## DATASHEET - RASP5-2401A31-4120110S1

Speed controllers, 2.4 A, 0.75 kW, Sensor input 4, 180/207 V DC, AS-Interface  $\ensuremath{\mathbb{B}}$ , S-7.4 for 31 modules, HAN Q4/2, with braking resistance, STO (Safe Torque Off)



Part no.

RASP5-2401A31-4120110S1 198741

Product name   Exton Modified Service Seguid Link Speed Controller     Part no.   RASE-S-2411A1-12011S31     EAN   401081867935     Product Langt/Urlepth   137 millimetre     Product Langt/Urlepth   220 millimetre     Product Varieth   238 Milliogram     Certifications   238 Milliogram     Certifications   238 Milliogram     Product Varieth   238 Milliogram     Product Tradename   238 Milliogram     Product Million Tradename   238 Million Tradename     Product Million Tradename   238 Million Tradename     Product Million Tradename   238 Million Tradename		
EAN   401501807855     Product Length/Depth   57 millimetre     Product Length/Depth   270 millimetre     Product Weight   220 millimetre     Product Weight   343 kligram     Criffications   RefS     Criffications   RefS     Product Trademanne   RefS     Product Sub Type   Rapid Link     Catalog Notes   Gaine Savethed over from Uf to vectorl speed control     Catalog Notes   RefS     Product Sub Type   RefS     Futures   RefS     Product Sub Type   RefS     Futures   RefS     RefS   RefS     RefS   RefS     RefS   RefS	Product name	Eaton Moeller® series Rapid Link Speed controller
Product Longth/Depth   157 millimetre     Product knight   200 millimetre     Product vieldh   200 millimetre     Product Tadename   RefS     Product Tadename   RefS     Product Tadename   Seed controller     Product Sub Type   Nane     Catalog Notes   Catalog Notes     Catalog Notes   Catalog Notes     Features   Nane     Product Sub Type   Nane     Features   Parametrication diversity of normal 4 value of norm	Part no.	RASP5-2401A31-4120110S1
Product weight   270 millinetre     Product weight   220 millinetre     Cartifications   200 millinetre     Product weight   230 millinetre     Cartifications   8045     Certifications   8045     Product Tradename   8045     Catalog Notes   6000000000000000000000000000000000000	EAN	4015081967995
Product weight   20 millinetre     Dertifications   20 millinetre     Dertifications   20 millinetre     Dertifications   20 millinetre     Dertifications   20 millinetre     Product Tradename   20 millinetre     Product Trypa   20 millinetre     Product Sub Typa   20 millinetre     Catalog Notes   20 millinetre     Product Sub Typa   20 millinetre     Catalog Notes   20 millinetre     Features   20 millinetre     Product Sub Typa   20 millinetre     Features   20 millinetre     Features   20 millinetre     Product Sub Type   20 millinetre     Features   20 millinetre     Features   20 millinetre     Features   20 millinetre     Features   20 millinetre     Finationatit: <t< td=""><td>Product Length/Depth</td><td>157 millimetre</td></t<>	Product Length/Depth	157 millimetre
Product weight   343 klogram     Cortifications   Seed Call   Ask klogram     Product Tradename   Reproduct Tradename   Reproduct Tradename   Reproduct Type     Product Type   Speed controller   Reproduct Type     Product Sub Type   Reproduct Type   Reproduct Type     Catalog Notes   Speed controller   Nene     Catalog Notes   Connection Supply voltage via adapter cable on round of Robbe Busbary in Diagnostics and reset on device and via AS-Interface Fraurface Speed controll Connection Supply voltage via adapter cable on round of Robbe Busbary in Diagnostics and reset on device and via AS-Interface Fraurface Speed controll Connection States instance The NATO in Section Type Section	Product height	270 millimetre
Certifications   Ref3   Circuit Circu	Product width	220 millimetre
Product Tradename   E   Uls Bib0-5-1 ILLENN BIB0-5-1 Fordert Sub Type     Product Sub Type   None     Casalog Notes   Connection of supply variation of variations and reset on device and variation of variations and reset on device and variation of variations with AIS-Interface     Features   Parameterization: divesConnect To Hall Dev switch BP- OFF- NWD     Features   Parameterization: divesConnect To Hall Dev switch BP- OFF- NWD     Fried with:   Koy switch position divesConnect To Parameterization: d	Product weight	3.43 kilogram
Product Type   Speed controller     Product Sub Type   None     Catalog Notes   Connection of supply voitage via adapter cable on round or flexible busbar in program for set on device and via AS-Interface     Catalog Notes   Product Sub Type     Product Sub Type   Product Sub Type	Certifications	CE UL 61800-5-1 IEC/EN 61800-5-1
Product Sub Type   None     Catalog Notes   None     Catalog Notes   See Subprovides via despire Cable on control Control Despinosities and reset on divice and via AS-interface     For the disposities and reset on divice and via AS-interface   Four head species inputs with M2.9 viaghter for switchoer to creep speed optional-faster stop if dovice and via AS-interface     Features   Parameterization: drivesConnect mobile (App)     Parameterization: drivesConnect mobile (App)   Parameterization: drivesConnect mobile (App)     Parameterization: drivesConnect mobile (App)   Parameterization: drivesConnect     Features   Parameterization: drivesConnect mobile (App)     Parameterization: drivesConnect mobile (App)   Parameterization: drivesConnect     Parameterization: drivesConnect   Parameterization: drivesConnect     Fitted with:   Very with position ATTO     Fitted with:   Very with position ATTO     Fitted with:   Parameterization: drivesConnect     Fitted with:   Parameterization: drivesConnect     Fitted with:   Parameterization: drivesConnect     Fitted with:   Parameterization: drivesConnect     Parameterization: drivesConnect   Parameterization: drivesConnect     Fitted with:   Parameterization: drivesConenect     Para	Product Tradename	Rapid Link
