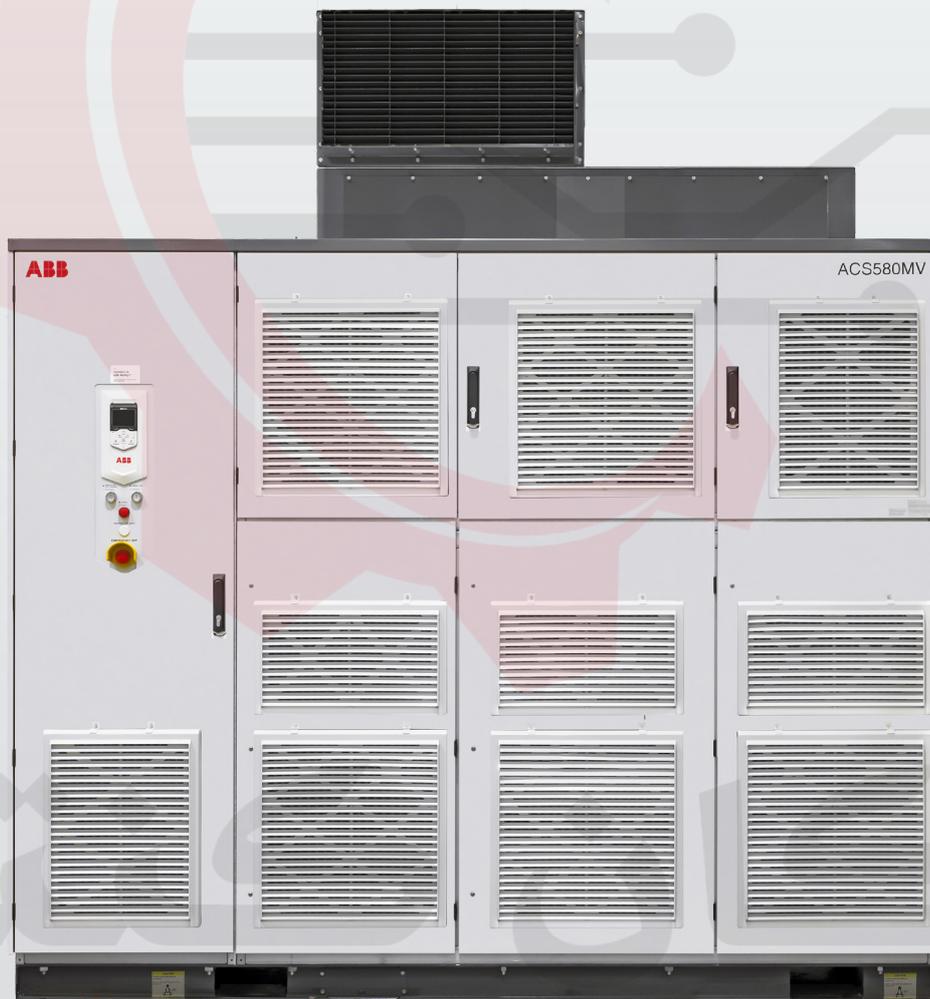


MEDIUM VOLTAGE AC DRIVES

# ABB general performance drives

## ACS580MV

3.3 kV to 11 kV, 200 kW to 6300 kW



—  
**The simplicity you require.  
The efficiency you expect.**



ماكان كنترول

# Table of contents

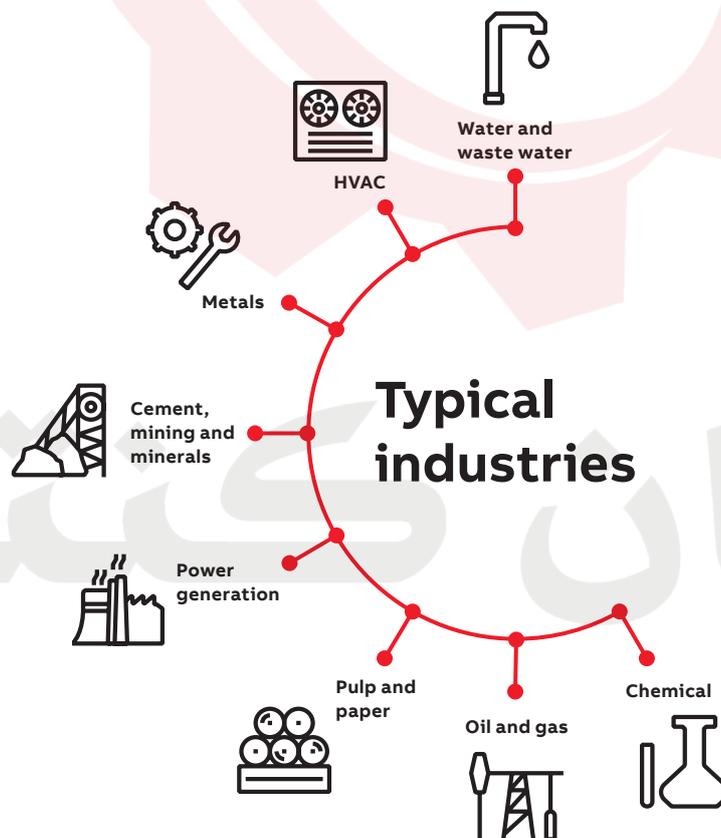
04–05	<b>The all-compatible ACS580MV general performance drive</b>
06–07	<b>Switch on simplicity without trading off efficiency</b>
08	<b>The reliable drive for a broad range of applications</b>
09	<b>How to select a drive</b>
10	<b>Technical data</b>
11	<b>Dimensions</b>
12–15	<b>Ratings, types and voltages</b>
16	<b>Standard interface and extensions for plug-in connectivity</b>
17	<b>Standard software with versatile features</b>
18	<b>Bluetooth connectivity provided by ACS580MV control panel</b>
18	<b>PC tools for drive commissioning and process tuning capabilities</b>
19	<b>Flexible connectivity to automation networks</b>
20	<b>Input/output extension modules for increased connectivity</b>
20	<b>Cabinet options</b>
20	<b>Cooling</b>
21	<b>Safety features</b>
21	<b>Manual bypass feature</b>
21	<b>Specialities</b>
22–23	<b>ABB Ability™ Digital Powertrain</b>
24	<b>Drivetune mobile application for wireless access</b>
25	<b>ABB Access</b>
26	<b>Our service expertise, your advantage</b>
27	<b>ABB Drives Life-cycle Management</b>

# The all-compatible ACS580MV general performance drive

The ACS580MV is part of the all-compatible ABB drive portfolio. It turns complicated to simple while ensuring highest reliability.

The drive controls a wide range of applications in different industries, and yet it requires very little setting up or commissioning. All the essential features are built-in as standard, which reduces the need for additional hardware and simplifies drive selection. The drive is easy-to-use in terms of controlling pumps, fans, compressors, conveyors, mills, extruders as well as many other variable and constant torque applications.

What if you have other requirements? You can select another member of the all-compatible drives portfolio. The drives share the same user interfaces and options, enabling you to use the knowledge you have gained with the ACS580MV drives. You increasingly keep saving time, and saving time in business means saving money.





# Switch on simplicity without trading off efficiency

The drive is easy to select, install and use. Built-in assistant functionality is helpful to easily operate and maintain the drive.

## Simple to operate, safe to use

The standardized interface for fieldbus, I/O's, cable entry and breaker control in combination with emergency off and emergency stop functions ensure easy and safe drive operation.



## Wireless enabled with Bluetooth panel

Control panel's assistants help to set up the drive quickly and effectively, You could easily monitor your drive operation status and fault diagnostic from your mobile devices.

## Boosting energy efficiency

Energy efficiency information helps you monitor and save the energy used in your process. Energy optimizer function allows further energy savings.



After commissioning, the next time you will remember you own the drive is when you take a look at your new, lower energy bill.



**Monitoring and maintenance tool**  
Drive Composer PC tool for configuration, monitoring and process tuning. PC tool is connected to the drive's control panel via USB or Ethernet interface.



**Communication with all major automation networks**  
Fieldbus adapters enable connectivity with all major industrial automation networks.



**Remote monitoring**  
A built-in web server and stand-alone datalogger NETA-21 module enable worldwide and secure access to drives and connectivity to ABB Ability™ condition monitoring services.

