Application Notes

11/2020

Drives & Soft Starters

List of Application Notes

Powering Business Worldwide

Content

Latest Updates:

New Application Note for Rapid Link

➔ Generation Change RA-SP 2 to RASP5

1 General

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040043EN	Electromagnetic compatibility (EMC) • EMC compatible setup • EMC from directives' and standards' point of view • When are additional measures required / reasonable • Checklist EMC	X						
AP040114EN	Dual Rating – What exactly does that mean?	X						
AP040169EN	Connecting drives to generator supplies • Technical aspects for a reliable operation	X						

2 9000X

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040044EN	Variable Frequency Drives with a common DC bus SPI9000 – Application and selection		X					

3 DA1

No	Title / Content	General	9000X	DA1	DC1	DC1...E1	DE1	DG1
AP040016EN	How does the internal motor protection work? • how the motor protection works • Dependency between current and tripping time • Determination of the recovery time after an overload			X	X	X	X	
AP040018EN	Motor data – Motor Protection – V/f curves for induction motors • Selection of the motor control mode • Adaptation to the connected motor • Slip compensation • Motor protection • Setting the V/f curve • Energy optimization			X				
AP040021EN	Access to Parameter Level 2 and 3 – Parameter Lock – RESET • Access to parameter level 2 and level 3 • how to mask out parameters • how to prevent a parameter value change • how to restore the factory / application specific settings (Default)			X				
AP040022EN	The OP System Bus – Parameterizing – Control • Structure of the hardware • Bus configuration • Handling at parameterization and control			X	X	X	X	
AP040023EN	Equal load sharing with the droop function • description of the droop function • application example			X				
AP040025EN	PID controller • function of the specific parameters • mode of operation • application examples			X				
AP040026EN	Master slave operation • functionality • configuration • application examples			X				
AP040028EN	Vector Control of Induction Motors • Selection of the motor control mode • Adaptation to the connected motor • Speed Control (Open Loop Vector) • Speed Control with Encoder (Close loop Vector) • Torque Control • Trouble Shooting			X				

No	Title / Content	General	9000X	DA1	DC1	DC1...E1	DE1	DG1
AP040030EN	Starting, Stopping and Operation • different possibilities at starting and stopping • respective control commands • setting of the relevant parameters • behaviour in case of fault • measures to prevent unintended trips			X				
AP040031EN	Use of multiple ramps • general functionality • configuration of the device depending on the required number of ramps and the ramp mode			X				
AP040032EN	Hoist applications • general functionality • parameter setting • examples			X				
AP040034EN	I/O Configuration • input and output terminals • I/O extension • Technical data • Assignment of functions to terminals • Configuration of the I/Os •			X				
AP040039EN	Dependency of the output current on switching frequency and ambient temperature			X				
AP040040EN	Setpoint Setting • Different ways of set point setting • Handling of the references • User specific configuration possibilities			X				
AP040047EN	Closed Loop Vector Control • Speed control with feedback • Connection • Parameter settings • debugging AP040047EN_DA1_Closed_Loop_Vector_Control			X				
AP040051EN	Operating Permanent Magnet and Brushless DC Motors • Selection of the motor control mode • Adaptation to the connected motor • Optimization of the application • Trouble shooting • Example: PM motor settings			X				

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040182EN	Conformal Coating • Benefits from Conformal Coating • Eaton Use • Variation & limitations • Relevant standards & Conclusions 1.			X	X	X	X	
AP040183EN	Low Temperature Applications • Basics • Applications • Self-heat function • Drive configuration • Typical application 2.			X	X	X		
AP040189EN	DX-COM-STICK3_Connection • Connect to a PC • Connect with drivesConnect mobile app • Offline parameter copy • Boot-Sequence and Unlocking			X	X	X	X	
AP040190EN	Update DX-COM-STICK3 • Connect to a PC • Enter Firmware Update Mode • Update			X	X	X	X	

4 DC1

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040014EN	Motor data – Motor Protection – V/f curves – Slip Compensation • Adaptation to the connected motor • Slip compensation • Motor protection • Setting the V/f curve • Energy optimization				X			
AP040015EN	Access to Parameter Level 2 – Parameter Lock – Load Default • Access to parameter level 2 • how to prevent a parameter value change • how to restore the factory settings (Default)				X			