Catalog Notes   can be switched over from U/I to (vector) speed control Connection of supply voltage via adapter cable on nound of flexible busber j Diagnostics and reset on device and via AS-Interface Four fixed speeds     Features   Features     Fitted with:   Parameterization: divised over from U/I to (vector) speed control content in the sector inputs through M12 vadper for switchover to creep speed optional: Faster soip inputs through M12 sockets (max. 150 mA) for quick stop and interfocked manual operation with AUTO - OFF/RESET - HAND key switches     Features   Parameterization: divised connect mobile (App) Parameterization: divised onnect Parameterization: fieldbus Diagnostics and reset on device and via AS-Interface     Fitted with:   Key switch position AUTO Key switch position HAND Selector switch RESET Fur thermister monitoring Internal DE link Key switch in Selsion HAND Selector switch RESET Four fixed speads     Functions   External 4     Functions   Brake chopper with thrsking resistance for dynamic braking STO (Safe Torue Off) Four fixed speads     Degree of protection   WMA 12 IP65	Product Type	Speed controller
ConnectionConnectionSolutionDiagnotics and result wide adapter cable on round or flexible busher in Diagnotics and result wide adapter cable on round or flexible busher in Diagnotics and result wide adapter or switch with set is solution optional - faster of optimes interacted PTC themistor monitoring and Thermotick with set is solution optional - faster of optimes interacted PTC themistor monitoring and Thermotick with set is solution optional - faster of optimes interacted PTC themistor monitoring and Thermotick with set is solution optional - faster of optimes interacted mound operation with AUTO - OFF/RESET - HAND key switches with set is solution AUTO key switches with position AUTO - Key switch position AUTO - Key switch position HAND - Selector switch RESET - HAND key switch position HAND - OFF - FWO Diagnostics and reset on device and via AS - InterfaceFlitted with:FunctionsKey switch position AUTO - Key switch Position HAND - Selector switch RESET - HAND - OFF - FWO Director and anal operation - Four fixed speads Control unit Por connection Brake chopper with heraking resistance for dynamic braking - STO Safa forgue Off Four fixed speads Control unit Por a catadio of motors with mechanical brake 4-quad	Product Sub Type	None
Parameterization: drivesConnect Parameterization: Keypad Parameterization: Fieldbus Diagnostics and reset on device and via AS-InterfaceFitted with:Fitted with:Fitted with:Key switch position AUTO Key switch position AUTO Key switch position AUTO Internal DC link Key switch position HAND Selector switch (Positions: REV - OFF - FWD) IGBT inverter Breaking resistance Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and intericked manual operation Or fixed speeds ConnectionFunctionsFunctionsDegree of protectionImage: Stop Selector switch (Position resistance of dynamic braking Stop Selector switch (Position resistance of dynamic braking Stop Selector switch (Position Selector switch (Position Selector Series) Braking resistance of dynamic braking Stop Selector Series of dynamic braking Stop Selector Series of dynamic braking Stop Selector switch (Position RAND) Selector Series of dynamic braking Stop Selector Series of dynamic braking Stop Selector Series of dynamic braking Stop Selector switch (Position RAND) Selector Series of dynamic braking Stop Selector Series of dynamic braking Stop Selector Series of dynamic braking 	Catalog Notes	Connection of supply voltage via adapter cable on round or flexible busbar junctio Diagnostics and reset on device and via AS-Interface Four fixed speeds integrated PTC thermistor monitoring and Thermoclick with safe isolation optional: 4 sensor inputs with M12-Y adapter for switchover to creep speed optional: Faster stop if external 24 V fails Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation with AUTO - OFF/RESET - HAND key switches
Fitted with:   Parameterization: CirviesConnect     Fitted with:   Fitted with:     Fitted with:   Key switch position AUTO     Key switch position OF/RESET     PTC thermistor monitoring     Internal DC link     Key switch position MAND     Selector switch (Positions: REV - OFF - FWD)     IGBT inverter     Parameterization:     Functions     Punctions     Personal Control		
FunctionsImage: Constant of protectionImage: Constant of protection <t< td=""><td>Features</td><td>Parameterization: drivesConnect Parameterization: Keypad Parameterization: Fieldbus</td></t<>	Features	Parameterization: drivesConnect Parameterization: Keypad Parameterization: Fieldbus
Degree of protection Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   4-quadrant operation possible   Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   Image: Stop (Safe Torque Off)   Image: Stop (Safe Torque Off)   For actuation of motors with mechanical brake   Image: Stop (Safe Torque Off)	Fitted with:	Key switch position OFF/RESET PTC thermistor monitoring Internal DC link Key switch position HAND Selector switch (Positions: REV - OFF - FWD) IGBT inverter Breaking resistance Two sensor inputs through M12 sockets (max. 150 mA) for quick stop and interlocked manual operation Four fixed speeds Control unit PC connection Braking resistance
IP65	Functions	STO (Safe Torque Off) For actuation of motors with mechanical brake
	Degree of protection	
	Electromagnetic compatibility	
Overvoltage category III		
Product category Speed controller		
Protocol ASI		
ASI ASI ASI ASI ASI Interface profile cable: S-7.4 for 31 modules		
	Radio interference class	