**Performance-based reliability**

Advanced diagnostics and warning system enables users to effectively analyze and resolve issues. The power loss ride-through function of the ACS580MV drive ensure reliable and trouble free operation as well as high robustness against weak network performance.

# The reliable drive for a broad range of applications

The cabinet-built ACS580MV general performance drive is designed to control pumps, fans, and many other applications like compressors, conveyors, mills as well as for process control in different industries. The drive is equipped with various features that simplify ordering and delivery, and reduces commissioning costs since everything is provided in a compact package.

## All essential features for reliable operations

The drive features a new generation of cascaded h-bridge technology which, together with the drive's design, provides superior mitigation of harmonics in a compact design. Other built-in features like power loss ride-through ensures reliable and trouble free operation as well as high robustness against weak network performance. Features like IP42, redundant cooling fans and an advanced preventive warning system ensure highest reliability even in harsh industrial environments. The plug-in fieldbus adapter modules enable connectivity with all major automation systems and integrated remote monitoring device enables condition monitoring services and secure remote access to your drive. Other options like manual bypass provide high quality fit-to-purpose feature for ACS580MV targeted industries and applications. The drive and all options have coated boards as standard improving durability in rough surrounding conditions.

## Easy to use control panel and PC tool

The control panel and PC tool provide effective drive operation, monitoring and maintenance. The control panel's straightforward settings menu and many built-in assistants ensure easy usage while the Drive Composer PC tool offers extensive drive monitoring and process tuning capabilities.

## Boosting energy efficiency

The built-in energy efficiency calculators, including used and saved kWh, CO<sub>2</sub> reduction and money saved, help users fine tune processes to ensure optimal energy use.

## ACS580MV goes digital

With ACS580MV control panel, you could connect your drive with your mobile device and simplify the troubleshooting and maintenance tasks.

Remote assistance and condition monitoring is also featured with ACS580MV. You could get rapid response from ABB expert in case of site issue and even preventive failure alert.

ABB Access online tool helps you easily find up-to-date product online data. It also provides easy access to documentation and manuals. If you happen to experience issues with your ABB product, this can be fastly and easily reported online to reach expert support from ABB.



## Shared features of the ABB all-compatible drives portfolio

### Same user interface

The drives follow the same operation logic and yet, there is an optimal drive from the smallest water pump to the biggest cement kiln, and everything in the between. When you have learned to use one drive, it is easy to use other drives in the portfolio.

### Same PC tools

Free Drive Composer entry available at [new.abb.com](http://new.abb.com).

The same parameter structure makes the all-compatible platform easy to use.

### Simple connectivity

- The ACS580MV supports F-series fieldbus adapters used in the ABB all-compatible platform
- Fieldbus settings are made easy with the redesigned simple settings menu
- Mobile phone connectivity via the Bluetooth assistant control panel

# How to select a drive

It is very easy to select the right drive.

**1 Start with identifying your motor voltage.**  
This tells you what rating table to use.  
The ACS580MV currently supports voltage from 3.3 kV to 11 kV. See pages 12-15.

**2 Choose your motor's nominal power rating from the ratings table on.**  
See pages 12-15.

**3 Select your drive's ordering code from the rating table based on your motor's nominal power rating.**

**4 Choose your options and spare part package according to your preference**  
(on pages 19, 20, 21)

ABB MEDIUM VOLTAGE AC DRIVES ACS580MV CATALOG

### Ratings, types and voltages

U <sub>N</sub> = 3.3 kV. The power ratings are valid at constant voltage 3.3 kV.					U <sub>N</sub> = 4.16 kV. The power ratings are valid at constant voltage 4.16 kV.				
Motor power P <sub>N</sub> [kW]	Motor power P <sub>N</sub> [hp]	Motor current I <sub>N</sub> [A]	Type designation	Frame size	Motor power P <sub>N</sub> [kW]	Motor power P <sub>N</sub> [hp]	Motor current I <sub>N</sub> [A]	Type designation	Frame size
115	157	18	ACS580MV-01-001AA-011	3.184	150	202	23	ACS580MV-01-002AA-001	4.1684
185	254	27	ACS580MV-01-002AA-011	3.184	270	364	42	ACS580MV-01-003AA-001	4.1684
300	407	34	ACS580MV-01-003AA-011	3.184	400	539	62	ACS580MV-01-004AA-001	4.1684
450	609	51	ACS580MV-01-004AA-011	3.184	600	812	93	ACS580MV-01-005AA-001	4.1684
600	812	68	ACS580MV-01-005AA-011	3.184	800	1081	125	ACS580MV-01-006AA-001	4.1684
750	1015	85	ACS580MV-01-006AA-011	3.184	1000	1350	153	ACS580MV-01-007AA-001	4.1684
900	1218	102	ACS580MV-01-007AA-011	3.184	1200	1619	181	ACS580MV-01-008AA-001	4.1684
1050	1421	119	ACS580MV-01-008AA-011	3.184	1400	1888	209	ACS580MV-01-009AA-001	4.1684
1200	1624	136	ACS580MV-01-009AA-011	3.184	1600	2157	237	ACS580MV-01-010AA-001	4.1684
1350	1827	153	ACS580MV-01-010AA-011	3.184	1800	2426	265	ACS580MV-01-011AA-001	4.1684
1500	2030	170	ACS580MV-01-011AA-011	3.184	2000	2695	293	ACS580MV-01-012AA-001	4.1684
1650	2233	187	ACS580MV-01-012AA-011	3.184	2200	2964	321	ACS580MV-01-013AA-001	4.1684
1800	2436	204	ACS580MV-01-013AA-011	3.184	2400	3233	349	ACS580MV-01-014AA-001	4.1684
1950	2639	221	ACS580MV-01-014AA-011	3.184	2600	3502	377	ACS580MV-01-015AA-001	4.1684
2100	2842	238	ACS580MV-01-015AA-011	3.184	2800	3771	405	ACS580MV-01-016AA-001	4.1684
2250	3045	255	ACS580MV-01-016AA-011	3.184	3000	4040	433	ACS580MV-01-017AA-001	4.1684

**Motor ratings**  
 P<sub>N</sub> Typical motor power at nominal use.  
 I<sub>N</sub> Continuous current rating at 40°C, allowing 100% for 1 min every 30 min.

ABB MEDIUM VOLTAGE AC DRIVES ACS580MV CATALOG

### Ratings, types and voltages

U <sub>N</sub> = 3.3 kV. The power ratings are valid at constant voltage 3.3 kV.					U <sub>N</sub> = 4.16 kV. The power ratings are valid at constant voltage 4.16 kV.				
Motor power P <sub>N</sub> [kW]	Motor power P <sub>N</sub> [hp]	Motor current I <sub>N</sub> [A]	Type designation	Frame size	Motor power P <sub>N</sub> [kW]	Motor power P <sub>N</sub> [hp]	Motor current I <sub>N</sub> [A]	Type designation	Frame size
115	157	18	ACS580MV-01-001AA-011	3.184	150	202	23	ACS580MV-01-002AA-001	4.1684
185	254	27	ACS580MV-01-002AA-011	3.184	270	364	42	ACS580MV-01-003AA-001	4.1684
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1200	1624	136	ACS580MV-01-009AA-011	3.184	1600	2157	237	ACS580MV-01-010AA-001	4.1684
1350	1827	153	ACS580MV-01-010AA-011	3.184	1800	2426	265	ACS580MV-01-011AA-001	4.1684
1500	2030	170	ACS580MV-01-011AA-011	3.184	2000	2695	293	ACS580MV-01-012AA-001	4.1684
1650	2233	187	ACS580MV-01-012AA-011	3.184	2200	2964	321	ACS580MV-01-013AA-001	4.1684
1800	2436	204	ACS580MV-01-013AA-011	3.184	2400	3233	349	ACS580MV-01-014AA-001	4.1684
1950	2639	221	ACS580MV-01-014AA-011	3.184	2600	3502	377	ACS580MV-01-015AA-001	4.1684
2100	2842	238	ACS580MV-01-015AA-011	3.184	2800	3771	405	ACS580MV-01-016AA-001	4.1684
2250	3045	255	ACS580MV-01-016AA-011	3.184	3000	4040	433	ACS580MV-01-017AA-001	4.1684

**Motor ratings**  
 P<sub>N</sub> Typical motor power at nominal use.  
 I<sub>N</sub> Continuous current rating at 40°C, allowing 100% for 1 min every 30 min.

