

Data sheet SM 332 (332-5HD01)

Technical data

Type     SM 332       General information     -       Note     -       Features     4 outputs Configurable Voltage, current       SPEED-Bus     -       Current consumption/power loss     -       Current consumption from backplane bus     125 mA       Power loss     3.5 W       Technical data analog outputs     -       Number of outputs     4       Cable lengh, shielded     -       Reverse polarity protection of rated load voltage     -       Voltage outputs bin-foricult protection     -       Voltage outputs     -       Voltage outputs bin-foricult protection     -       Voltage outputs     -       Min. load resistance (voltage range)     1 kOhm       Max. capacitive load (current range)     1 μF       Max. inductive load (current range)     -       Output voltage ranges     +/-0.1%,+/-0.5%       Destruction limit against external applied voltage     -       Max. inductive load (current range)     10 mH       Max. inductive load (current range)     -       Max. inductive load (current range)     - <th>Order no.</th> <th>332-5HD01</th>	Order no.	332-5HD01
Note     -       Features     4 outputs Configurable Voltage, current       SPEED-Bus     -       Current consumption/power loss     125 mA       Power loss     3.5 W       Technical data analog outputs     4       Cable length, shielded     -       Cable length, shielded     -       Rated load voltage     -       Current consumption from load voltage     -       Reverse polarity protection of rated load voltage     -       Current consumption from load voltage L+ (without load)     115 mA       Voltage output short-circuit protection     -       Current consumption from load voltage L+ (without load)     115 mA       Voltage output short-circuit protection     -       Min. load resistance (voltage range)     1 kChm       Max. inductive load (current range)     30 mA       Output voltage ranges     +10 V+10 V       Volt age ranges     +0.2%+0.8%       Basic error limit voltage ranges     +0.1%+20 mA       Max. inductive load (current range)     500 Ohm       Max. inductive load (current range)     500 Ohm       Max. inductive load (current ran	Туре	SM 332
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Features   4 outputs Configurable Votage, ourrent     SPEED-Bus   -     Current consumption/power loss   125 mA     Current consumption from backplane bus   125 mA     Power loss   3.5 W     Technical data analog outputs   4     Number of outputs   4     Cable length, shielded   -     Rated load votage   DC 24 V     Reverse polarity protection of rated load votage   -     Current consumption from load votage L+ (without load)   115 mA     Voltage output s   -     Woltage output s   -     Woltage output s   -     Voltage output s   -     Woltage output s   -     Workage output s   -     Workage output s   -     Workage output s   -     Workage output s   -     Max. inductive load (current range)   1 µF     Max. inductive load (current range)   -     Destruction limit against external app		
Configurable Voltage, current       SPEED-Bus     -       Current consumption/power loss     125 mA       Current consumption from backplane bus     125 mA       Power loss     3.5 W       Technical data analog outputs     4       Cable length, shielded     -       Rated load voltage     DC 24 V       Reverse polarity protection of rated load voltage     -       Current consumption from load voltage L+ (without load)     115 mA       Voltage output short-circuit protection     Image: Configurable		-
Current consumption/power loss     Current consumption from backplane bus   125 mA     Power loss   3.5 W     Technical data analog outputs   4     Cable length, shielded   -     Rated load voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage outputs   ✓     Voltage outputs   ✓     Voltage outputs   ✓     Min. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   30 mA     Output voltage ranges   +0.0 V     Voltage outputs   ✓     Max. inductive load (current range)   30 mA     Output voltage ranges   +0.0 S%     Destruction limit voltage ranges   +0.0 S%     Basic error limit voltage ranges   +0.0 S%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. incloat resistance (current range)   500 Ohm     Max. incloat resistance (current range)   500 Ohm     Max. incloat resistance (current range)   -     Max. incl	Features	Configurable
Current consumption from backplane bus   125 mA     Power loss   3.5 W     Technical data analog outputs   4     Number of outputs   4     Cable length, shielded   -     Rated Ioad voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   ✓     Voltage outputs   ✓     Min. load resistance (voltage range)   1 kDhm     Max. capacitive load (current range)   30 mA     Output voltage ranges   -/0 V +10 V     v/1 V +5 V   ·     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. in load resistance (current range)   10 mH     Max. inductive load (current range)   10 mH     Max. inductive load (current range)   -     Output current ranges   +/-0.3% +/-0.8%     Basic error limit outrent ranges   -     Output current ranges <td>SPEED-Bus</td> <td>-</td>	SPEED-Bus	-
