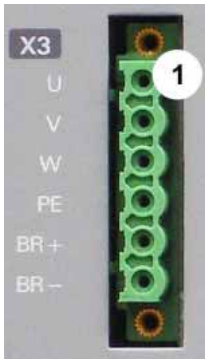
Enable_out_a - Enable_out_b	Power output stage is
Contact opened	activated
Contact closed	disabled

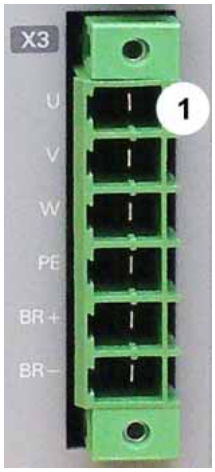
Series connection of these contacts permits certain determination of whether all drives are de-energized.

Relay contact data:

Switching voltage (AC/DC): 100mV -60V
Switching current: 10mA - 0.3A
Switching power: 1mW...7W

3.3.4. Motor / Motor brake (C3S connector X3)





PIN	Designation	
1	U (motor)	
2	V (motor)	
3	W (motor)	
4	PE (motor)	
5	BR+	Motor holding brake *
6	BR-	Motor holding brake *

*** Please note that Compax3 will report error "open circuit at holding brake" (5481h / 2163d) if the current is < 150mA.**
If needs be, use a parallel resistor of 150Ohm for relay control!

Requirements for motor cable

<100 m (the cable must not be rolled up!)
A **motor output filter** (see page 471) is required for motor cables >20m :

Shielding connection of the motor cable

The cable should be fully screened and connected to the Compax3 housing. We offer a special Shield connecting terminal as accessory item (ZBH./...).
The shield of the cable must also be connected with the motor housing. The fixing (via plug or screw in the terminal box) depends on the motor type.

Motor holding brake!

Connect the brake only on motors which have a holding brake! Otherwise make no brake connections at all.

Requirements cables for motor holding brake

If a motor holding brake is present, **a cable** of the motor holding brake must be fed on the device side through the toroidal core ferrite provided as accessory ZBH0x/xx (63Ω @1MHz, di=5.1mm), in order to ensure error-free switching on and off of the motor holding brake.

Motor holding brake output

Motor holding brake output	Compax3
Voltage range	21 – 27VDC
Maximum output current (short circuit proof)	1.6A
Minimum output current	150 mA

Motor cable (see page 477)

3.3.6. C3Sxxx V4

In this chapter you can read about:

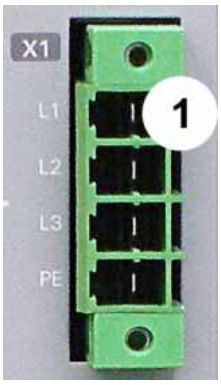
Power supply connector X1 for 3AC 400VAC/480VAC-C3S devices 39
Braking resistor / high voltage supply connector X2 for 3AC 400VAC/480VAC_C3S devices 40
Connection of the power voltage of 2 C3S 3AC devices.....41

3.3.6.1 Power supply connector X1 for 3AC 400VAC/480VAC-C3S devices

Device protection

By cyclically switching on and off the power voltage, the input current limitation can be overloaded, which will cause a device error.

Therefore please wait at least 2 minutes after switching off before you switch the device on again!



PIN	Designation
1	L1
2	L2
3	L3
4	PE

Mains connection Compax3SxxxV4 3AC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Supply voltage	Three phase 3*400VAC/480VAC 80-528VAC / 50-60Hz				
Input current	3Aeff	6Aeff	10Aeff	16Aeff	22Aeff
Maximum fuse rating per device(=short circuit rating)	6A	10A	16A	20A	25A
	MCB miniature circuit breaker				D*

* for **UL conform operation** (see page 22): MCB miniature circuit breaker S273-K.

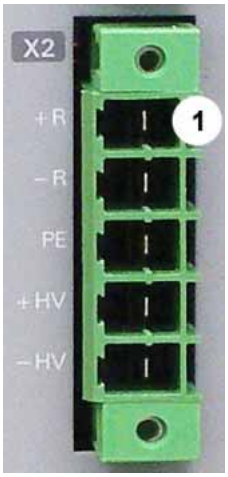
Caution!

The 3AC V4 – devices must only be operated with three phases!

Always switch devices off before wiring them!