Rated impulse withstand voltage (Uimp)	
System configuration type	Phase-earthed AC supply systems are not permitted. Center-point earthed star network (TN-S network) AC voltage
Mauntine antition	Vertical
Mounting position	Vertical
Shock resistance	15 g, Mechanical, According to IEC/EN 60068-2-27, 11 ms, Half-sinusoidal shock 11 ms, 1000 shocks per shaft
Vibration	Resistance: 57 Hz, Amplitude transition frequency on acceleration Resistance: According to IEC/EN 60068-2-6 Resistance: 6 Hz, Amplitude 0.15 mm Resistance: 10 - 150 Hz, Oscillation frequency
Altitude	Above 1000 m with 1 % performance reduction per 100 m Max. 2000 m
Ambient operating temperature - min	-10 °C
Ambient operating temperature - max	40 °C
Ambient storage temperature - min	-40 °C
Ambient storage temperature - max	70 °C
Climatic proofing	< 95 %, no condensation In accordance with IEC/EN 50178
Current limitation	0.2 - 2.4 A, motor, main circuit Adjustable, motor, main circuit
Delay time	< 10 ms, On-delay < 10 ms, Off-delay
Efficiency	97 % (η)
Heat dissipation at current/speed	27.5 W at 50% current and 90% speed 31.8 W at 100% current and 90% speed 33.5 W at 25% current and 50% speed 34.6 W at 50% current and 50% speed 35.1 W at 25% current and 0% speed 36.6 W at 100% current and 50% speed 36.8 W at 50% current and 0% speed 40.7 W at 100% current and 0% speed
Input current ILN at 150% overload	2.5 A
Leakage current at ground IPE - max	3.5 mA
Mains current distortion	120 %
Mains switch-on frequency	Maximum of one time every 60 seconds
Mains voltage - max	480 V
Mains voltage - min	380 V
Mains voltage tolerance	380 - 480 V (-10 %/+10 %, at 50/60 Hz)
Operating mode	U/f control Sensorless vector control (SLV) PM and LSPM motors Synchronous reluctance motors BLDC motors
Output frequency - max	500 Hz
Output frequency - min	0 Hz
Overload current	At 40 °C For 60 s every 600 s
Overload current IL at 150% overload	3.6 A
Rated frequency - max	66 Hz
Rated frequency - min	45 Hz
Rated operational current (le)	2.4 A at 150% overload (at an operating frequency of 8 kHz and an ambient air temperature of +40 °C)
Rated operational power at 380/400 V, 50 Hz, 3-phase	0.75 kW
Rated operational voltage	480 V AC, 3-phase 400 V AC, 3-phase
Resolution	0.1 Hz (Frequency resolution, setpoint value)
Starting current - max	200 %, IH, max. starting current (High Overload), For 2 seconds every 20 seconds, Power section
Supply frequency	50/60 Hz
Switching frequency	8 kHz, 4 - 32 kHz adjustable, fPWM, Power section, Main circuit
Assigned motor power at 460/480 V, 60 Hz, 3-phase	1 HP