Power loss   3.5 W     Technical data analog outputs     Number of outputs   4     Cable length, shielded   -     Rated load voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   ✓     Voltage outputs   ✓     Min. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V +1 V +5 V     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   0 mH     Max. inductive load (current range)   -     Output current ranges   +/-0.3% +/-0.8%     Basic error limit outrent ranges   +/-0.3% +/-0.8%     Basic error limit current ranges   +/-0.3% +/-0.8%     Basic error limit current ranges	Current consumption/power loss	
Technical data analog outputs     Number of outputs   4     Cable length, shielded   -     Rated load voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   ✓     Wine load (current range)   1 kOhm     Max. inductive load (current range)   1 µF     Max. inductive load (current range)   30 mA     Output voltage ranges   +/0.2% +/0.8%     Basic error limit voltage ranges   +/0.1% +/0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. inductive load (current range)   10 mH     Max. in load resistance (current range)   500 Ohm     Max. in load resistance (current range)   500 Ohm     Max. in load resistance (current range)   10 mH     Max. in load (current range)   -     Output voltage ranges   +/0.2% +/0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. inductive load (current range)   10 mH     <	Current consumption from backplane bus	125 mA
Number of outputs   4     Cable length, shielded   -     Rated load voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   ✓     Voltage outputs   ✓     Min. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   1 µF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V v 1 V +5 V     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. incluctive load (current range)   500 Ohm     Max. incluctive load (current range)   0 mH     Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA     Output current ranges   -20 mA +20 mA     Operational limit of current range)   -     Max. inductive load (current range)   -     Output current ranges   -	Power loss	3.5 W
Cable length, shielded-Rated load voltageDC 24 VReverse polarity protection of rated load voltage-Current consumption from load voltage L+ (without load)115 mAVoltage output short-circuit protectionImage: shieldedVoltage outputsImage: shieldedVoltage outputsImage: shieldedMin. load resistance (voltage range)1 kOhmMax. capacitive load (current range)30 mAOutput voltage ranges $1/V \dots +10 V$ $V \dots +10 V$ $V \dots +10 V$ $+1 V \dots +5 V$ Operational limit of voltage ranges $1/0.2\% \dots +10.8\%$ Basic error limit voltage ranges $1/0.1\% \dots +10.8\%$ Current outputsImage: shieldedMax. inductive load (current range)500 OhmMax. in load resistance (current range)10 mHMax. in load resistance (current range) $0.0 \text{ Ohm}$ Max. in load resistance (current range) $0.0 \text{ Ohm}$ Max. incluctive load (current range) $-20 \text{ mA} \dots +20 \text{ mA} +4 \text{ mA} \dots +20  mA$	Technical data analog outputs	
Rated load voltage   DC 24 V     Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   Image: Construction of the constructin constructin construction of the constructin constru	Number of outputs	4
Reverse polarity protection of rated load voltage   -     Current consumption from load voltage L+ (without load)   115 mA     Voltage output short-circuit protection   ✓     Win. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   1 µF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V 0 V +10 V +10 V +10 V     Operational limit of voltage ranges   +/-0.1% +/-0.8%     Basic error limit voltage ranges   -     Current outputs   ✓     Max. inductive load (current range)   500 Ohm     Max. in load resistance (current range)   10 mH     Max. in load resistance (current range)   -     Output voltage langes   -     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -     Output current ranges   -     Operational limit of current ranges   +     -20 mA +20 mA   -     Operational limit of current ranges   +     -20 mA +20 mA   -     Operational limit of current ranges   +	Cable length, shielded	