Dangerous voltages are still present until 5 minutes after switching off the power supply!

3.3.6.2 Braking resistor / high voltage supply connector X2 for 3AC 400VAC/480VAC_C3S devices



PIN	Description	
1	+ Braking resistor	no short-circuit protection!
2	- Braking resistor	
3	PE	
4	+ DC high voltage supply	
5	- DC high voltage supply	

Braking operation Compax3SxxxV4 3AC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Capacitance / storable energy	235µF / 37Ws	235µF / 37Ws	470µF / 75Ws	690µF / 110Ws	1100µF / 176Ws
Minimum braking-resistance	100Ω	100Ω	56Ω	33Ω	15Ω
Recommended nominal power rating	60 ... 100W	60 ... 250W	60 ... 500 W	60 ... 1000 W	60 ... 1000 W
Maximum continuous current	10A	10A	15A	20A	30A

Connection of a braking resistor

Mimimum line cross section: 1.5mm²
Maximum line length: 2m
aximum output voltage: 800VDC

3.7.5.2 Function of the Bus LEDs

LED (red)

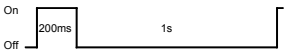
No.	Signal	Status	Description
1	**off**	No Error	The bus is operating
2	**Single flash**	Warning	at least one of the error counters of the CAN controller has reached the warning level.
3	**Double flash**	Error	Communication Fault
4	**Triple flash**	Error	Double Mac ID
5	**on**	Error	Bus Off

If several errors occur at once, the error with the most significant number is reported.

LED green

Signal	Status	Description
Single flash	On-line Not Connected	Online, not at the master (not allocated)
blinks (permanently)	On-line Connected	Online, at the master (allocated)
on	On-line I/O Connected	I/O Messages allocated

Single flash



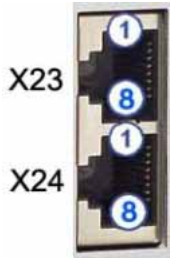
Double flash



Triple flash



3.7.6. Ethernet Powerlink (Option I30) / EtherCAT (option I31) X23, X24



	RJ45 (X23)	RJ45 (X24)
PIN	**in**	**out**
1	Tx +	Tx +
2	Tx -	Tx -
3	Rx +	Rx +
4	-	Reserved
5	-	Reserved
6	Rx -	Rx -
7	-	Reserved
8	-	Reserved

Wiring with Ethernet Crossover cable Cat5e (from X24 to X23 of the next device without termination); for this, we recommend ourl **SSK28** (see page 462, see page 504) interface cable.

Meaning of the RJ45 LEDs (only for Ethernet Powerlink, I30)

Green LED (top): connection established (RPT_LINK/RX)
Yellow LED (bottom): Traffic (exchange of data) (Transmit / Receive Data) (RPT_ERR)

3.7.6.3 Meaning of the Bus LEDs (EtherCAT)

Red LED (right): EtherCAT error

LED is influenced by the transitions of the status diagram

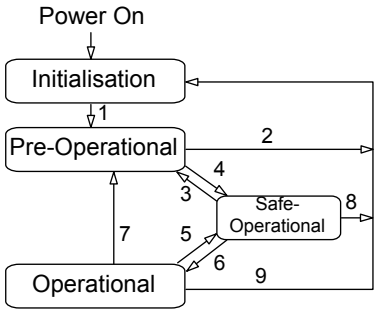
Error LED	Error:	Description
Off	No Error	
Flickering	Boot error	Error during initialization
Blinking	Invalid configuration	
Single Flash	Unsolicited change of status	Slave changed the status independently
Double Flash	Application Watchdog Timeout	Watchdog
On	PDI Watchdog Timeout	

Green LED (left): EtherCAT Status

LED shows the states of the status diagram

Status LED	status	Description
Off	INITIALIZATION	Initialisation
Blinking	PRE-OPERATIONAL	Ready
Single Flash	SAFE-OPERATIONAL	Master reads values
On	OPERATIONAL	Operation