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040016EN	How does the internal motor protection work? • how the motor protection works • Dependency between current and tripping time • Determination of the recovery time after an overload			X	X	X	X	
AP040022EN	The OP System Bus – Parameterizing – Control • Structure of the hardware • Bus configuration • Handling at parameterization and control			X	X	X	X	
AP040024EN	PI controller • function of the specific parameters • mode of operation • application examples				X			
AP040027EN	Starting, Stopping and Operation • different possibilities at starting and stopping • respective control commands • setting of the relevant parameters • behaviour in case of fault • measures to prevent unintended trips				X			
AP040035EN	I/O Configuration • input and output terminals • I/O extension • Technical data • Assignment of functions to terminals • Configuration of the I/Os				X			
AP040037EN	Operating Single Phase Motors • Specialties of DC1-S…. and their application				X	X		
AP040038EN	Dependency of the output current on switching frequency and ambient temperature				X			
AP040041EN	Set Point Setting • Different ways of set point setting • Handling of the references				X			
AP040182EN	Conformal Coating • Benefits from Conformal Coating • Eaton Use • Variation & limitations • Relevant standards & Conclusions			X	X	X	X	
AP040183EN	Low Temperature Applications • Basics • Applications • Self-heat function • Drive configuration • Typical application			X	X	X		

No	Title / Content	General	9000X	DA1	DC1	DC1...E1	DE1	DG1
AP040189EN	DX-COM-STICK3_Connection • Connect to a PC • Connect with drivesConnect mobile app • Offline parameter copy • Boot-Sequence and Unlocking			X	X	X	X	
AP040190EN	Update DX-COM-STICK3 • Connect to a PC • Enter Firmware Update Mode • Update			X	X	X	X	

5 DC1…E1

No.	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040016EN	How does the internal motor protection work? • how the motor protection works • Dependency between current and tripping time • Determination of the recovery time after an overload			X	X	X	X	
AP040022EN	The OP System Bus – Parameterizing – Control • Structure of the hardware • Bus configuration • Handling at parameterization and control			X	X	X	X	
AP040037EN	Operating Single Phase Motors • Specialties of DC1-S…. and their application				X	X		
AP040049EN	Motor data – Motor Protection – V/f curves – Slip Compensation • Adaptation to the connected motor • Slip compensation • Motor protection • Setting the V/f curve • Energy optimization • Preset applications					X		
AP040052EN	Access to Parameter Levels 2 + 3 – Parameter Lock – Load Default • Access to parameter levels 2 and 3 • how to prevent a parameter value change • how to restore the factory settings (Default)					X		
AP040053EN	PI controller • function of the specific parameters • mode of operation • application examples					X		
AP040054EN	Starting, Stopping and Operation • different possibilities at starting and stopping • respective control commands • setting of the relevant parameters • behaviour in case of fault • measures to prevent unintended trips					X		

No.	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040057EN	I/O Configuration • input and output terminals • I/O extension • Technical data • Assignment of functions to terminals • Configuration of the I/Os					X		
AP040059EN	Dependency of the output current on switching frequency and ambient temperature					X		
AP040060EN	Set Point Setting • Different ways of set point setting • Handling of the references					X		
AP040063EN	Operating Permanent Magnet and Brushless DC Motors • Selection of the motor control mode • Adaptation to the connected motor • Optimization of the application • Trouble shooting • Example: PM motor settings					X		
AP040064EN	Fire Mode • Configuration • How does DC1…E1 work in Fire Mode?					X		
AP040182EN	Conformal Coating • Benefits from Conformal Coating • Eaton Use • Variation & limitations • Relevant standards & Conclusions			X	X	X	X	
AP040183EN	Low Temperature Applications • Basics • Applications • Self-heat function • Drive configuration • Typical application			X	X	X		
AP040189EN	DX-COM-STICK3_Connection • Connect to a PC • Connect with drivesConnect mobile app • Offline parameter copy • Boot-Sequence and Unlocking			X	X	X	X	
AP040190EN	Update DX-COM-STICK3 • Connect to a PC • Enter Firmware Update Mode • Update			X	X	X	X	

6 DE1

No	Title / Content	General	9000X	DA1	DC1	DC1...E1	DE1	DG1
AP040016EN	How does the internal motor protection work? • how the motor protection works • Dependency between current and tripping time • Determination of the recovery time after an overload			X	X	X	X	
AP040017EN	Motor data – Motor Protection – V/f curves – Slip Compensation • Adaptation to the connected motor • Slip compensation • Motor protection • Setting the V/f curve • Energy optimization						X	
AP040020EN	Access to Parameter Level 2 – Parameter Lock – Load Default • Access to parameter level 2 • how to prevent a parameter value change • how to restore the factory settings (Default)						X	
AP040022EN	The OP System Bus – Parameterizing – Control • Structure of the hardware • Bus configuration • Handling at parameterization and control			X	X	X	X	
AP040029EN	Starting, Stopping and Operation • different possibilities at starting and stopping • respective control commands • setting of the relevant parameters • behaviour in case of fault • measures to prevent unintended trips						X	
AP040033EN	Quick-Start-Guide DE11 • Brief description • Parameter List						X	
AP040036EN	I/O Configuration • Input and output terminals • Technical data • Assignment of functions to terminals • Configuration of the I/Os						X	

