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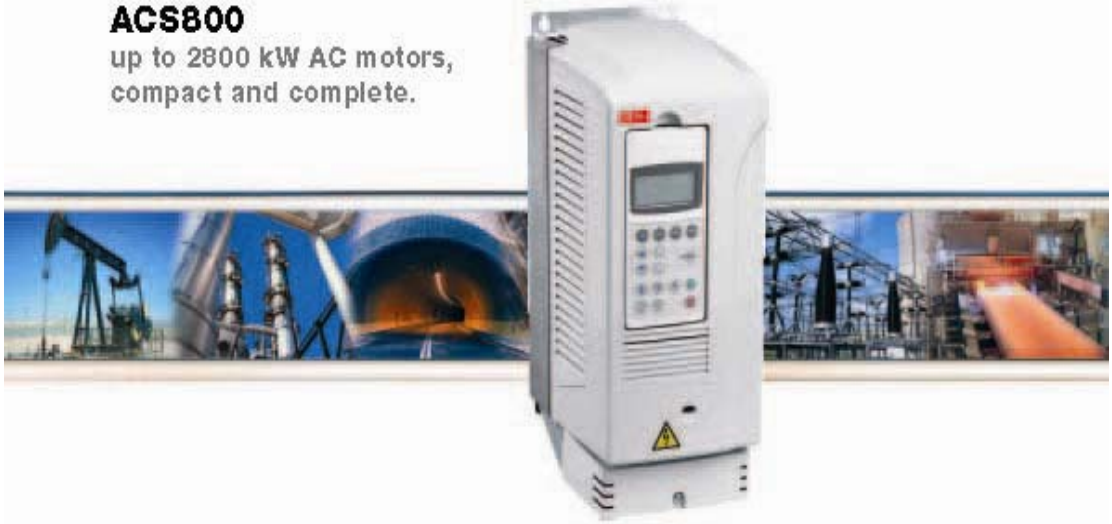
Technical Specification for ACS Family

ACS800

up to 2800 kW AC motors, compact and complete.



Common technology for different applications

One of the main benefits of the ACS800 series is a wide range of drive products with common technologies. This includes Start-up Assistant, Adaptive Programming and DTC, common user and process interfaces, software tools for sizing, commissioning and maintenance and common spare parts.

Premium Technology - DTC

The heart of the ACS800 is DTC - Direct Torque Control, its first class motor control system. The consistently excellent performance of the ACS800 guarantees that the drive is not the limiting factor in your process.

DTC technology is well proven in various applications and demanding environments guaranteeing the high reliability of the drive.

Start-up Assistant

The ABB AC drives have always been top of their class in user-friendliness. The new product series brings a whole new meaning to "user-friendliness". Thanks to the Start-up Assistant, the commissioning and tuning of a high performance drive could not be easier.

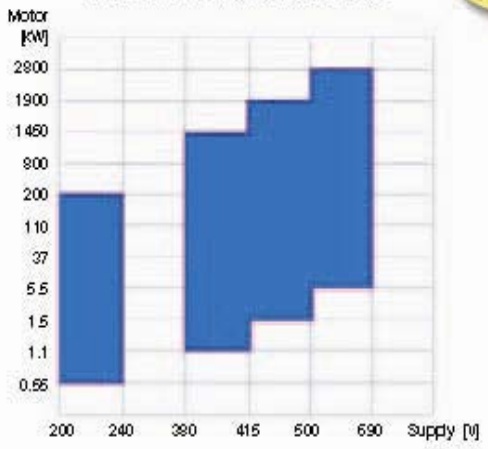
Adaptive Programming

The ACS800 goes one step further compared to normal parameter programming with the addition of Adaptive Programming. It is like having a small PLC inside your drive. Adaptive Programming needs no additional hardware or software but is always there when needed.

Integration and Compact Design

Anything that is required from an AC drive, like EMC and harmonic filters, is inside the drive, so no extra space or cabling is needed. Furthermore, there is always space inside the ACS800 for three option modules for I/O extensions, fieldbuses, pulse encoder interface or a PC connection.

ACS800 voltage power range



Environmentally sound products

ABB is a signatory to the ICC (International Chamber of Commerce) Business Charter for Sustainable Development and is working towards fulfilling its requirements. ABB AC drives follow all 16 ICC principles and the basic function of variable speed drives is to minimize the environmental impact by matching the speed of the driven machine to the actual need in the process. This often means that the environmental load reduction in the process is ten times more than the environmental load caused by the manufacture, transport and disposal of the drives.

The manufacturing of AC drives complies with ISO 14001 standards.

Common software features, please see pages 18 - 20.

Technical specifications for the ACS800-01/-02/-04/-07/-17

Mains connection

3-Phase supply voltage:	U_{2IN} = 208...240 V ± 10% U_{3IN} = 380...415 V ± 10% U_{5IN} = 380...500 V ± 10% U_{7IN} = 525...690 V ± 10%
Frequency:	48...63 Hz
Power factor:	$\cos\varphi_1$ = 0.98 (fundamental) $\cos\varphi$ = 0.93...0.95 (total)
Power factor (ACS800-17):	$\cos\varphi_1$ = 1 (fundamental) $\cos\varphi$ = 0.99 (total)

Efficiency

At nominal power:	
ACS800-0x	98%
ACS800-17	97%

Motor connection

3-Phase output voltage:	0...U_{2IN}/U_{3IN}/U_{5IN}/U_{7IN}
Frequency control:	0...±300 Hz 0...±120 Hz with du/dt filters
Field weakening point:	8...300 Hz
Motor control software:	ABB's Direct Torque Control (DTC)
Torque control:	Torque step rise time:
Open loop	<5 ms with nominal torque
Closed loop	<5 ms with nominal torque
	Non-linearity:
Open loop	±4% with nominal torque
Closed loop	±1% with nominal torque
Speed control:	Static accuracy:
Open loop	10% of motor slip
Closed loop	0.01% of nominal speed
	Dynamic accuracy:
Open loop	0.3...0.4%sec. with 100% torque step
Closed loop	0.1...0.2%sec. with 100% torque step

Environmental limits

Ambient temperature:	
Transportation:	-40...+70°C
Storage:	-40...+70°C
Operation:	-15...+50°C, no frost allowed 40...50°C at reduced output current (1%/1°C).
Operation (ACS800-17):	0...+50°C 40...50°C at reduced output current (1.5%/1°C).
Relative humidity:	5 to 95%, no condensation allowed.
Cooling method:	Dry clean air
Altitude:	0...1000 m without derating 1000...4000 m with derating (690 V units 1000...2000 m with derating)