Status diagram

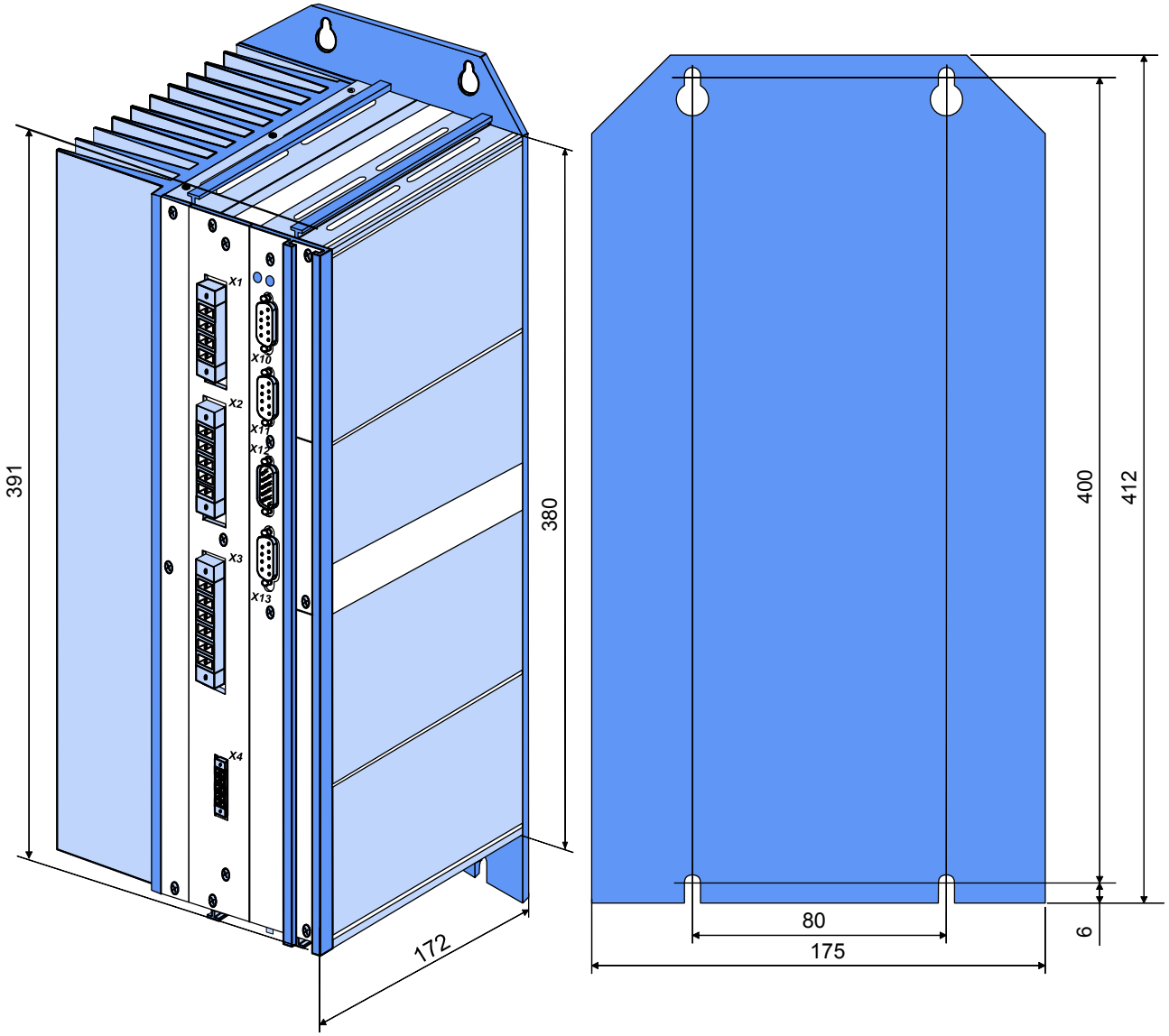


Transition	Action
1	Start mailbox communication
2	Stop mailbox communication
3	Start input update
4	Stop input update
5	Start output update
6	Stop output update
7	Stop output update, stop input update
8	Stop input update, stop mailbox communication
9	Stop output update, stop input update, stop mailbox communication

3.9.1.4 Mounting and dimensions Compax3S300V4

Mounting:

4 socket head screws M5



Please respect an appropriate mounting gap in order to ensure sufficient convection:

- At the side: 15mm
- At the top and below: at least 100mm

Compax3S300V4 is force-ventilated via a fan integrated into the heat dissipator!