Current consumption from load voltage L+ (without load)   115 mA     Voltage outputs short-circuit protection   ✓     Win. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   1 μF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V 0 V +10 V 0 V +10 V +10 V     Output voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. inductive load (current range)   10 mH     Max. inductive load (current range)   200 Ohm     Max. inductive load (current range)   -     Output voltage ranges   -     Voltage voltage   -     Current outputs   ✓     Max. in load resistance (current range)   10 mH     Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA 0 mA +20 mA     Y = 0.3% +/-0.3% +/-0.3%   -     Basic error limit durrent ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -	Rated load voltage	DC 24 V
Voltage output short-circuit protection     Voltage outputs     Min. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   1 µF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V +1 V +5 V     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs      Max. in load resistance (current range)   500 Ohm     Max. in load resistance (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -     Output current ranges   -     Output current ranges   -     Operational limit of current ranges   +/-0.3%     Basic error limit current ranges   +/-0.3%     Basic error limit current ranges   +/-0.3%     Basic error limit current ranges   +/-0.2%     Destructio	Reverse polarity protection of rated load voltage	
Voltage outputs     Min. load resistance (voltage range)   1 kOhm     Max. capacitive load (current range)   1 μF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V +1 V +5 V     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   •     Max. in load resistance (current range)   500 Ohm     Max. in load resistance (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -     Output current ranges   -     Output current ranges   -     Operational limit of current ranges   +/-0.3%     Basic error limit current ranges   +/-0.3%     Basic error limit of current ranges   +/-0.2% +/-0.8%     Basic error limit of current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage </td <td>Current consumption from load voltage L+ (without load)</td> <td>115 mA</td>	Current consumption from load voltage L+ (without load)	115 mA
Min. load resistance (voltage range)1 kOhmMax. capacitive load (current range)1 $\mu$ FMax. inductive load (current range)30 mAOutput voltage ranges0 V +10 V 0 V +10 V +1 V +5 VOperational limit of voltage ranges+/-0.2% +/-0.8%Basic error limit voltage ranges+/-0.1% +/-0.5%Destruction limit against external applied voltage-Current outputsImage: Current range)Max. inductive load (current range)500 OhmMax. in load resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-Output current ranges-Output current ranges-Operational limit of current ranges+/-0.3% +/-0.8%Basic error limit current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Settling time for ohmic load0.2 ms	Voltage output short-circuit protection	I
Max. capacitive load (current range)   1 µF     Max. inductive load (current range)   30 mA     Output voltage ranges   -10 V +10 V 0 V +10 V +1 V +5 V     Operational limit of voltage ranges   +/-0.2% +/-0.8%     Basic error limit voltage ranges   +/-0.1% +/-0.5%     Destruction limit against external applied voltage   -     Current outputs   ✓     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   500 Ohm     Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA     Operational limit of current range)   -     Output current ranges   +/-0.3% +/-0.8%     Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Output current ranges   +/-0.2% +/-0.5%     Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Setting time for ohmic load   0.2 ms	Voltage outputs	✓
Max. inductive load (current range)30 mAOutput voltage ranges-10 V +10 V 0 V +10 V +1 V +5 VOperational limit of voltage ranges+/-0.2% +/-0.8%Basic error limit voltage ranges+/-0.1% +/-0.5%Destruction limit against external applied voltage-Current outputsImage: Current rangeMax. inload resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-Output current ranges-Output current ranges+/-0.3% +/20 mA +4 mA +20 mAOperational limit of current ranges+/-0.3% +/-0.8%Basic error limit against external applied voltage-Output current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Output current ranges+/-0.2% +/-0.5%Basic error limit current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Setting time for ohmic load0.2 ms	Min. load resistance (voltage range)	1 kOhm
Output voltage ranges-10 V +10 V 0 V +10 V +1 V +5 VOperational limit of voltage ranges+/-0.2% +/-0.8%Basic error limit voltage ranges+/-0.1% +/-0.5%Destruction limit against external applied voltage-Current outputsImage: Current rangeMax. in load resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-20 mA +20 mAOutput current ranges+/-0.3% +/-0.8%Basic error limit of current ranges+/-0.3% +/-0.8%Basic error limit against external applied voltage-Setting time for ohmic load0.2 ms	Max. capacitive load (current range)	1 µF