Braking current	≤ 0.6 A (max. 6 A for 120 ms), Actuator for external motor brake
Braking torque	≤ 30 % (I/Ie) Adjustable to 100 % (I/Ie), DC - Main circuit
Braking voltage	280/207 V DC -15 % / +10 %, Actuator for external motor brake
Switch-on threshold for the braking transistor	765 V DC
Rated conditional short-circuit current (Iq)	10 kA
Short-circuit protection (external output circuits)	Type 1 coordination via the power bus' feeder unit, Main circuit
Rated control voltage (Uc)	24 V DC (-15 %/+20 %, external via AS-Interface® plug) 180/207 V DC (external brake 50/60 Hz)
Communication interface	AS-Interface
Connection	Plug type: HAN Q4/2
Interfaces	Number of slave addresses: 31 (AS-Interface®)
	Max. total power consumption from AS-Interface® power supply unit (30 V): 190 mA
	Specification: S-7.4 (AS-Interface®)
Cable length	C1 ≤ 1 m, maximum motor cable length
,	$C2 \le 5 m$ , maximum motor cable length $C3 \le 25 m$ , maximum motor cable length
10.2.2 Corrosion resistance	Meets the product standard's requirements.
10.2.3.1 Verification of thermal stability of enclosures	Meets the product standard's requirements.
10.2.3.2 Verification of resistance of insulating materials to normal heat	Meets the product standard's requirements.
10.2.3.3 Resist. of insul. mat. to abnormal heat/fire by internal elect. effects	Meets the product standard's requirements.
10.2.4 Resistance to ultra-violet (UV) radiation	Meets the product standard's requirements.
10.2.5 Lifting	Does not apply, since the entire switchgear needs to be evaluated.
10.2.6 Mechanical impact	Does not apply, since the entire switchgear needs to be evaluated.
10.2.7 Inscriptions	Meets the product standard's requirements.
10.3 Degree of protection of assemblies	Does not apply, since the entire switchgear needs to be evaluated.
10.4 Clearances and creepage distances	Meets the product standard's requirements.
10.5 Protection against electric shock	Does not apply, since the entire switchgear needs to be evaluated.
10.6 Incorporation of switching devices and components	Does not apply, since the entire switchgear needs to be evaluated.
10.7 Internal electrical circuits and connections	Is the panel builder's responsibility.
10.8 Connections for external conductors	Is the panel builder's responsibility.
10.9.2 Power-frequency electric strength	Is the panel builder's responsibility.
10.9.3 Impulse withstand voltage	Is the panel builder's responsibility.
10.9.4 Testing of enclosures made of insulating material	Is the panel builder's responsibility.
10.10 Temperature rise	The panel builder is responsible for the temperature rise calculation. Eaton will provide heat dissipation data for the devices.
10.11 Short-circuit rating	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.12 Electromagnetic compatibility	Is the panel builder's responsibility. The specifications for the switchgear must be observed.
10.13 Mechanical function	The device meets the requirements, provided the information in the instruction leaflet (IL) is observed.