3.9.2. Mounting and dimensions C3MP/C3M

Ventilation: During operation, the device radiates heat (power loss). Please provide for a sufficient mounting distance below and above the device in order to ensure free circulation of the cooling air. Please do also respect the recommended distances of

12. Specifications

Mains connection Compax3S0xxV2 1AC

Controller type	S025V2	S063V2
Supply voltage	Single phase 230VAC/240VAC 80-253 VAC/50-60Hz	
Input current	6Aeff	13Aeff
Maximum fuse rating per device (=short circuit rating)	10 A (MCB miniature circuit breaker)	16 A (MCB miniature circuit breaker)

Mains connection Compax3S1xxV2 3AC

Controller type	S100V2	S150V2
Supply voltage	Three phase 3* 230VAC/240VAC 80-253 VAC/50-60Hz	
Input current	10Aeff	13Aeff
Maximum fuse rating per device (=short circuit rating)	16 A (MCB miniature circuit breaker)	20 A (MCB miniature circuit breaker)

Mains connection Compax3SxxxV4 3AC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Supply voltage	Three phase 3*400VAC/480VAC 80-528VAC / 50-60Hz				
Input current	3Aeff	6Aeff	10Aeff	16Aeff	22Aeff
Maximum fuse rating per device(=short circuit rating)	6A	10A	16A	20A	25A
	MCB miniature circuit breaker				D*

* for **UL conform operation** (see page 22): MCB miniature circuit breaker S273-K.

Mains connection Compax3MP10D6

Device type Compax3MP10	230V	400V	480V
Supply voltage	230VAC ±10% 50-60Hz	400VAC ±10% 50-60Hz	480VAC ±10% 50-60Hz
Rated voltage	3AC 230V	3AC 400V	3AC 480V
Input current	22Aeff	22Aeff	18Arms
Output voltage	325VDC ±10%	565VDC ±10%	680VDC ±10%
Output power	6kW	10 kW	10 kW
Maximum fuse rating per device (=short circuit rating)	MCB miniature circuit breaker according to DIVQ.GuideInfo Recommendation: (ABB) S203 UP-25K (480VAC)		

Control voltage 24VDC Compax3MP / Compax3M

Device type	Compax3MP / Compax3M
Voltage range	21 - 27VDC
Mains module	with switch-on current limitation, due to capacitive load
Fuse	MCB miniature circuit breaker or "delayed action fuse", due to capacitive load
Current drain of the device	C3MP10D6: 0.2A C3MP20D6: 0.3A
Total current drain	C3M050D6: 0.85A C3M100D6: 0.85A C3M150D6: 0.85A C3M300D6: 1.0A + Total load of the digital outputs + current for the motor holding brake
Ripple	0.5Vpp
Requirement according to safe extra low voltage (SELV)	yes
Short-circuit proof	conditional (internally protected with 3.15AT)

Output data Compax3S0xx at 1*230VAC/240VAC

Controller type	S025V2	S063V2
Output voltage	3x 0-240V	3x 0-240V
Nominal output current	2.5Arms	6.3Aeff
Pulse current for 5s	5.5Aeff	12.6Aeff
Power	1kVA	2.5kVA
Switching frequency	16kHz	16kHz
Power loss for In	30W	60W

Output data Compax3S1xx at 3*230VAC/240VAC

Controller type	S100V2	S150V2
Output voltage	3x 0-240V	3x 0-240V
Nominal output current	10Aeff	15Aeff
Pulse current for 5s	20Aeff	30Aeff
Power	4kVA	6kVA
Switching frequency	16kHz	8kHz
Power loss for In	80 W	130W

Output data Compax3Sxxx at 3*400VAC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Output voltage	3x 0-400V				
Nominal output current	1.5Aeff	3.8Aeff	7.5 Aeff	15Aeff	30Aeff
Pulse current for 5s	4.5Aeff	9.0Aeff	15Aeff	30Aeff	60Aeff
Power	1kVA	2.5kVA	5kVA	10kVA	20kVA
Switching frequency	16kHz	16kHz	16kHz	8kHz	8kHz
Power loss for In	60W	80 W	120W	160W	350W

Output data Compax3Sxxx at 3*480VAC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Output voltage	3x 0-480V				
Nominal output current	1.5Aeff	3.8Aeff	6.5Aeff	13.9Aeff	30Aeff
Pulse current for 5s	4.5Aeff	7.5 Aeff	15Aeff	30Aeff	60Aeff
Power	1.25kVA	3.1kVA	6.2kVA	11.5kVA	25kVA
Switching frequency	16kHz	16kHz	16kHz	8kHz	8kHz
Power loss for In	60W	80 W	120W	160W	350W

