KEB — F4 Combivert Frequency Inverters

09.F4.S1D-3420



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The **09.F4.S1D-3420** frequency inverter is produced by KEB for the F4 Combivert Frequency Inverters series. Classified as a COMBIVERT F4 unit, it converts a fixed three-phase 400 V AC input into a variable-frequency output that matches motor speed requirements. This operating principle supports conveyor, pump, and general motion applications in industrial automation. An **integrated braking transistor** directs regenerated energy to an external resistor, removing the need for a separate braking module and allowing shorter deceleration times.

The inverter uses a **Compact D-size housing** with an **IP20 protection rating**, making it suitable for installation inside a clean electrical cabinet. Its supply voltage can range from **305 to 500 V** without derating, and a 10 A mains fuse protects the input path. Standard control and fieldbus options are included for connection to common automation systems. Continuous motor output reaches **1.5 kW**, while the apparent output capacity is 2.8 kVA. Brief overloads can raise the output current to **7.4 A** when additional torque is required during acceleration. Dynamic braking requires a resistor with a minimum resistance of **160 ?**, and the internal braking circuit can handle 5 A of current. Nominal input current is 4.5 A, while the protective trip level is 9 A to prevent excessive loading of the incoming conductors.

The output stage delivers up to **4.5 A** of fundamental current and sustains a rated motor line current of 4.1 A during continuous operation. Its switching devices operate with a carrier frequency of **4 kHz**, balancing motor current control with switching losses and audible noise. The inverter dissipates approximately 60 W as heat during rated operation, so the cabinet must provide adequate airflow around the heat sink. Thermal protection responds if the

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heat-sink temperature reaches 85 °C, reducing the risk of damage from excessive internal temperature. The permitted ambient operating range extends from -10 °C to 45 °C. Relative humidity may reach 95 percent when the surrounding air remains noncondensing, so the enclosure should prevent moisture accumulation while maintaining sufficient ventilation.

Specifications

Accessory:	Braking Transistor	**Control Mode:**	Standard	**Enclosure Rating:**	IP20
Fieldbus Option:	Standard	**Housing Style:**	Compact D-size	**Input Phases:**	3-Phase
Integrated Accessories:	Braking transistor	**Mains Connection:**	3-phase	**Mains Voltage range:**	305...500 V +/- 0
Max Braking Current:	5 A	**Max Heat Sink Temp:**	85 °C	**Max Mains Fuse:**	10 A
Max Motor Power:	1.5 kW	**Max Short-time Current:**	7.4 A	**Max. rated motor power:**	1.5 kW
Min Braking Resistor:	160 ?	**Nominal Input Current:**	4.5 A	**Oc Tripping Current:**	9 A
Operating temperature:	-10 to 45°C	**Output Nominal Current:**	4.1 A	**Output Nominal Power:**	2.8 kVA
Power Loss:	60 W	**Product Type:**	COMBIVERT F4	**Protection Rating:**	IP20
Rated Operating Frequency:	4 kHz	**Relative humidity (without condensation):**	95%	**Supply Voltage Class:**	400V Class
Switching Frequency:	4 kHz	**Voltage Class:**	400 V- Class	**Last Verified:**	11/06/2026 12:21 AM

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