

Data sheet SM 322 (322-1HH00)

## Technical data

Type   SM 322  General information  Note	Order no.	322-1HH00
Note 1- Features	Туре	SM 322
Note 1- Features		
Features 16 relay outputs, in groups of 8 AC 230 V/ DC 30 V  Current consumption/power loss  Current consumption from backplane bus 80 mA  Power loss 4W  Technical data digital outputs  Number of outputs 16 Cable length, shielded 600 m  Rated load voltage DC 30 V/ AC 230 V  Current consumption from load voltage L+ (without load) - Cotable length, unshielded 600 m  Rated load voltage DC 30 V/ AC 230 V  Current consumption from load voltage L+ (without load) - Cotable unshielded 600 m  Rated load voltage DC 30 V/ AC 230 V  Current consumption from load voltage L+ (without load) - Cotable unshielded 600 m  Rated load voltage DC 30 V/ AC 230 V  Current per group, horizontal configuration, 40°C 8 A  Total current per group, notizontal configuration, 60°C 8 A  Cutput delay of "0" to "1" 10 ms  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current Lamp load 6W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Parallel switching of outputs for increased power not possible  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency with inductive load max. 1. Hz  Internal limitation of inductive shut-off voltage -  Finger level -  Switching requency of lamp load nax. 1. Hz  Internal limitation of inductive shut-off voltage -  Switching frequency of lamp load nax. 1. Hz  Switching requency of namp load nax. 1. Hz  Internal limitation of inductive shut-off voltage -  Switching requency of lamp load nax. 1. Hz  Switching requency of namp load nax. 1. Hz  Internal limitation of inductive shut-off voltage -  Switching requency of lamp load nax. 1. Hz  Switching requency of lamp load nax. 1. Hz  Switching requency of lamp load nax. 1. Hz  Switching repairin		
AC 230 V / DC 30 V ** Contact rating per channel 5 A  SPEED-Bus		-
Current consumption/power loss  Current consumption from backplane bus 80 mA  Power loss 4 W  Technical data digital outputs  Number of outputs 16 16  Cable length, shielded 1000 m  Cable length, unshielded 600 m  Rated load voltage DC 30 V/AC 230 V  Current consumption from load voltage L+ (without load) - Total current per group, horizontal configuration, 40°C 8 A  Total current per group, horizontal configuration 8 A  Output current per group, vertical configuration 8 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current  Lamp load 6 W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Actuation of digital input   Switching frequency with resistive load max. 10 Hz  Switching frequency on lamp load max. 10 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage - Short-circuit protection of output  Tingger level -  Number of operating cycle of relay outputs  Switching capacity of contacts 5 A  Output data size Status display green LED per channel  Interrupts on output Green LED per channel  Interrupts	Features	AC 230 V/ DC 30 V
Current consumption from backplane bus     80 mA       Power loss     4 W       Technical data digital outputs     16       Number of outputs     16       Cable length, shielded     1000 m       Cable length, unshielded     600 m       Rated load voltage     DC 30 V/ AC 230 V       Current consumption from load voltage L+ (without load)     -       Total current per group, horizontal configuration, 40°C     8 A       Total current per group, horizontal configuration, 60°C     8 A       Total current per group, vertical configuration     8 A       Output delay of "0" to "1"     10 ms       Output delay of "1" to "0"     5 ms       Minimum load current     -       Lamp load     6 W       Parallel switching of outputs for redundant control of a load     not possible       Parallel switching of outputs for increased power     not possible       Actuation of digital input <ul> <li>Switching frequency with resistive load</li> <li>max. 10 Hz           Switching frequency on lamp load         max. 0.5 Hz           Switching frequency on lamp load         max. 1 Hz           Internal limitation of inductive shut-off voltage         -           Short-circuit protection of output         -           Trigger level         -           Number of operati</li></ul>	SPEED-Bus	-
Power loss 4 W  Technical data digital outputs  Number of outputs 16 Cable length, shielded 1000 m  Cable length, unshielded 600 m  Rated load voltage DC 30 V/ AC 230 V  Current consumption from load voltage L+ (without load) - Total current per group, horizontal configuration, 40°C 8 A  Total current per group, horizontal configuration 60°C 8 A  Total current per group, horizontal configuration 80°C 8 A  Output current at signal *1*, rated value 5 A  Output delay of *0° to *11* 10 ms  Output delay of *1" to *0° 5 ms  Minimum load current	Current consumption/power loss	