Output data Compax3Mxxx at 3*230VAC

Device type Compax3	M050D6	M100D6	M150D6	M300D6
Power Input	325VDC ±10%			
Output voltage	3x 0-230V (0...500Hz)			
Nominal output current	5Aeff	10Aeff	15Aeff	30Aeff
Pulse current for 5s *	10Aeff	20Aeff	30Aeff	60Aeff
Power	2kVA	4kVA	6kVA	12kVA
Switching frequency	8kHz	8kHz	8kHz	8kHz
Power loss for In	70W+**	90W+**	120W+**	270W+**

*Turning frequency for pulse current: f>5Hz

** Maximum additinal losses with option card 5W.

Output data Compax3Mxxx at 3*400VAC

Device type Compax3	M050D6	M100D6	M150D6	M300D6
Power Input	565VDC ±10%			
Output voltage	3x 0-400V (0...500Hz)			
Nominal output current	5Aeff	10Aeff	15Aeff	30Aeff
Pulse current for 5s *	10Aeff	20Aeff	30Aeff	60Aeff
Power	3.33kVA	6.66kVA	10kVA	20kVA
Switching frequency	8kHz	8kHz	8kHz	8kHz
Power loss for In	70W+**	90W+**	120W+**	270W+**

*Turning frequency for pulse current: f>5Hz

** Maximum additinal losses with option card 5W.

Output data Compax3Mxxx at 3*480VAC

Device type Compax3	M050D6	M100D6	M150D6	M300D6
Power Input	680VDC ±10%			
Output voltage	3x 0-480V (0...500Hz)			
Nominal output current	4Aeff	8Arms	12.5Arms	25Arms
Pulse current for 5s *	8Arms	16Arms	25Arms	50Aeff
Power	3.33kVA	6.66kVA	10kVA	20kVA
Switching frequency	8kHz	8kHz	8kHz	8kHz
Power loss for In	70W+**	90W+**	120W+**	270W+**

*Turning frequency for pulse current: f>5Hz

** Maximum additinal losses with option card 5W.

Compax3S0xxV4 at 3*400VAC

Switching frequency*		S015V4	S038V4	S075V4	S150V4	S300V4
8kHz	$I_{nominal}$	-	-	-	**15A$_{eff}$**	**30A$_{eff}$**
	I_{peak} (<5s)	-	-	-	**30A$_{eff}$**	**60A$_{eff}$**
16kHz	$I_{nominal}$	**1.5A$_{eff}$**	**3.8A$_{eff}$**	**7.5A$_{eff}$**	10.0A$_{eff}$	26A$_{eff}$
	I_{peak} (<5s)	**4.5A$_{eff}$**	**9.0A$_{eff}$**	**15.0A$_{eff}$**	20.0A$_{eff}$	52A$_{eff}$
32kHz	$I_{nominal}$	1.5A$_{eff}$	2.5A$_{eff}$	3.7A$_{eff}$	5.0A$_{eff}$	14A$_{eff}$
	I_{peak} (<5s)	3.0A$_{eff}$	5.0A$_{eff}$	10.0A$_{eff}$	10.0A$_{eff}$	28A$_{eff}$

Compax3S0xxV4 at 3*480VAC

Switching frequency*		S015V4	S038V4	S075V4	S150V4	S300V4
8kHz	$I_{nominal}$	-	-	-	**13.9A$_{eff}$**	**30A$_{eff}$**
	I_{peak} (<5s)	-	-	-	**30A$_{eff}$**	**60A$_{eff}$**
16kHz	$I_{nominal}$	**1.5A$_{eff}$**	**3.8A$_{eff}$**	**6.5A$_{eff}$**	8.0A$_{eff}$	21.5A$_{eff}$
	I_{peak} (<5s)	**4.5A$_{eff}$**	**7.5A$_{eff}$**	**15.0A$_{eff}$**	16.0A$_{eff}$	43A$_{eff}$
32kHz	$I_{nominal}$	1.0A$_{eff}$	2.0A$_{eff}$	2.7A$_{eff}$	3.5A$_{eff}$	10A$_{eff}$
	I_{peak} (<5s)	2.0A$_{eff}$	4.0A$_{eff}$	8.0A$_{eff}$	7.0A$_{eff}$	20A$_{eff}$