### Flexible connectivity to automation networks

A Fieldbus enables communication between drives and PLC systems (PLC devices and the process). Fieldbus communication reduces wiring costs when compared with traditional hard-wired input/output connections. Fieldbus systems also offer the ability to gather large amounts of data.

The general purpose drives are compatible with a wide range of Fieldbus protocols. The optional plug-in Fieldbus adapter modules can easily be mounted inside the drive.

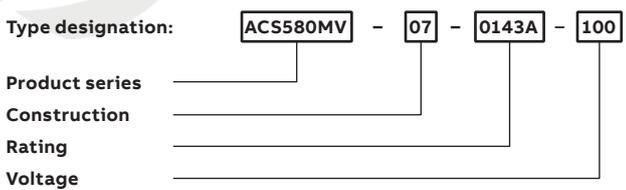
The benefits of fieldbus communication are described below:

- Drive monitoring**  
A set of drive parameters and/or actual signals, such as torque, speed, current, etc., can be selected for cyclic data transfer, providing fast data access.
- Drive diagnostics**  
Accurate and reliable diagnostic information can be obtained through the alarm, limit and fault words, giving easy interfacing with plantwide networks.
- Cabling**  
Substituting the large amount of conventional drive control cabling and wiring with a single cable reduces costs and increases system reliability and flexibility.

**Design**  
The use of Fieldbus control reduces engineering time at installation due to the modular structure of the hardware and software and the simplicity of the connections to the drives.

**Universal communication with ABB Fieldbus adapters**  
The ACS580MV supports the following Fieldbus protocols:

Fieldbus protocol	ABB-01
PROFIBUS-DP	PROFIBUS-DP
Fieldbus adapter	Fieldbus adapter
PROFIBUS-DP	PROFIBUS-DP
PROFIBUS-TCP	PROFIBUS-TCP
MODBUS	MODBUS
DeviceNet	DeviceNet



# Technical data

<b>Mains connection</b>	
Voltage	3.3 to 13.8 kV $\pm 10\%$ , (-25% with reduced power)
Supply frequency	50/60 Hz $\pm 5\%$
Power factor	$\cos\phi \geq 0.96$
Drive system efficiency (at nominal power)	> 96% (Including transformer)
<b>Motor connection</b>	
Voltage	3.3 to 11 kV
Frequency	0 to 120 Hz output, up to 80 Hz nominal motor frequency
Power range	3.3 kV: up to 2000 kW / 4.16 kV: up to 2500 kW / 6 kV: up to 3550 kW / 6.3 kV: up to 3500 kW / 6.6 kV: up to 4000 kW 10 kV: up to 5600 kW / 10.5 kV: up to 6300 kW / 11 kV: up to 6300 kW
Motor control	Scalar and vector control
Torque control	Torque step rise time: < 10 ms with nominal torque, Non-linearity: $\pm 5\%$ with nominal torque
Speed control	Static accuracy: 20% of motor nominal slip Dynamic accuracy: 1% seconds with 100% torque step
Overload	110 % (1 min/10 min)
Maximum motor cable length	1000 m
Output current THD	< 2%
<b>Product compliance</b>	
CE	
GOST-R	
Adjustable speed electrical power drive systems: EMC, IEC 61800-3: 2017	
Adjustable speed electrical power drive systems: General requirements, IEC 61800-4: 2002	
Adjustable speed electrical power drive systems: Safety requirements, IEC 61800-5-1:2007+A1:2016	
Adjustable speed electrical power drive systems: Safety requirements, IEC 61800-5-2: 2007	
Safety of machinery – Electrical equipment of machines: General requirements, IEC 60204-1: 2005	
Safety of machinery – Electrical equipment of machines: Requirements for HV equipment, IEC 60204-11: 2000	
Recommended Practices and Requirements for Harmonic Control in Electrical Power Systems, IEEE 519-1992	
EU RoHS directive 2011/65/EU	
<b>EMC</b>	
According to IEC 61800-3: 2017; IEC 61000-4; EN 61000-6	
<b>Environmental limits</b>	
<b>Ambient temperature</b>	
Storage	-25 to +55 °C
Transport	-45 to +70 °C
<b>Operation</b>	
0 to +40 °C, no frost allowed >40 °C, with derating	
<b>Cooling method</b>	
Air-cooled	Dry clean air
<b>Altitude</b>	
0 to 2,000 m	Without derating
Above 2,000 m	Please contact ABB
<b>Relative humidity</b>	
5 to 95 %, no condensation allowed	
<b>Degree of protection</b>	
IP21 as standard, IP42 as an optional variant	
<b>Contamination levels</b>	
No conductive dust allowed variant	
<b>Storage (excl. UPS)</b>	
IEC 60721-3-1: 2018, Class: 1K22/1B1/1C2/1S11/1M11	
<b>Transportation (excl. UPS)</b>	
IEC 60721-3-2: 2018, Class: 2K12/2B1/2C2/2S5/2M4	
<b>Operation</b>	
IEC 60721-3-3: 2019, Class: 3K22/3B1/3S6/3M11	

\* K = climatic conditions, B = biological conditions,  
C = chemically active substances,  
S = mechanically active substances, and  
M = mechanical conditions

# Dimensions

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
3.3 kV	3.3R4	2821	2530	1198	3010
	3.3R5	2821	2530	1198	3280
	3.3R6	2821	2530	1198	3545
	3.3R7	2571	4630	1398	4780
	3.3R8	2571	4630	1398	5425
	3.3R9	2571	4830	1398	6275

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
4.16 kV	4.16R4	2821	2530	1198	3360
	4.16R5	2821	2530	1198	3620
	4.16R6	2821	2530	1198	4100
	4.16R7	2571	4630	1398	5360
	4.16R8	2571	4630	1398	6020
	4.16R9	2571	4830	1398	7070

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
6 / 6.3 kV	6R1	2571	4030	1198	2900
	6R2	2571	4030	1198	3100
	6R3	2571	4030	1198	3500
	6R4	2571	4030	1198	4000
	6R5	2571	4030	1198	4600
	6R6	2571	4230	1198	5000
	6R7	2571	5630	1398	7100
	6R8	2571	5630	1398	8800
	6R9	2571	5830	1398	9900

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
10 kV	10R1	2571	4030	1198	3300
	10R2	2571	4030	1198	3700
	10R3	2571	4030	1198	4100
	10R4	2571	4430	1198	5100
	10R5	2571	4630	1198	5900
	10R6	2571	4630	1198	6600
	10R7	2571	6630	1398	10100
	10R8	2571	7030	1398	12300
	10R9	2851	7030	1398	13900

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
6.6 kV	6.6R1	2571	4030	1198	3000
	6.6R2	2571	4030	1198	3300
	6.6R3	2571	4030	1198	3700
	6.6R4	2571	4030	1198	4300
	6.6R5	2571	4030	1198	4800
	6.6R6	2571	4230	1198	5600
	6.6R7	2571	6030	1398	7800
	6.6R8	2571	6230	1398	9500
	6.6R9	2571	6630	1398	10700

Voltage Class	Frame size	Height	Width	Depth	Weight
		mm	mm	mm	kg
10.5/11kV	11R1	2571	4030	1198	3500
	11R2	2571	4030	1198	4000
	11R3	2571	4030	1198	4400
	11R4	2571	4630	1198	5600
	11R5	2571	4630	1198	6000
	11R6	2571	4630	1198	7200
	11R7	2571	7430	1398	11200
	11R8	2571	7830	1398	13400
	11R9	2851	7830	1398	14900

# Ratings, types and voltages

## Loadprofile 3.3 kV

$U_N = 3.3$  kV. The power ratings are valid at nominal voltage 3.3 kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
315	422	68	ACS580MV-07-0068A-033	3.3R4
355	476	77	ACS580MV-07-0077A-033	3.3R4
380	509	82	ACS580MV-07-0082A-033	3.3R4
450	603	97	ACS580MV-07-0097A-033	3.3R5
500	670	108	ACS580MV-07-0108A-033	3.3R5
560	751	121	ACS580MV-07-0121A-033	3.3R6
630	845	136	ACS580MV-07-0136A-033	3.3R6
710	952	154	ACS580MV-07-0154A-033	3.3R6
810	1086	175	ACS580MV-07-0175A-033	3.3R7
900	1206	195	ACS580MV-07-0195A-033	3.3R7
1000	1340	217	ACS580MV-07-0217A-033	3.3R7
1120	1501	243	ACS580MV-07-0243A-033	3.3R8
1250	1676	271	ACS580MV-07-0271A-033	3.3R8
1400	1877	303	ACS580MV-07-0303A-033	3.3R8
1500	2011	325	ACS580MV-07-0325A-033	3.3R9
1600	2145	347	ACS580MV-07-0347A-033	3.3R9
1865	2500	404	ACS580MV-07-0404A-033	3.3R9
2000	2681	433	ACS580MV-07-0433A-033	3.3R9