Number of outputs 16 Cable length, shielded 1000 m Rated load voltage DC 30 V/ AC 230 V Current consumption from load voltage L+ (without load) Total current per group, horizontal configuration, 40°C 8 A Total current per group, horizontal configuration, 60°C 8 A Total current per group, vertical configuration 8 A Cutput current at signal "1", rated value 5 A Cutput delay of "0" to "1" 10 ms Cutput delay of "0" to "1" 10 ms Cutput delay of "1" to "0" 5 ms Minimum load current 10 exited switching of outputs for redundant control of a load Parallel switching of outputs for increased power Actuation of digital input  Switching frequency with inductive load max. 10 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load Internal limitation of inductive shut-off voltage Short-circuit protection of outputs Switching capacity of centacts Switching capacity of contacts Switching capacity of contacts Status display green LED per channel Interrupts Interrupts  Georgia Max. 10 Hz Status display green LED per channel Interrupts In	Current consumption from backplane bus	80 mA
Number of outputs Cable length, shielded Cable length, unshielded Carrent consumption from load voltage L+ (without load) Current consumption from load voltage L+ (without load) Current consumption from load voltage L+ (without load) Current per group, horizontal configuration, 40°C SAA Cotal current per group, horizontal configuration 60°C Total current per group, vertical configuration SAA Cutput delay of "0" to "1" 10 ms Cutput delay of "0" to "1" 10 ms Cutput delay of "1" to "0" 5 ms Minimum load current Lamp load 6 W Parallel switching of outputs for redundant control of a load not possible Parallel switching of outputs for increased power not possible Actuation of digital input  Switching frequency with resistive load max. 10 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 1 Hz Internal limitation of inductive shut-off voltage Short-circuit protection of output Trigger level Number of operating cycle of relay outputs Switching capacity of contacts Switching capacity of contacts Switching remained the first outputs Switching capacity of contacts Switching capacity of contacts Switching capacity of contacts Status display Green LED per channel Interrupts	Power loss	4 W
Cable length, shielded     1000 m       Cable length, unshielded     600 m       Rated load voltage     DC 30 V/AC 230 V       Current consumption from load voltage L+ (without load)     -       Total current per group, horizontal configuration, 40°C     8 A       Total current per group, vertical configuration     8 A       Total current per group, vertical configuration     8 A       Output current at signal *1", rated value     5 A       Output delay of "1" to "0"     5 ms       Minimum load current     -       Lamp load     6 W       Parallel switching of outputs for redundant control of a load     not possible       Parallel switching of outputs for increased power     not possible       Actuation of digital input     ✓       Switching frequency with resistive load     max. 10 Hz       Switching frequency with inductive load     max. 10 Hz       Switching frequency on lamp load     max. 1 Hz       Internal limitation of inductive shut-off voltage     -       Short-circuit protection of output     -       Trigge level     -       Number of operating cycle of relay outputs     -       Switching capacity of contacts     5 A       Output data size     2 Byte       Status information, alarms, diagnostics       Status display     green LED per channel	Technical data digital outputs	
Cable length, unshielded     600 m       Rated load voltage     DC 30 V/ AC 230 V       Current consumption from load voltage L+ (without load)     -       Total current per group, horizontal configuration, 40°C     8 A       Total current per group, vertical configuration     8 A       Output current at signal *1", rated value     5 A       Output delay of *1" to *0"     5 ms       Minimum load current     -       Lamp load     6 W       Parallel switching of outputs for redundant control of a load     not possible       Parallel switching of outputs for increased power     not possible       Actuation of digital input     ✓       Switching frequency with resistive load     max. 10 Hz       Switching frequency with inductive load     max. 0.5 Hz       Switching frequency on lamp load     max. 1 Hz       Internal limitation of inductive shut-off voltage     -       Short-circuit protection of output     -       Trigger level     -       Number of operating cycle of relay outputs     -       Switching capacity of contacts     5 A       Output data size     2 Byte       Status information, alarms, diagnostics       Status display     green LED per channel       Interrupts	Number of outputs	16
Rated load voltage DC 30 V/ AC 230 V  Current consumption from load voltage L+ (without load) -  Total current per group, horizontal configuration, 40°C 8 A  Total current per group, horizontal configuration, 60°C 8 A  Total current per group, vertical configuration 8 A  Output current at signal "1", rated value 5 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current -  Lamp load 6 W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Actuation of digital input   Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage -  Short-circuit protection of output  Trigger level -  Number of operating cycle of relay outputs  Switching capacity of contacts 5 A  Status display green LED per channel  Interrupts notice the size of the s	Cable length, shielded	1000 m