The values marked with grey are the pre-set values (standard values)!
*corresponds to the frequency of the motor current

Resulting nominal and peak currents depending on the switching frequency

Compax3MxxxD6 at 3*400VAC

Switching frequency*		M050D6	M100D6	M150D6	M300D6
8kHz	$I_{nominal}$	5A$_{eff}$	10A$_{eff}$	15A$_{eff}$	30A$_{eff}$
	I_{peak} (<5s)	10A$_{eff}$	20A$_{eff}$	30A$_{eff}$	60A$_{eff}$
16kHz	$I_{nominal}$	3.8A$_{eff}$	7.5A$_{eff}$	10A$_{eff}$	20A$_{eff}$
	I_{peak} (<5s)	7.5A$_{eff}$	15A$_{eff}$	20A$_{eff}$	40A$_{eff}$
32kHz	$I_{nominal}$	2.5A$_{eff}$	3.8A$_{eff}$	5A$_{eff}$	11A$_{eff}$
	I_{peak} (<5s)	5A$_{eff}$	7.5A$_{eff}$	10A$_{eff}$	22A$_{eff}$

Compax3MxxxD6 at 3*480VAC

Switching frequency*		M050D6	M100D6	M150D6	M300D6
8kHz	$I_{nominal}$	4A$_{eff}$	8A$_{eff}$	12.5A$_{eff}$	25A$_{eff}$
	I_{peak} (<5s)	8A$_{eff}$	16A$_{eff}$	25A$_{eff}$	50A$_{eff}$
16kHz	$I_{nominal}$	3A$_{eff}$	5.5A$_{eff}$	8A$_{eff}$	15A$_{eff}$
	I_{peak} (<5s)	6A$_{eff}$	11A$_{eff}$	16A$_{eff}$	30A$_{eff}$
32kHz	$I_{nominal}$	2A$_{eff}$	2.5A$_{eff}$	4A$_{eff}$	8.5A$_{eff}$
	I_{peak} (<5s)	4A$_{eff}$	5A$_{eff}$	8A$_{eff}$	17A$_{eff}$

The values marked with grey are the pre-set values (standard values)!
*corresponds to the frequency of the motor current

Motors and feedback systems supported

Motors **Direct drives** ◆ Linear motors ◆ Torque motors	◆ Sinusoidal commutated synchronous motors ◆ Maximum rotating field frequency: 1,000Hz ◆ Max. velocity at 8 pole motors: 15000min^{-1}. ◆ General max. speed: 60*1000/number of pole pairs in [min^{-1}]. ◆ Max. number of poles = 600 ◆ Sinusoidal commutated asynchronous motors ◆ Maximum rotating field frequency: 1,000Hz ◆ Max. speed: 60*1000/number of pole pairs - slip in [min^{-1}]. ◆ Field suppression: typically up to triple (higher on request). ◆ Temperature sensor: KTY84-130 (insulated according to EN60664-1 or IEC60664-1) ◆ 3 phase synchronous direct drives
Position encoder (Feedback)	
	Option F10: Resolver Feedback
LTN:	◆ JSSBH-15-E-5 ◆ JSSBH-21-P4 ◆ RE-21-1-A05 ◆ RE-15-1-B04
Tamagawa:	◆ 2018N321 E64
Siemens:	◆ 23401-T2509-C202
	Option F11: SinCos©
	◆ Singleturn (SICK|Stegmann) ◆ Multiturn (SICK|Stegmann) Absolute position up to 4096 motor revolutions. ◆ Rotary feedback with HIPERFACE® interface: e.g.: SRS50, SRM50, SKS36, SKM36, SEK52

Braking operation Compax3SxxxV4 3AC

Controller type	S015V4	S038V4	S075V4	S150V4	S300V4
Capacitance / storable energy	235µF / 37Ws	235µF / 37Ws	470µF / 75Ws	690µF / 110Ws	1100µF / 176Ws
Minimum braking-resistance	100Ω	100Ω	56Ω	33Ω	15Ω
Recommended nominal power rating	60 ... 100W	60 ... 250W	60 ... 500 W	60 ... 1000 W	60 ... 1000 W
Maximum continuous current	10A	10A	15A	20A	30A

Braking operation Compax3MxxxD6 (axis controller)