## Loadprofile 4.16 kV

$U_N = 4.16$  kV. The power ratings are valid at nominal voltage 4.16 kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
300	402	52	ACS580MV-07-0052A-040	4.16R4
370	496	64	ACS580MV-07-0064A-040	4.16R4
450	603	77	ACS580MV-07-0077A-040	4.16R4
480	643	82	ACS580MV-07-0082A-040	4.16R4
520	697	89	ACS580MV-07-0089A-040	4.16R5
600	804	103	ACS580MV-07-0103A-040	4.16R5
670	898	115	ACS580MV-07-0115A-040	4.16R6
750	1005	129	ACS580MV-07-0129A-040	4.16R6
870	1166	150	ACS580MV-07-0150A-040	4.16R6
1050	1408	180	ACS580MV-07-0180A-040	4.16R7
1120	1501	192	ACS580MV-07-0192A-040	4.16R7
1250	1676	215	ACS580MV-07-0215A-040	4.16R7
1490	1997	256	ACS580MV-07-0256A-040	4.16R8
1680	2252	289	ACS580MV-07-0289A-040	4.16R8
1750	2346	301	ACS580MV-07-0301A-040	4.16R8
1864	2499	320	ACS580MV-07-0320A-040	4.16R9
2010	2694	345	ACS580MV-07-0345A-040	4.16R9
2300	3083	395	ACS580MV-07-0395A-040	4.16R9
2500	3351	430	ACS580MV-07-0430A-040	4.16R9

## Nominal ratings

$P_N$	Typical motor power at normal use
$I_{2N}$	Continuous current rating at 40°C, allowing 110% $I_{2N}$ for 1 min every 10 min

**Loadprofile 6 kV** $U_N = 6$  kV. The power ratings are valid at nominal voltage 6 kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
200	268	26	ACS580MV-07-0026A-060	6R1
225	302	30	ACS580MV-07-0030A-060	6R2
250	335	34	ACS580MV-07-0034A-060	6R2
280	375	38	ACS580MV-07-0038A-060	6R2
315	422	40	ACS580MV-07-0040A-060	6R2
355	476	49	ACS580MV-07-0049A-060	6R3
400	536	51	ACS580MV-07-0051A-060	6R3
450	603	53	ACS580MV-07-0053A-060	6R3
500	671	64	ACS580MV-07-0064A-060	6R4
560	751	72	ACS580MV-07-0072A-060	6R4
630	845	79	ACS580MV-07-0079A-060	6R4
710	952	88	ACS580MV-07-0088A-060	6R5
800	1073	98	ACS580MV-07-0098A-060	6R5
900	1207	105	ACS580MV-07-0105A-060	6R5
1000	1341	122	ACS580MV-07-0122A-060	6R6
1120	1502	137	ACS580MV-07-0137A-060	6R6
1250	1676	153	ACS580MV-07-0153A-060	6R6
1400	1877	169	ACS580MV-07-0169A-060	6R7
1600	2146	190	ACS580MV-07-0190A-060	6R7
1800	2414	205	ACS580MV-07-0205A-060	6R7
2000	2682	235	ACS580MV-07-0235A-060	6R8
2250	3017	263	ACS580MV-07-0263A-060	6R8
2500	3353	293	ACS580MV-07-0293A-060	6R8
2800	3755	328	ACS580MV-07-0328A-060	6R9
3150	4224	360	ACS580MV-07-0360A-060	6R9
3550	4761	410	ACS580MV-07-0410A-060	6R9

**Loadprofile 6.3 kV** $U_N = 6.3$  kV. The power ratings are valid at nominal voltage 6.3kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
220	295	25	ACS580MV-07-0025A-063	6.3R1
250	335	29	ACS580MV-07-0029A-063	6.3R2
280	375	32	ACS580MV-07-0032A-063	6.3R2
320	429	37	ACS580MV-07-0037A-063	6.3R2
375	503	43	ACS580MV-07-0043A-063	6.3R3
430	576	49	ACS580MV-07-0049A-063	6.3R3
520	697	0060	ACS580MV-07-0060A-063	6.3R4
610	818	0070	ACS580MV-07-0070A-063	6.3R4
700	938	0080	ACS580MV-07-0080A-063	6.3R4
780	1046	0089	ACS580MV-07-0089A-063	6.3R5
870	1166	0099	ACS580MV-07-0099A-063	6.3R5
1000	1340	0114	ACS580MV-07-0114A-063	6.3R6
1150	1542	0131	ACS580MV-07-0131A-063	6.3R6
1300	1743	0147	ACS580MV-07-0147A-063	6.3R6
1450	1944	0165	ACS580MV-07-0165A-063	6.3R7
1600	2145	0182	ACS580MV-07-0182A-063	6.3R7
1750	2346	0198	ACS580MV-07-0198A-063	6.3R7
2000	2681	0227	ACS580MV-07-0227A-063	6.3R8
2300	3083	0261	ACS580MV-07-0261A-063	6.3R8
2600	3485	0296	ACS580MV-07-0296A-063	6.3R8
2900	3887	0330	ACS580MV-07-0330A-063	6.3R9
3200	4290	0364	ACS580MV-07-0364A-063	6.3R9
3500	4692	0398	ACS580MV-07-0398A-063	6.3R9

**Nominal ratings**

$P_N$	Typical motor power at normal use
$I_{2N}$	Continuous current rating at 40°C, allowing 110% $I_{2N}$ for 1 min every 10 min

# Ratings, types and voltages

## Loadprofile 6.6 kV

$U_N = 6.6$  kV. The power ratings are valid at nominal voltage 6.6 kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
250	335	0028	ACS580MV-07-0028A-066	6.6R1
280	375	0031	ACS580MV-07-0031A-066	6.6R2
315	422	0035	ACS580MV-07-0035A-066	6.6R2
390	523	0042	ACS580MV-07-0042A-066	6.6R2
450	603	0049	ACS580MV-07-0049A-066	6.6R3
500	670	0055	ACS580MV-07-0055A-066	6.6R3
580	777	0063	ACS580MV-07-0063A-066	6.6R4
670	898	0073	ACS580MV-07-0073A-066	6.6R4
750	1005	0082	ACS580MV-07-0082A-066	6.6R4
800	1072	0087	ACS580MV-07-0087A-066	6.6R5
900	1206	0098	ACS580MV-07-0098A-066	6.6R5
1000	1340	0109	ACS580MV-07-0109A-066	6.6R5
1150	1542	0125	ACS580MV-07-0125A-066	6.6R6
1300	1743	0141	ACS580MV-07-0141A-066	6.6R6
1500	2011	0163	ACS580MV-07-0163A-066	6.6R6
1650	2212	0179	ACS580MV-07-0179A-066	6.6R7
1800	2413	0195	ACS580MV-07-0195A-066	6.6R7
2000	2681	0217	ACS580MV-07-0217A-066	6.6R7
2250	3016	0244	ACS580MV-07-0244A-066	6.6R8
2500	3351	0271	ACS580MV-07-0271A-066	6.6R8
2700	3619	0293	ACS580MV-07-0293A-066	6.6R8
3100	4155	0336	ACS580MV-07-0336A-066	6.6R9
3600	4826	0390	ACS580MV-07-0390A-066	6.6R9
4000	5362	0435	ACS580MV-07-0435A-066	6.6R9

## Loadprofile 10 kV

$U_N = 10$  kV. The power ratings are valid at nominal voltage 10 kV.

Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
225	302	0017	ACS580MV-07-0017A-100	10R1
250	335	0021	ACS580MV-07-0021A-100	10R1
280	375	0024	ACS580MV-07-0024A-100	10R1
355	476	0026	ACS580MV-07-0026A-100	10R1
400	536	0033	ACS580MV-07-0033A-100	10R2
450	603	0037	ACS580MV-07-0037A-100	10R2
500	671	0039	ACS580MV-07-0039A-100	10R2
560	751	0045	ACS580MV-07-0045A-100	10R3
630	845	0049	ACS580MV-07-0049A-100	10R3
710	952	0052	ACS580MV-07-0052A-100	10R3
800	1073	0062	ACS580MV-07-0062A-100	10R4
900	1207	0069	ACS580MV-07-0069A-100	10R4
1000	1341	0075	ACS580MV-07-0075A-100	10R4
1120	1502	0082	ACS580MV-07-0082A-100	10R5
1250	1676	0091	ACS580MV-07-0091A-100	10R5
1400	1877	0102	ACS580MV-07-0102A-100	10R5
1600	2146	0116	ACS580MV-07-0116A-100	10R6
1800	2414	0130	ACS580MV-07-0130A-100	10R6
2000	2682	0143	ACS580MV-07-0143A-100	10R6
2250	3017	0156	ACS580MV-07-0156A-100	10R7
2500	3353	0176	ACS580MV-07-0176A-100	10R7
2800	3755	0197	ACS580MV-07-0197A-100	10R7
3150	4224	0219	ACS580MV-07-0219A-100	10R8
3550	4761	0247	ACS580MV-07-0247A-100	10R8
4000	5364	0278	ACS580MV-07-0278A-100	10R8
4500	6035	0310	ACS580MV-07-0310A-100	10R9
5000	6705	0340	ACS580MV-07-0340A-100	10R9
5600	7510	0387	ACS580MV-07-0387A-100	10R9

## Nominal ratings

$P_N$	Typical motor power at normal use
$I_{2N}$	Continuous current rating at 40°C, allowing 110% $I_{2N}$ for 1 min every 10 min

Loadprofile 10.5 kV				
$U_N = 10.5$ kV. The power ratings are valid at nominal voltage 10.5 kV.				
Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
280	375	0017	ACS580MV-07-0017A-105	10.5R1
315	420	0022	ACS580MV-07-0022A-105	10.5R1
355	475	0024	ACS580MV-07-0024A-105	10.5R1
390	525	0027	ACS580MV-07-0027A-105	10.5R1
450	605	0031	ACS580MV-07-0031A-105	10.5R2
500	670	0035	ACS580MV-07-0035A-105	10.5R2
580	775	0040	ACS580MV-07-0040A-105	10.5R2
630	845	0043	ACS580MV-07-0043A-105	10.5R3
690	925	0047	ACS580MV-07-0047A-105	10.5R3
750	1005	0051	ACS580MV-07-0051A-105	10.5R3
900	1205	0062	ACS580MV-07-0062A-105	10.5R4
1050	1410	0072	ACS580MV-07-0072A-105	10.5R4
1200	1610	0082	ACS580MV-07-0082A-105	10.5R4
1400	1875	0096	ACS580MV-07-0096A-105	10.5R5
1550	2080	0106	ACS580MV-07-0106A-105	10.5R5
1800	2415	0123	ACS580MV-07-0123A-105	10.5R6
2050	2750	0140	ACS580MV-07-0140A-105	10.5R6
2300	3085	0157	ACS580MV-07-0157A-105	10.5R6
2500	3350	0171	ACS580MV-07-0171A-105	10.5R7
2800	3755	0191	ACS580MV-07-0191A-105	10.5R7
3100	4155	0211	ACS580MV-07-0211A-105	10.5R7
3500	4690	0239	ACS580MV-07-0239A-105	10.5R8
3900	5230	0266	ACS580MV-07-0266A-105	10.5R8
4300	5765	0293	ACS580MV-07-0293A-105	10.5R8
4900	6570	0334	ACS580MV-07-0334A-105	10.5R9
5600	7505	0382	ACS580MV-07-0382A-105	10.5R9
6300	8445	0429	ACS580MV-07-0429A-105	10.5R9

Loadprofile 11 kV				
$U_N = 11$ kV. The power ratings are valid at nominal voltage 11 kV.				
Normal use			Type designation	Frame size
$P_N$ kW	$P_N$ hp	$I_{2N}$ A		
250	335	0017	ACS580MV-07-0017A-110	11R1
280	375	0019	ACS580MV-07-0019A-110	11R1
315	422	0021	ACS580MV-07-0021A-110	11R1
385	516	0025	ACS580MV-07-0025A-110	11R1
450	603	0030	ACS580MV-07-0030A-110	11R2
510	684	0034	ACS580MV-07-0034A-110	11R2
585	784	0038	ACS580MV-07-0038A-110	11R2
630	845	0041	ACS580MV-07-0041A-110	11R3
710	952	0046	ACS580MV-07-0046A-110	11R3
800	1072	0052	ACS580MV-07-0052A-110	11R3
950	1273	0062	ACS580MV-07-0062A-110	11R4
1100	1475	0072	ACS580MV-07-0072A-110	11R4
1250	1676	0082	ACS580MV-07-0082A-110	11R4
1400	1877	0091	ACS580MV-07-0091A-110	11R5
1550	2078	0102	ACS580MV-07-0102A-110	11R5
1800	2413	0117	ACS580MV-07-0117A-110	11R6
2050	2748	0134	ACS580MV-07-0134A-110	11R6
2350	3150	0153	ACS580MV-07-0153A-110	11R6
2600	3485	0170	ACS580MV-07-0170A-110	11R7
2850	3820	0186	ACS580MV-07-0186A-110	11R7
3150	4223	0205	ACS580MV-07-0205A-110	11R7
3600	4826	0235	ACS580MV-07-0235A-110	11R8
4100	5496	0267	ACS580MV-07-0267A-110	11R8
4600	6166	0300	ACS580MV-07-0300A-110	11R8
5100	6836	0332	ACS580MV-07-0332A-110	11R9
5700	7641	0370	ACS580MV-07-0370A-110	11R9
6300	8445	0410	ACS580MV-07-0410A-110	11R9

#### Nominal ratings

$P_N$	Typical motor power at normal use
$I_{2N}$	Continuous current rating at 40°C, allowing 110% $I_{2N}$ for 1 min every 10 min

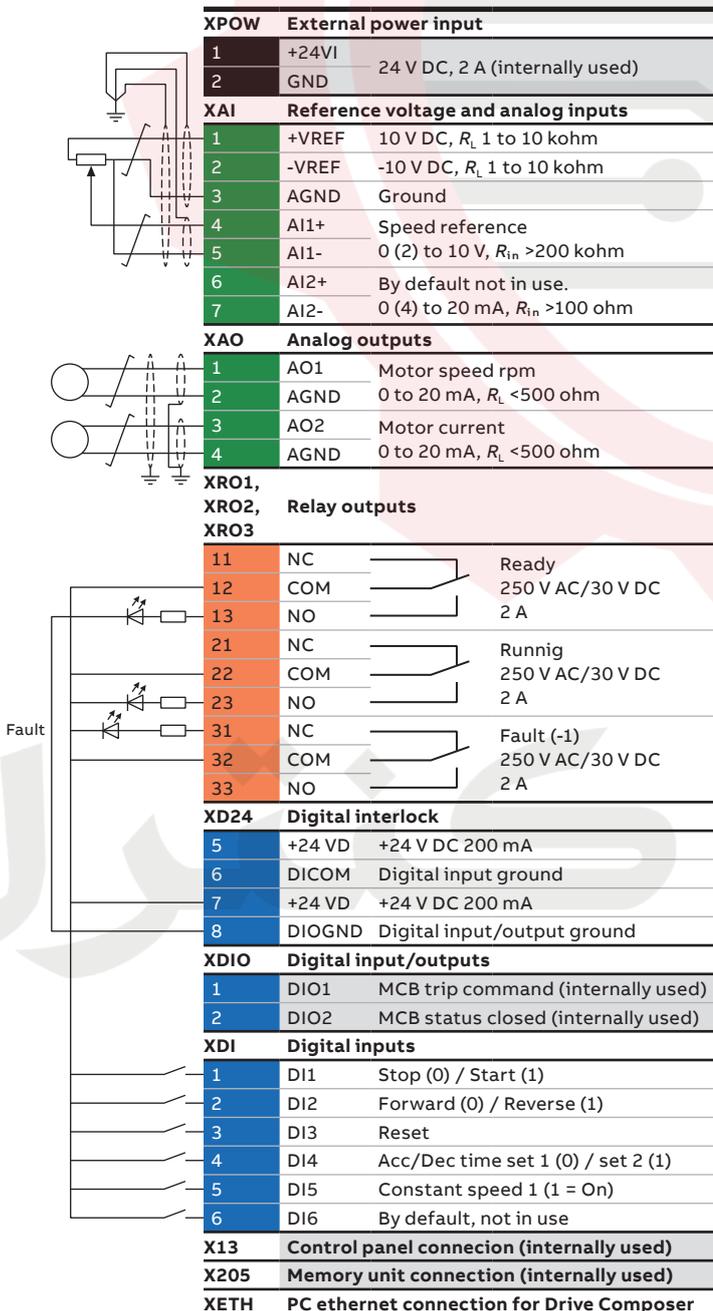
# Standard interface and extensions for plug-in connectivity

The ACS580MV drives offer a wide range of standard interfaces. In addition, the drive has two option slots that can be used for extensions including fieldbus adapter modules and input/output extension modules. Predefined macros enable easy and fast configuration of customer I/O's. ACS580MV offers following 3 macros and configurations in standard which support most frequently used application requirements like sequential control for retrofit.