Current consumption from load voltage L+ (without load)  Total current per group, horizontal configuration, 40°C  8 A  Total current per group, vertical configuration, 60°C  8 A  Total current per group, vertical configuration  8 A  Output current at signal *1", rated value  5 A  Output delay of "0" to "1"  10 ms  Output delay of "1" to "0"  5 ms  Minimum load current  Lamp load  6 W  Parallel switching of outputs for redundant control of a load  not possible  Parallel switching of outputs for increased power  not possible  Actuation of digital input  Switching frequency with resistive load  max. 10 Hz  Switching frequency with inductive load  max. 10 Hz  Switching frequency with inductive load  max. 1 Hz  Internal limitation of inductive shut-off voltage  Short-circuit protection of output  Trigger level  Number of operating cycle of relay outputs  Switching capacity of contacts  5 A  Output data size  Status display  green LED per channel  Interrupts  no	Cable length, unshielded	600 m
Total current per group, horizontal configuration, 40°C 8 A  Total current per group, horizontal configuration 60°C 8 A  Total current per group, vertical configuration 8 A  Output current at signal "1", rated value 5 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current	Rated load voltage	DC 30 V/ AC 230 V
Total current per group, horizontal configuration, 60°C 8 A  Total current per group, vertical configuration 8 A  Output current at signal "1", rated value 5 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current 5 ms  Minimum load current 6 W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Actuation of digital input   Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 1 Hz  Internal limitation of inductive shut-off voltage  Short-circuit protection of output 5 A  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts on part of the size of t	Current consumption from load voltage L+ (without load)	-
Total current per group, vertical configuration 8 A  Output current at signal "1", rated value 5 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current  Lamp load 6 W  Parallel switching of outputs for redundant control of a load not possible  Actuation of digital input ✓  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 10 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage  Short-circuit protection of output  Trigger level  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts on max 1 LED	Total current per group, horizontal configuration, 40°C	8 A
Output current at signal "1", rated value 5 A  Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current -  Lamp load 6 W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Actuation of digital input   Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 1 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage -  Short-circuit protection of output -  Trigger level -  Number of operating cycle of relay outputs -  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts	Total current per group, horizontal configuration, 60°C	8 A
Output delay of "0" to "1" 10 ms  Output delay of "1" to "0" 5 ms  Minimum load current	Total current per group, vertical configuration	8 A
Output delay of "1" to "0"       5 ms         Minimum load current       -         Lamp load       6 W         Parallel switching of outputs for redundant control of a load       not possible         Parallel switching of outputs for increased power       not possible         Actuation of digital input       ✓         Switching frequency with resistive load       max. 10 Hz         Switching frequency with inductive load       max. 0.5 Hz         Switching frequency on lamp load       max. 1 Hz         Internal limitation of inductive shut-off voltage       -         Short-circuit protection of output       -         Trigger level       -         Number of operating cycle of relay outputs       -         Switching capacity of contacts       5 A         Output data size       2 Byte         Status information, alarms, diagnostics         Status display       green LED per channel         Interrupts       no	Output current at signal "1", rated value	5 A
Minimum load current  Lamp load  6 W  Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power Actuation of digital input  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage Short-circuit protection of output  Trigger level Number of operating cycle of relay outputs Switching capacity of contacts Output data size  Status information, alarms, diagnostics  Status display Interrupts  Parallel switching aload not possible not possible  not possible  not possible  not possible  not possible  Actuation of possible  not possible  not possible  not possible  Actuation of possible  Switching capacity of contacts  - Suital Status display green LED per channel Interrupts	Output delay of "0" to "1"	10 ms