Device type Compax3	M050	M100	M150	M300
Capacitance / storable energy	110µF/ 18Ws at 400V 10Ws at 480V	220µF/ 37Ws at 400V 21Ws at 480V	220µF/ 37Ws at 400V 21Ws at 480V	440µF/ 74Ws at 400V 42Ws at 480V

Braking operation of Compax3HxxxV4

Controller type	H050V4	H090V4	H125V4	H155V4
Capacitance / storable energy	2600µF / 602Ws	3150µF / 729Ws	5000µF / 1158Ws	5000µF / 1158Ws
Minimum braking-resistance	24Ω	15Ω	8Ω	8Ω
Maximum continuous current	30A	45A	83A	83A

Ballast resistors for Compax3

Braking Resistor **(see page 481)**	Device	Rated Power
BRM08/01 (100Ω)	Compax3S025V2 Compax3S015V4 Compax3S038V4	60W
BRM05/01 (56Ω)	Compax3S063V2 Compax3S075V4	180W
BRM05/02 (56Ω)	Compax3S075V4	570W
BRM10/01 (47Ω)	Compax3S150V4	570W
BRM04/01 (15Ω)	Compax3S150V2 Compax3S300V4 Compax3MP20D6	570W
BRM04/02 (15Ω)	Compax3S150V2 Compax3S300V4 Compax3MP20D6	740W
BRM04/03 (15Ω)	Compax3S300V4 Compax3MP20D6	1500W
BRM09/01 (22Ω)	Compax3S100V2	570W
BRM11/01 (27Ω)	Compax3H0xxV4	3500W
BRM13/01 (30Ω)	Compax3MP10D6 Compax3MP20D6**	500 W
BRM14/01 (15Ω)	Compax3MP10D6* Compax3MP20D6	500 W
BRM12/01 (18Ω)	Compax3H1xxV4	4500W

*for Compax3MP10D6 2x15Ω in series

**for Compax3MP20D6 2x30Ω parallel

Size / weight of Compax3S

Controller type	Dimensions HxWxD [mm]	Weight [kg]
Compax3S025V2	191 x 84 x 172	2.0
Compax3S063V2	191 x 100 x 172	2.5
Compax3S015V4	248 x 84 x 172	3.1
Compax3S100V2	248 x 115 x 172	4.3
Compax3S150V2	248 x 158 x 172	6.8
Compax3S038V4	248 x 100 x 172	3.5
Compax3S075V4	248 x 115 x 172	4.3
Compax3S150V4	248 x 158 x 172	6.8
Compax3S300V4	380 x 175 x 172	10.9

Minimum mounting distance: 15mm at the sides, above & below 100mm

Protection type IP20

Drawings, Mounting **(see page 78)**

Size / weight of Compax3MP/Compax3M

Device type	Dimensions HxWxD [mm]	Weight [kg]
Compax3MP10D6	360 x 50 x 263	3,95
Compax3MP20D6	360 x 100 x 263	
Compax3M050D6	360 x 50 x 263	3,5
Compax3M100D6	360 x 50 x 263	3,6
Compax3M150D6	360 x 50 x 263	3,6
Compax3M300D6	360 x 100 x 263	

Protection type IP20

Size / weight of Compax3H

Controller type	Dimensions HxWxD [mm]	Weight [kg]
Compax3H050V4	453 x 252 x 245	17,4
Compax3H090V4	668.6 x 257 x 312	32,5
Compax3H125V4	720 x 257 x 355	41
Compax3H155V4	720 x 257 x 355	41

Protection class IP20 when mounted in a control cabinet (not for Compax3H1xxxV4)

Drawings, Mounting **(see page 78)**

Safety technology Compax3S

Safe torque-off as per EN954-1, category 3 **Certified: (BG-PRÜFZERT certification number: 0403005)**	◆ For implementation of the ”protection against unexpected start-up” function described in EN1037. ◆ Note the circuit examples **circuit examples** (see page 87).