## Central controller

Default control connections for the factory macro



## Customer interface terminal block

X1 Customer interface terminal block	
1	MCB close cmd
3	Floating contacts to customer
5	Making capability: 40 A
7	Thermal current: $I_{th} = 6 A @ 40 ^\circ C$
9	MCB open cmd
11	Breaking capability:
13	AC-15 50 Hz $I_e$ (240 V) = 4 A, $I_e$ (500 V) = 2 A
15	DC-13 $I_e$ (24 V) = 2.5 A, $I_e$ (110 V) = 0.7 A,
17	$I_e$ (240 V) = 0.4 mA
19	MCB trip/
21	unlock cmd 1
23	Minimum load: 17 V, 5 mA
25	Isolation rated voltage 690 V AC
27	MCB closed status
29	Connect contact from customer
31	Internal supply 24 V DC, 5 mA
33	MCB open status
35	Connect contact from customer
37	Internal supply 24 V DC, 5 mA,
41	max resistance 140 ohm
43	MCB ready status
45	Connect contact from customer
47	Internal supply 24 V DC, 5 mA
53	Emergency off 1
55	Connect contact from customer
57	Max resistance 60 ohm
59	Emergency off 2
61	Emergency off 2 Internal supply,
62	24 V DC, 25 mA
63	Remote MCB close cmd
64	Connect contact from customer
65	Internal supply 24 V DC, 5 mA
66	Remote MCB open cmd
67	Switchover
68	Alarm
	RO, NC/NO can be selective,
	250 V AC/24 V DC, 2 A
	Emergency off reset
	Optional, NC Connect contacts from
	customer
	24 V DC
	24 V DC for digit input

# Standard software with versatile features

## Commissioning faster than ever before

The DriveStartup tool has a clear, intuitive and visually advanced interface as well as different assistants to make the drive simple to set up. This saves on commissioning time.

## Sophisticated process control

The ACS580MV drives offer sophisticated process control in scalar and vector control modes for induction motors. Many embedded protection and other features improve performance of the motor and process.

## Flying start

Flying start is available for both scalar and vector control modes. The drive catches a running motor which is often required in applications with long freewheeling times, such as in fan applications.

## Load profile

The load profile feature collects drive values such as current to a log. The log shows how the drive is operating and enables you to analyze and optimize the application.

## PID built-in

Built-in and stand-alone PID makes the ACS580MV a selfgoverning unit that requires no external logic input from the control room, but requires only an external process measurement.

## Optimizing energy use

The ACS580MV drives come with features that help you save and manage energy. You can monitor the hourly, daily and cumulative energy consumption via kWh counters. When the drive replaces a direct-online control, you can follow the saved energy, CO<sub>2</sub> emissions or money, and see how fast the drive brings you a return on investment.

## Easy diagnostics for trouble-free operation

The control panel's and Drive Composer PC tool's diagnostics menu enables you to effectively analyze and resolve issues. You can quickly analyze why the drive is performing as it is; running, stopped or running at the present speed. Active faults, warnings and event logs are shown in the menu. The menu shows if there are any active limitations to the drive operation and gives instructions on how to resolve them. The entry level Drive Composer PC tool is available for free via the ABB website.



# Bluetooth connectivity provided by ACS580MV control panel

## Smooth navigation and process tuning

The control panel is equipped with context-sensitive soft keys and four-direction navigation enabling you to quickly browse and adjust the drive settings. Many flexible data visualizations including bar charts, histograms and trend graphs help you analyze the process. With the panel's text editor, you can for example add information to I/O signals or customize fault and warning messages. You can also label the drive with a unique name.

## Bluetooth control panel

The standardized bluetooth panel for ACS580MV enables customers to monitor the drive operation status and fault diagnostics.

## Easy drive maintenance

Powerful backup and restore functions (with name, date and content) are supported as well as different language versions. Faults or warnings are quickly resolved as the help key provides context sensitive guidance and troubleshooting instructions.



Bluetooth control panel

# PC tools for drive commissioning and process tuning capabilities

The free version of the Drive Composer PC tool provides monitoring and maintenance capabilities, while the professional version provides additional features such as custom parameter windows, control diagrams of the drive's configuration and improved monitoring and diagnostics.

The Drive Composer tool is connected to the drive using the USB connection on the assistant control panel or an Ethernet connection on the drive. All drive information such as parameter loggers, faults, backups and event lists are gathered into a support diagnostics file. This provides faster fault tracking, shortens downtime and reduces operational and maintenance costs.

## Drive Composer pro offers extended functionality

Drive composer pro provides the same standard functionality as the free version, including parameter settings, downloading and uploading files and search parameters. Advanced features such as graphical control diagrams and various

displays are also available. The control diagrams save users from browsing long lists of parameters and help to set the drive's logic quickly and easily. The tool has fast monitoring capabilities of multiple signals from several drives in a PC tool network. Full backup and restore functions are also included.



# Flexible connectivity to automation networks

A fieldbus enables communication between drives and PLC systems, I/O devices and the process. Fieldbus communication reduces wiring costs when compared with traditional hard wired input/output connections. Fieldbus systems also offer the ability to gather large amounts of data.

The general performance drives are compatible with a wide range of fieldbus protocols. The optional plug-in fieldbus adapter modules can easily be mounted inside the drive.

The benefits of fieldbus communication are described below.

## Drive monitoring

A set of drive parameters and/or actual signals, such as torque, speed, current, etc., can be selected for cyclic data transfer, providing fast data access.

## Drive diagnostics

Accurate and reliable diagnostic information can be obtained through the alarm, limit and fault words, giving easy interfacing with plantwide HMIs.

## Cabling

Substituting the large amount of conventional drive control cabling and wiring with a single cable reduces costs and increases system reliability and flexibility.

## Design

The use of fieldbus control reduces engineering time at installation due to the modular structure of the hardware and software and the simplicity of the connections to the drives.

## Universal communication with ABB fieldbus adapters

The ACS580MV supports the following fieldbus protocols:

### Fieldbus adapter modules

Fieldbus (2 slot available for I/O extension or fieldbus adapter)

Fieldbus adapter	Option
PROFIBUS-DP adapter	FPBA-01
Modbus adapter	FSCA-01
EIP	FEIP-21
Modbus/TCP	FMBT-21
PROFINET	FPNO-21
DeviceNet	FDNA-01



# Input/output extension modules for increased connectivity

Standard input and output can be extended by using optional analog and digital input/output extension modules. The modules are easily installed in the extension slots located on the main controller.

Typical functions like motor fan on/off can be easily configured by using FIO-11 and FIO-01 modules.

### Analog and digital input/output extension modules

Connections	Options
4 x DI/O, 2 x RO	FIO-01
3 x AI (mA/V), 1 x AO (mA), 2 x DI/O	FIO-11
2 x AI (mA/V), 2 x AO (mA)	FAIO-01

# Cabinet options

The ACS580MV is available with IP42 protection class, thus ensuring a reliable operation of the drive even under harsh environmental conditions.

As an option, the ACS580MV can be equipped with a cabinet heater that prevents humidity condensation inside the cabinet when the drive is not powered such as during plant maintenance or drive shut down time.