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040042EN	Set Point Setting • Different ways of set point setting • Handling of the references						X	
AP040092EN	Quick-Start-Guide DE1 • Brief description • Parameter List						X	
AP040181EN	Fire Mode • Configuration • How does DE1 work in Fire Mode?						X	
AP040182EN	Conformal Coating • Benefits from Conformal Coating • Eaton Use • Variation & limitations • Relevant standards & Conclusions			X	X	X	X	
AP040189EN	DX-COM-STICK3_Connection • Connect to a PC • Connect with drivesConnect mobile app • Offline parameter copy • Boot-Sequence and Unlocking			X	X	X	X	
AP040190EN	Update DX-COM-STICK3 • Connect to a PC • Enter Firmware Update Mode • Update			X	X	X	X	

7 DG1

No	Title / Content	General	9000X	DA1	DC1	DC1...E1	DE1	DG1
AP040058EN	Operating at low temperatures • Configuration of the protective function "Unit Under Temp" • Cold Weather Mode							X
AP040065EN	Smoke Mode and Fire Mode • How does it work? • Configuration for Smoke Mode • Configuration for Fire Mode							X
AP040128EN	DG1 in pump and fan applications • Selection of the operation mode • Application specific functions • Multi motor systems							X
AP040129EN	Analog I/Os • Connection of the analog signals • Extension of the number of I/Os • Technical data • Assignment of terminals to functions • Configuration of the analog I/Os							X
AP040132EN	Digital I/Os • Connection of the signals • Extension of the number of I/Os • Technical data • Assignment of terminals and functions • Configuration of the digital I/Os							X
AP040164EN	PID Controller • Function of the specific parameters • Operation method of the controllers • Application examples							X
AP040168EN	Load balancing in multi motor applications • Comparison and description of different possibilities to balance the load.							X
AP040172EN	Real Time Clock and Use of the Timers • Handling of the battery • Setting the real time clock • Parameterization of time based actions							X

No	Title / Content	General	9000X	DA1	DC1	DC1…E1	DE1	DG1
AP040176EN	Starting, Stopping and Operation • Configuration of the protective functions • Speed limits and setpoint setting • Ramps • Control signals • Operating modes Local and Remote • Monitor parameters • Fault management, causes, remedy • Starting and stopping							X
AP040177EN	Motor data and V/f curves • Selection of the motor control mode • Adaptation to the connected motor • Slip compensation • Setting the V/f curve							X
AP040167EN	DG1 Torque Control • Motor Control Mode • Torque references • Torque limitation • Torque threshold signalling							X

8 Rapid Link

No.	Title / Content	General	RAMO	RASP				
AP040080EN	New generation of Rapid Link units RA-SP • Aspects when changing from RA-SP2 and RA-SPV to RASP • Dimensions • ASi Profile • Parameter software and technical overview • Type and design of motor cables			x				
AP040081EN	New generation of Rapid Link units RA-MO • Aspects when changing from RA-MO-RA.. and RA-MO-W..to RAMO • Dimensions • ASi Profile • Parameter software and technical overview • Type and design of motor cables		x					
AP040197EN	Generation Chance RASP4 to RASP5 • AS-I Profile • Dimensions • Connections • Parameter & Software			x				
AP040198EN	Generation change RAMO4 to RAMO5 • AS-I Profile • Dimensions • Connections • Parameter & Software		x					
AP040195EN	Configuration to Rockwell PLC for Rapid Link • System overview • Material for the Application • Connections		x	x				
New AP040196EN	Generation Change RA-SP to RASP5 • Aspects when changing from RA-SP to RASP5 • AS-I Profile • Dimensions • Connections • Parameter & Software			x				

9 Softstarter

Nr.	Title / Content	General	DS7	S8x1+				
AP039013EN	Switching from S801+ to S811+ • Paramerization via keypad • Parameter settings DIP switch vs. keypad • Change of the devices • Connection DIP switch on keypad • Parameter setup (Operation & Protection Mode) • S811+ parameter			X				

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Our focus is on delivering the right solution for the Application. But decision makers demand more than just Innovative products. They turn to Eaton for an unwavering Commitment to personal support that makes customer Success a top priority. For more information, visit **Eaton.com**

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