## **Technical data ETIM 8.0**

Low-voltage industrial components (EG000017) / Frequency converter =< 1 kV (EC001857)						
Electric engineering, automation, process control engineering / Electrical drive / Sta	atic frequency o	converter	/ Static frequency converter = < 1 kV (ecl@ss10.0.1-27-02-31-01 [AKE177014])			
Mains voltage		V	380 - 480			
Mains frequency			50/60 Hz			
Number of phases input			3			
Number of phases output			3			
Max. output frequency		Hz	500			
Max. output voltage		V	500			
Nominal output current I2N		A	2.4			

Max. output at quadratic load at rated output voltagekW0.75Max. output at linear load at rated output voltagekW0.75Relative symmetric net frequency tolerance%10Number of analogue outputs%10Number of analogue outputs%10Number of digital outputs%%Application in industrial area permitted%%Supporting protocol for TCP/IP%%Supporting protocol for PROFIBUS%%Supporting protocol for ASI%%Supporting protocol for Modbus%%Supporting protocol for Modbus%%Supporting protocol for SUCONET%%Supporting protocol for PROFINET IO%%Supporting protocol for PROFINET CBA%%	1.75     0    <
Relative symmetric net frequency tolerance   %   10     Relative symmetric net voltage tolerance   %   10     Number of analogue outputs    0     Number of analogue inputs    0     Number of digital outputs    0     Number of digital inputs    0     Number of digital inputs    0     Number of digital inputs    0     Application in industrial area permitted    10     Application in domestic- and commercial area permitted    10     Supporting protocol for TCP/IP    No     Supporting protocol for CAN    No     Supporting protocol for CAN    No     Supporting protocol for KNX    No     Supporting protocol for KNX   No   No     Supporting protocol for Data-Highway   No   No     Supporting protocol for SUCONET    No     Supporting protocol for CAN    No     Supporting protocol for CAN    No     Supporting protocol for Data-Highway    No     Supporting proto	0 0 0 0 0 0 0 0 0 0 0 0 0 0
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Supporting protocol for PROFINET IO	
Supporting protocol for SERCOS No	
Supporting protocol for AS-Interface Safety at Work No	
Supporting protocol for DeviceNet Safety No	
Supporting protocol for INTERBUS-Safety No	
Supporting protocol for PROFIsafe No	
Supporting protocol for SafetyBUS p No	
Supporting protocol for BACnet No	
Supporting protocol for other bus systems No	
Number of HW-interfaces industrial Ethernet 0	
Number of interfaces PROFINET 0	
Number of HW-interfaces RS-232 0	
Number of HW-interfaces RS-422 0	
Number of HW-interfaces RS-485	
Number of HW-interfaces serial TTY 0	
Number of HW-interfaces USB 0	
Number of HW-interfaces parallel 0	
Number of HW-interfaces other	
With optical interface No	No
With PC connection Yes	/es
Integrated breaking resistance Yes	/es
4-quadrant operation possible Yes	/es
Type of converter U c	J converter
Degree of protection (IP) IP6	P65
Degree of protection (NEMA) 12	2
Height mm 270	70
Width mm 220	20
Depth mm 157	57