The optional low power auxiliary supply package does not require 380 V power supply and is the ideal solution in order to ensure safe line control power supply using customer UPS. This option is also available with a built-in UPS which is recommended in case of an unreliable auxiliary supply.

Cabinet option	Description
Converter cabinet and motor space heater	Additional external 220-240 V power supply required
Low power aux supply package	External single phase supply 100-240 V AC or 90-350 V DC, 3 phase fan supply from internal main transformer. Ideal for safe line control power supply.
Low power aux supply package + int. UPS	External single phase supply 100-240 V AC or 90-350 V DC and internal UPS (~15 min), 3 phase fan supply from internal main transformer. Ideal for high availability in case of unreliable aux. supply.

# Cooling

The ACS580MV is fitted with cooling air fans. The cooling air must be free from corrosive materials, humidity and dust. The air temperature should not be above the maximum ambient temperature of 40 °C (50 °C with derating). Before installation please check the information in the technical datasheets.

Optional redundant cooling fans ensure an automatic switch to an additional fan in case of

cooling problems and guarantee highest reliability in the process operation. Furthermore, a special interface for the fan box is optional available in order to attach an air duct to the drive cabinet.

Cooling option
Redundant cooling fans
Fanbox for air duct connection

## Safety features

The integrated emergency off safety function for machine operators and is optionally available with safety integrity level and performance level certification.

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### Safety feature

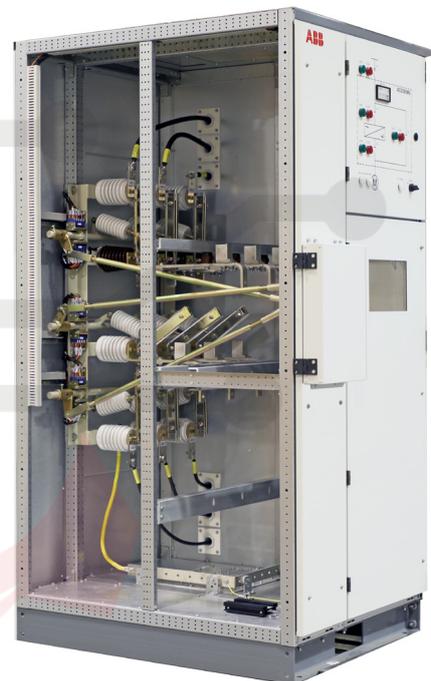
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Emergency off, Category 0 with opening main contactor/breaker (SIL/PL)

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## Manual bypass feature

Enable highest availability of any application that operate direct-on-line (DOL). Risk management for customer retrofitting existing DOL motors with drives.



## Specialities

Special environmental conditions and applications require a need-oriented selection and configuration of the drives. The ACS580MV offers a wide range of specialties which can be selected and might determine derating of the drive.

Different supply main voltage than drive output voltage is optionally available and covered by integrated transformer. Extreme environmental conditions such as extended ambient temperature or a high altitude need special consideration when configuring the drive and may have an impact on the cabinet size.

# ABB Ability™ Digital Powertrain

## Condition monitoring for powertrains



Accurate, real-time information about powertrain events. When you have the facts, you can make the right decisions.

ABB Ability™ Condition Monitoring for powertrains gives you self-service access to the ABB Ability™ Digital Powertrain portal. It provides real-time, fact-based insight into your powertrain assets, such as drives and motors, via KPIs and signal data, to identify irregularities before they become problems. This helps you make proactive decisions, built on real-time information – and saves you money!

### The service can be tailored to fit your needs

Our standard package gives you industry leading monitoring capabilities – whether you want to view the drive status through ABB's Internet portal or integrate this data with your existing monitoring systems.

### The standard package includes the following services:

- Self-service condition monitoring
- Alarm Management
- Asset Health
- Team Support
- Backup Management

### The standard package can be supplemented with optional services:

- Offline Data Collection
- Expert Reports
- Remote Assistance
- Plug & Play Connectivity
- Monitoring Service



### Solid fact-based decision making

Get the facts, and the history, to help run your operations better and more safely.



### Always stay one step ahead of problems

Recognize early signs of possible failures and assess the risks, before they turn into serious operational issues.



### Find the root cause of process issues

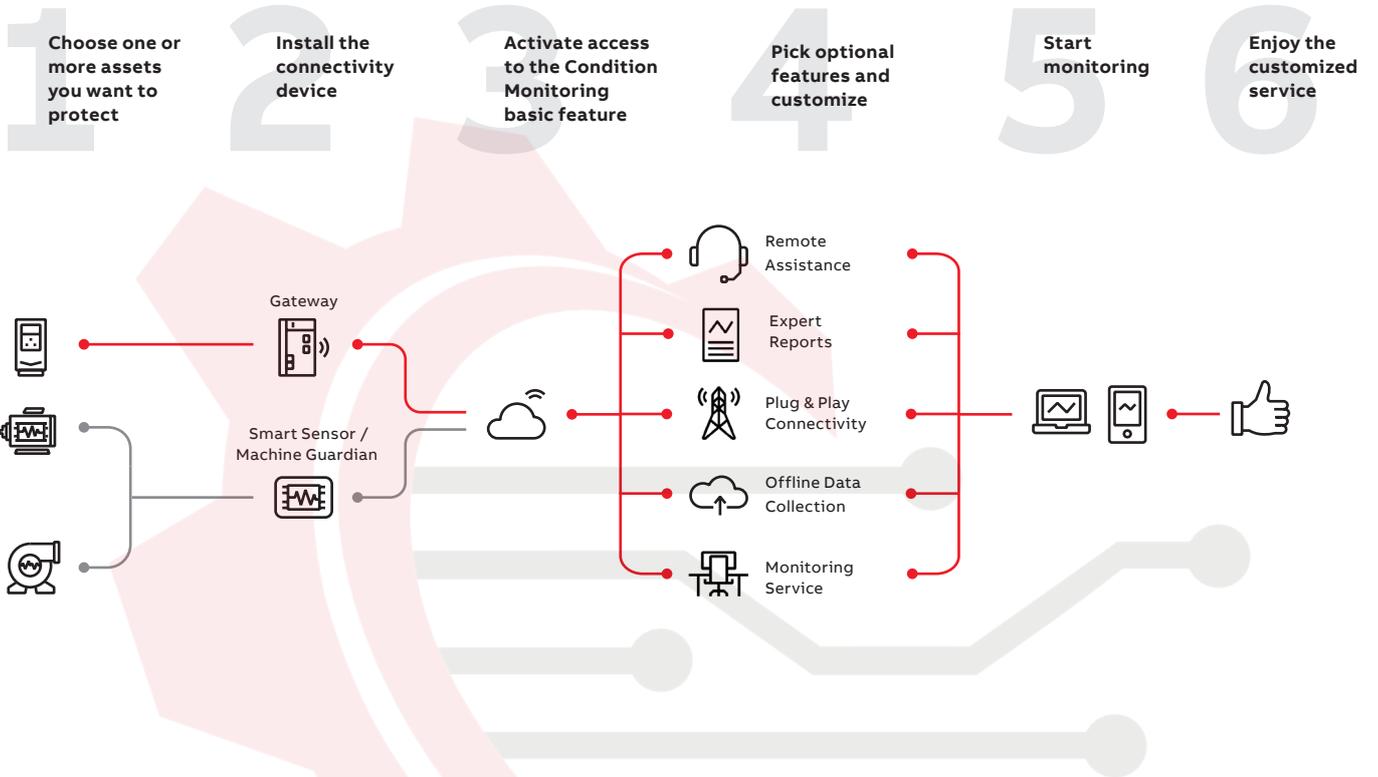
Remotely access data from ABB drives built-in sensors to track the cause of problems. Get back to smooth operation quickly with data back-ups.



### Remotely analyze and optimize drives

Get critical drive information anywhere anytime – even in difficult to access sites, or when a site visit is impossible.

## Customers can configure powertrains and customize the digital service plan



# Drivetune mobile application for wireless access

User-friendly experience with Bluetooth connectivity.

**Drivetune mobile app** is a powerful tool for performing basic drive startup and troubleshooting tasks. It is possible to connect with drives and access data available in the Internet at the same time. The wireless Bluetooth

connectivity means that users do not need to enter hazardous or difficult-to-reach work areas to access information necessary to help them commission and tune the drive.