OV +10 V +1 V +5 VOperational limit of voltage ranges+/-0.2% +/-0.8%Basic error limit voltage ranges+/-0.1% +/-0.5%Destruction limit against external applied voltage-Current outputsImage: Current rangeMax. in load resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-Output current ranges-20 mA +20 mA 0 mA +20 mA 0 mA +20 mAOperational limit of current ranges+/-0.3% +/-0.8%Basic error limit current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Settling time for ohmic load0.2 ms	Max. inductive load (current range)	30 mA
Basic error limit voltage ranges+/-0.1% +/-0.5%Destruction limit against external applied voltage-Current outputsMax. in load resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-Output current ranges-20 mA +20 mA 0 mA +20 mA 0 mA +20 mA 14 mA +20 mAOperational limit of current ranges+/-0.3% +/-0.8%Basic error limit current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Settling time for ohmic load0.2 ms	Output voltage ranges	0 V +10 V
Destruction limit against external applied voltage   -     Current outputs   Image: Current outputs     Max. in load resistance (current range)   500 Ohm     Max. inductive load (current range)   10 mH     Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA	Operational limit of voltage ranges	+/-0.2% +/-0.8%
Current outputsImage: Solution of the second se	Basic error limit voltage ranges	+/-0.1% +/-0.5%
Max. in load resistance (current range)500 OhmMax. inductive load (current range)10 mHMax. inductive load (current range)-Output current ranges-20 mA +20 mA 0 mA +20 mA +4 mA +20 mAOperational limit of current ranges+/-0.3% +/-0.8%Basic error limit current ranges+/-0.2% +/-0.5%Destruction limit against external applied voltage-Settling time for ohmic load0.2 ms	Destruction limit against external applied voltage	-
Max. inductive load (current range)   10 mH     Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA 0 mA +20 mA +4 mA +20 mA +4 mA +20 mA     Operational limit of current ranges   +/-0.3% +/-0.8%     Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Settling time for ohmic load   0.2 ms	Current outputs	✓
Max. inductive load (current range)   -     Output current ranges   -20 mA +20 mA 0 mA +20 mA 0 mA +20 mA +4 mA +20 mA     Operational limit of current ranges   +/-0.3% +/-0.8%     Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Settling time for ohmic load   0.2 ms	Max. in load resistance (current range)	500 Ohm
Output current ranges   -20 mA +20 mA     0 mA +20 mA   -4 mA +20 mA     +4 mA +20 mA   -3% +/-0.8%     Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Settling time for ohmic load   0.2 ms	Max. inductive load (current range)	10 mH
0 mA +20 mA     +4 mA +20 mA     Operational limit of current ranges     +/-0.3% +/-0.8%     Basic error limit current ranges     +/-0.2% +/-0.5%     Destruction limit against external applied voltage     -     Settling time for ohmic load     0.2 ms	Max. inductive load (current range)	-
Basic error limit current ranges   +/-0.2% +/-0.5%     Destruction limit against external applied voltage   -     Settling time for ohmic load   0.2 ms	Output current ranges	0 mA +20 mA
Destruction limit against external applied voltage -   Settling time for ohmic load 0.2 ms	Operational limit of current ranges	+/-0.3% +/-0.8%
Settling time for ohmic load 0.2 ms	Basic error limit current ranges	+/-0.2% +/-0.5%
-	Destruction limit against external applied voltage	
Settling time for capacitive load 1 ms	Settling time for ohmic load	0.2 ms
	Settling time for capacitive load	1 ms
Settling time for inductive load 1 ms	Settling time for inductive load	1 ms
Resolution in bit 13	Resolution in bit	13
Conversion time 1 ms all channels	Conversion time	1 ms all channels



Substitute value can be applied	yes	A YASKAWA COMPANY
Output data size	8 Byte	
Status information, alarms, diagnostics		
Status display	green LED per channel	
Interrupts	yes	
Process alarm	no	
Diagnostic interrupt	yes, parameterizable	
Diagnostic functions	yes	
Diagnostics information read-out	possible	
Supply voltage display	none	
Group error display	red SF LED	
Channel error display	red LED per channel	
le cletion		
Isolation Between channels		
Between channels of groups to	-	
Between channels and backplane bus		
	1	
Between channels and power supply	1	
Max. potential difference between circuits	-	
Max. potential difference between inputs (Ucm)	-	
Max. potential difference between Mana and Mintern (Uiso)	DC 75 V/ AC 60 V	
Max. potential difference between inputs and Mana (Ucm)	-	
Max. potential difference between inputs and Mintern (Uiso)	-	
Max. potential difference between Mintern and outputs	-	
Insulation tested with	DC 500 V	
Datasizes		
Input bytes	0	
Output bytes	8	
Parameter bytes	21	
Diagnostic bytes	16	
Housing		
Material	PPE	
Mounting	Rail System 300	
Mechanical data		
Dimensions (WxHxD)	40 mm x 125 mm x 120 mm	
Weight	230 g	
	200 9	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL508 certification	yes	