Environmental conditions Compax3S and Compax3H

General ambient conditions	According to **EN 60 721-3-1 to 3-3** Climate (temperature/humidity/barometric pressure): Class 3K3	
Permissible ambient temperature:		
Operation Storage Transport	0 to +45 C Class 3K3 -25 to +70 C Class 2K3 –25 to +70 C Class 2K3	
Tolerated humidity:	No condensation	
Operation Storage Transport	<= 85% class 3K3 <= 95% class 2K3 <= 95% class 2K3	(Relative humidity)
Elevation of operating site	<=1000m above sea level for 100% load ratings <=2000m above sea level for 1% / 100m power reduction Please inquire for greater elevations	
Mechanic resonances:	EN 60068-2-6 (sinusoidal excitation)	
Sealing	IP20 protection class according to EN 60 529	

Cooling Compax3S and Compax3H

Cooling mode:	C3S025V2 ... S150V4: Convection C3S300V4 & C3H: Forced air ventilation with fan in the heat dissipator **Air flow rate:** 459m³/h (C3H)
Supply:	C3S300V4, C3H050, C3H090 internal C3H125, C3H155 external 220/240VAC: 140W, 2.5µF, Stator - 62Ω Optionally on request: 110/120VAC: 130W, 10µF, Stator - 16Ω **Circuit breaker:** 3A

EMC limit values Compax3S and Compax3H

EMC interference emission	Limit values according to EN 61 800-3, Limit value class C3/C4 without additional mains filter: **Information on C2 limit value classes** (see page 19)
EMC disturbance immunity	Industrial area limit values in accordance with EN 61 800-3

IEC6113-3 functions

General	◆ Programming based on IEC61131-3 ◆ Up to 6000 instructions ◆ 650 16 bit variables ◆ 200 32 bit variables ◆ Recipe table with 288 variables ◆ 3x16-bit retain-variable ◆ 3x32-bit retain-variable
PLCOpen function modules	◆ Positioning: absolute, relative, additive, endless ◆ Electronic Gearbox (Gearing) ◆ Machine Zero ◆ Stop, activating the drice, quit ◆ Position, device status, reading axis error
IEC61131-3 standard modules	◆ Up to 8 timers (TON, TOF, TP) ◆ Triggers (R_TRIG, F_TRIG) ◆ Flip-flops (RS, SR) ◆ Counters (CTU, CTD, CTUD)
Device-specific function modules	◆ generates an input process image ◆ generates an output process image ◆ access to recipe table
Inputs/Outputs	◆ 8 digital inputs (24V level) ◆ 4 digital outputs (24-V level) ◆ Optional addition of 12 inputs/outputs

I20 Function

Profibus ratings

Profile	◆ PROFIdrive Profile drive system V3
DP Versions	◆ DPV0/DPV1
Baud rate	◆ up to 12MHz
Profibus ID	◆ C320
Device master file	◆ PAR_C320.GSD (can be found on the Compax3 - CD)
Communication Simatic <-> Compax3	◆ Simatic S7-300/400 - modules for Compax3 I20 and a corresponding help file can be found on the Compax3 CD in the folder: ..\Profibus\S7-moduls\

I21 Function

CANopen ratings

Baud rate [kBit/s]	◆ 20, 50, 100, 125, 250, 500, 800, 1000
EDS file	◆ C3.EDS
Service data object	◆ SDO1
Process data objects	◆ PDO1, ... PDO4

I22 Function

DeviceNet characteristic data

DeviceNet	◆ Predefined Master/Slave Connection Set ◆ Standard 2.0 Group-2-Slave ◆ Fieldbus I/O Data or Process Data (Polled, COS/Cyclic I/O and Bit Strobe)
Implemented object classes	◆ Identify, Message Router, DeviceNet, Assembly, Connection, Acknowledge Handler
Baud rate [kBit/s]	◆ 125, 250, 500
permissible cable length	◆ up to 500m on 125Bit/s, ◆ up to 200m on 250Bit/s, ◆ up to 100m on 500Bit/s,
Max. number of nodes	◆ 63 Slave
Insulation	◆ Isolated Device Physical Layer
EDS file	◆ C3_DeviceNet.EDS
Conformance (file in the Internet)	◆ **Statement of Conformance** http://www.compax3.de/C3_DeviceNet_Statement_of_Conformance.pdf
Further information:	◆ Application example (C3I22_DeviceNet.ZIP) on the Compax3 CD in the "\Examples" directory

Ethernet Powerlink / EtherCAT characteristics

Baud rate	◆ 100MBits (FastEthernet)
Bus file Ethernet Powerlink: EtherCAT:	◆ ◆ C3_EPL_cn.EDS ◆ C3_EtherCAT_xx.XML
Service data object	◆ SDO
Cycle time	◆ 1ms
Synchronicity accuracy	◆ maximum jitter: +/-25µs