Start up, commission and tune your drive and application with full parameter access

Optimize performance via drive troubleshooting features

Create and share backups and support packages

Keep track of drives installed base

**ABB Ability™ Mobile Connect** for drives is a module in the Drivetune app. It gives you the access to the technical support for fast problem solving. Mobile Connect makes all the necessary data instantly available to the expert, providing support.

Remote and rapid access to ABB's drive experts can save you and your team considerable time, money and headaches. Check Mobile Connect availability in your country.



Download Drivetune



Drivetune for commissioning and managing drives

# ABB Access

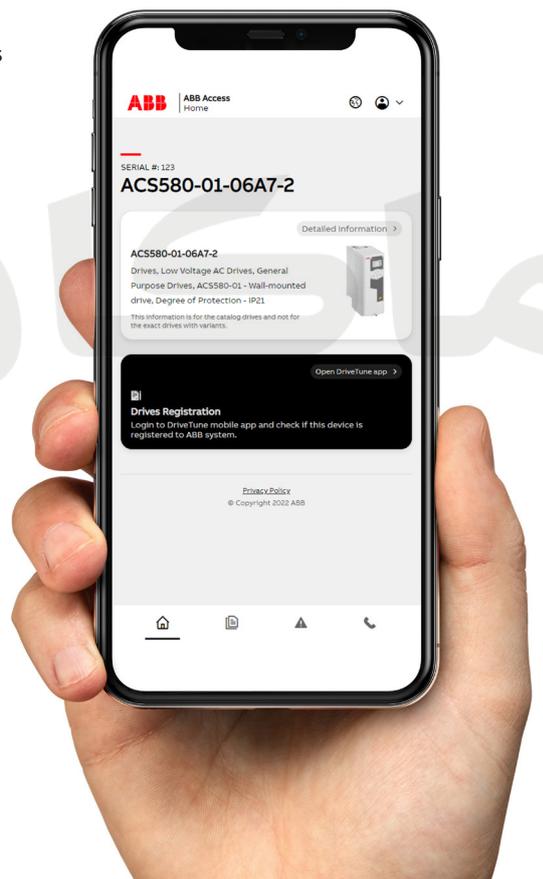
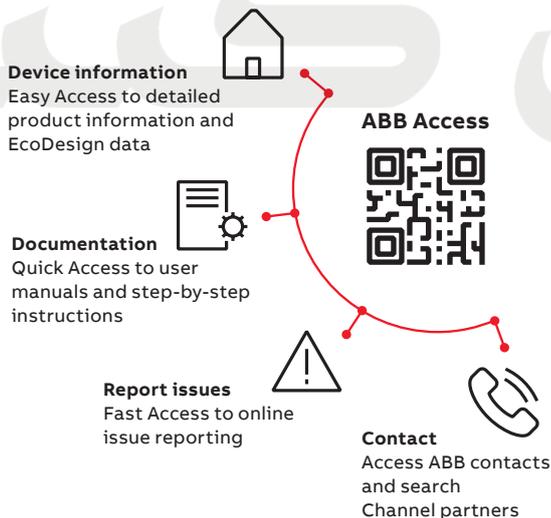
Scan the QR code to access 24/7 self-services for ABB drives, motors and PLCs

With ABB Access, you can unlock all aspects of your drives, motors or PLCs, from one central location: the palm of your hand.



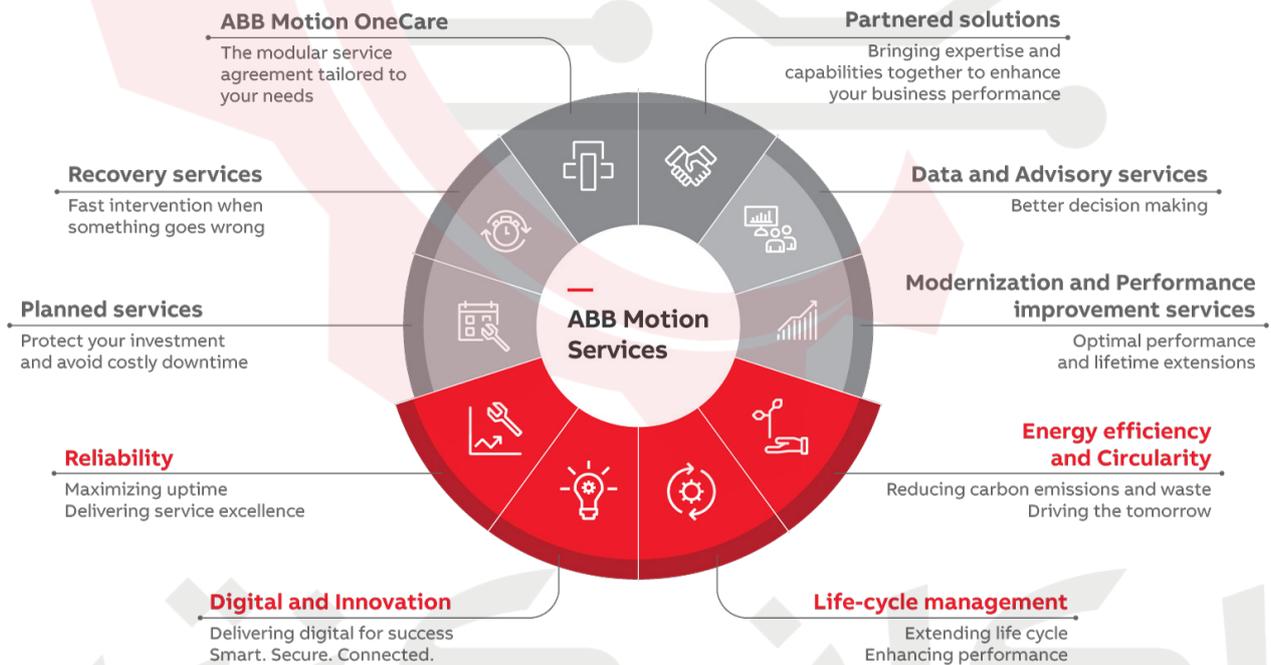
## Simply scan the QR code on the ABB product to get started

ABB Access, helps you easily find up-to-date product online data. It also provides easy access to documentation and manuals. If you happen to experience issues with your ABB product, this can be fastly and easily reported online to reach expert support from ABB.



# ABB Motion Services

ABB Motion Services helps customers around the globe by maximizing uptime, extending product life-cycle, and enhancing the performance and energy efficiency of electrical motion solutions. We enable innovation and success through digitalization by securely connecting and monitoring our customers' motors and drives, increasing operational uptime, and improving efficiency. We make the difference for our customers and partners every day by keeping their operations running profitably, safely and reliably.



**OUR EXPERTISE**  
**YOUR ADVANTAGE**

# A lifetime of peak performance

You're in control of every phase of the life of your drive. At the heart of drive services is a four-phase product life-cycle management model. This model defines the services recommended and available throughout your drive's lifespan.

Now it's easy for you to see the exact service and maintenance available for your drives.

## ABB drives life-cycle phases explained:



Full range of life-cycle services and support	Limited range of life-cycle services and support	Replacement and end-of-life services
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Services	Full range of life-cycle services is available.	Full range of life-cycle services is available. Product enhancements may be available through upgrade and retrofit solutions.	Limited range of life-cycle services is available. Spare parts availability is limited to available stock.	Replacement and end-of-life services are available.
	Product	Product is in active sales and manufacturing phase.	Serial production has ceased. Product may be available for plant extensions, as a spare part or for installed base renewal.	Product is no longer available.

### Keeping you informed

We notify you every step of the way using life-cycle status statements and announcements.

The benefit for you is clear information about the status of your drives and the exact services available. It helps you plan the preferred service actions ahead of time and make sure that continuous support is always available.

### Step 1

#### Life-cycle Status Announcement

Provides early information about the upcoming life-cycle phase change and how it affects the availability of services.

### Step 2

#### Life-cycle Status Statement

Provides information about the drive's current life-cycle status, the availability of product and services, the life-cycle plan, and recommended actions.



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For more information, please contact  
your local ABB representative or visit

**[new.abb.com/drives](https://new.abb.com/drives)**  
**[new.abb.com/drives/drivespartners](https://new.abb.com/drives/drivespartners)**  
**[new.abb.com/motors-generators](https://new.abb.com/motors-generators)**

ACS580MV product website



ACS580MV product animation video



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