Lamp load 6 W   Parallel switching of outputs for redundant control of a load not possible   Parallel switching of outputs for increased power not possible   Actuation of digital input ✓   Switching frequency with resistive load max. 10 Hz   Switching frequency with inductive load max. 0.5 Hz   Switching frequency on lamp load max. 1 Hz   Internal limitation of inductive shut-off voltage -   Short-circuit protection of output -   Trigger level -   Number of operating cycle of relay outputs -   Switching capacity of contacts 5 A   Output data size 2 Byte   Status information, alarms, diagnostics   Status display green LED per channel   Interrupts no	Output delay of "1" to "0"	5 ms
Parallel switching of outputs for redundant control of a load not possible  Parallel switching of outputs for increased power not possible  Actuation of digital input  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage -  Short-circuit protection of output -  Trigger level -  Number of operating cycle of relay outputs -  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts not possible not poss	Minimum load current	-
Parallel switching of outputs for increased power not possible  Actuation of digital input  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage -  Short-circuit protection of output -  Trigger level -  Number of operating cycle of relay outputs -  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no mo	Lamp load	6 W
Actuation of digital input  Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage -  Short-circuit protection of output -  Trigger level -  Number of operating cycle of relay outputs -  Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts nax. 10 Hz  max. 10 Hz  max. 0.5 Hz  shart. 0.5 Hz	Parallel switching of outputs for redundant control of a load	not possible
Switching frequency with resistive load max. 10 Hz  Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage - Short-circuit protection of output - Trigger level - Number of operating cycle of relay outputs - Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts nax. 10 Hz  max. 1 Hz  max. 1 Hz  max. 10 Hz  max. 1 Hz  max. 10 Hz  max. 1 Hz  max. 1 Hz  max. 10 Hz  max. 10 Hz  max. 1 Hz  max. 10	Parallel switching of outputs for increased power	not possible
Switching frequency with inductive load max. 0.5 Hz  Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage - Short-circuit protection of output - Trigger level - Number of operating cycle of relay outputs - Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts name was a constant of the consta	Actuation of digital input	✓
Switching frequency on lamp load max. 1 Hz  Internal limitation of inductive shut-off voltage  Short-circuit protection of output  Trigger level  Number of operating cycle of relay outputs  Switching capacity of contacts  Output data size  Status information, alarms, diagnostics  Status display  green LED per channel  Interrupts  max. 1 Hz  max. 1 Hz  max. 1 Hz  Examples 1 Hz  Figure 1 Hz  Figure 2 Hz  Figure 2 Hz  Figure 3 Hz  Figure 3 Hz  Figure 3 Hz  Figure 3 Hz  Figure 4 Hz  Fi	Switching frequency with resistive load	max. 10 Hz
Internal limitation of inductive shut-off voltage  Short-circuit protection of output  Trigger level  Number of operating cycle of relay outputs  Switching capacity of contacts  5 A  Output data size  Status information, alarms, diagnostics  Status display  Interrupts  preen LED per channel  Interrupts	Switching frequency with inductive load	max. 0.5 Hz
Short-circuit protection of output - Trigger level - Number of operating cycle of relay outputs - Switching capacity of contacts 5 A Output data size 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching frequency on lamp load	max. 1 Hz
Trigger level	Internal limitation of inductive shut-off voltage	-
Number of operating cycle of relay outputs - Switching capacity of contacts 5 A Output data size 2 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Short-circuit protection of output	-
Switching capacity of contacts 5 A  Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel  Interrupts no	Trigger level	-
Output data size 2 Byte  Status information, alarms, diagnostics  Status display green LED per channel Interrupts no	Number of operating cycle of relay outputs	-
Status information, alarms, diagnostics Status display green LED per channel Interrupts no	Switching capacity of contacts	5 A
Status display green LED per channel Interrupts no	Output data size	2 Byte
Interrupts no	Status information, alarms, diagnostics	
	Status display	green LED per channel
Process alarm no	Interrupts	no
TIO	Process alarm	no



Diagnostic interrupt	no A YASKAWA COMPA
Diagnostic functions	no
Diagnostics information read-out	none
Supply voltage display	none
Group error display	none
Channel error display	none
Isolation	
Between channels	✓
Between channels of groups to	8
Between channels and backplane bus	✓
Insulation tested with	AC 1500 V
Datasizes	
Input bytes	0
Output bytes	2
Parameter bytes	0
Diagnostic bytes	0
Housing	
Material	PPE
Mounting	Rail System 300
Mechanical data	
Dimensions (WxHxD)	40 mm x 125 mm x 120 mm
Weight	290 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL508 certification	yes