

## Data sheet

FM 050 (050-1BB00)

## Technical data

Type	Order no.	050-1BB00
Reserve   Counter   Coun	Туре	FM 050
Note - Current consumption/power loss  Current consumption/power loss  Current consumption from backplane bus 75 mA  Power loss 0.9 W  Technical data digital inputs  Number of inputs 4  Cable length, shielded 100 m  Cable length, unshielded - Cable length, unshielded - Cable length, unshielded - Carrent consumption from load voltage L+ (without load) 15 mA  Rated load voltage Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal 101 DC 05 V  Input voltage for signal 111 DC 1528.8 V  Input voltage for signal 111 DC 1528.8 V  Input voltage hysteresis - Frequency range - Input resistance - Input current for signal 111 3 mA  Connection of Two-Wire-BEROS possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of 101 to 111 0.8 μs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, ushielded - Carle Correct consumption from load voltage L+ (without load) - Carle Correct consumption from load voltage L+ (without load) - Carle Correct consumption from load voltage Current (without load) - Carle Correct consumption from load voltage Current (without load) - Carle Correct Correct Correct Correct (without load) - Carle Correct Co	Module ID	08C3 380A
Note - Current consumption/power loss  Current consumption/power loss  Current consumption from backplane bus 75 mA  Power loss 0.9 W  Technical data digital inputs  Number of inputs 4  Cable length, shielded 100 m  Cable length, unshielded - Cable length, unshielded - Cable length, unshielded - Carrent consumption from load voltage L+ (without load) 15 mA  Rated load voltage Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal 101 DC 05 V  Input voltage for signal 111 DC 1528.8 V  Input voltage for signal 111 DC 1528.8 V  Input voltage hysteresis - Frequency range - Input resistance - Input current for signal 111 3 mA  Connection of Two-Wire-BEROS possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of 101 to 111 0.8 μs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, ushielded - Carle Correct consumption from load voltage L+ (without load) - Carle Correct consumption from load voltage L+ (without load) - Carle Correct consumption from load voltage Current (without load) - Carle Correct consumption from load voltage Current (without load) - Carle Correct Correct Correct Correct (without load) - Carle Correct Co		
Features 2 Counter 32 Bit (AB) DC 24 V  Current consumption/power loss  Current consumption from backplane bus 75 mA  Power loss 0.9 W  Technical data digital inputs  Number of inputs 4  Cable length, shielded 100 m  Cable length, unshielded - Rated load voltage DC 20.428.8 V  Reverse polarity protection of rated load voltage - Current consumption from load voltage DC 20.428.8 V  Input voltage for signal "0" DC 20.5 V  Input voltage for signal "1" DC 1528.8 V  Input voltage for signal "1" DC 1528.8 V  Input voltage for signal "1" DC 1528.8 V  Input voltage hysteresis - Frequency range - Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA  Input delay of "1" to "0" 0.8 µs  Input delay of "1" to "0" 0.8 µs  Number of simultaneously utilizable inputs horizontal 4  configuration  Number of simultaneously utilizable inputs vertical configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs  Cable length, unshielded - Current consumption from load voltage L+ (without load) -		
Current consumption/power loss  Current consumption from backplane bus 75 mA  Power loss 0.9 W  Technical data digital inputs  Number of inputs 4  Cable length, shielded 100 m  Cable length, unshielded -  Rated load voltage DC 20.428.8 V  Reverse polarity protection of rated load voltage -  Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal "0" DC 05 V  Input voltage for signal "1" DC 1528.8 V  Input voltage for signal "1" DC 1528.8 V  Input voltage hysteresis -  Frequency range -  Input resistance -  Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 µs  Number of simultaneously utilizable inputs vortical configuration  Number of simultaneously utilizable inputs vortical configuration  Number of simultaneously utilizable inputs vortical configuration  Technical data digital outputs  Number of outputs -  Cable length, unshielded -  Cable length, unshielded -  Cable length, unshielded -  Cable length, unshielded -  Cated and a size (without load) -		
Current consumption from backplane bus 75 mA Power loss 0.9 W  Technical data digital inputs  Number of inputs 4 Cable length, shielded 100 m  Cable length, unshielded - Rated load voltage DC 20.428.8 V  Reverse polarity protection of rated load voltage - Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal "0" DC 05 V  Input voltage for signal "1" DC 1528.8 V  Input voltage for signal "1" DC 1528.8 V  Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 µs  Input delay of "0" to "1" 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, unshielded - Cate length, unshielded - Current consumption from load voltage L+ (without load) -	Features	
Power loss 0.9 W  Technical data digital inputs  Number of inputs 4 Cable length, shielded 100 m  Cable length, unshielded - Rated load voltage DC 20.428.8 V  Reverse polarity protection of rated load voltage - Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal "0" DC 05 V  Input voltage for signal "1" DC 1528.8 V  Input reliasitance - Input creation of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 µs  Input delay of "0" to "1" 0.8 µs  Input delay of "1" to "0" 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Catele length, unshielded - Catele length, unshielded - Current consumption from load voltage L+ (without load) -	Current consumption/power loss	
Technical data digital inputs  Number of inputs  4 Cable length, shielded  100 m  Cable length, unshielded  - Rated load voltage  DC 20.428.8 V  Reverse polarity protection of rated load voltage  - Current consumption from load voltage L+ (without load)  15 mA  Rated value  DC 20.428.8 V  Input voltage for signal *10*  DC 05 V  Input voltage for signal *14*  DC 1528.8 V  Input voltage for signal *14*  DC 1528.8 V  Input voltage for signal *14*  DC 1528.8 V  Input voltage hysteresis  - Frequency range  Input current for signal *1*  3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  0.5 mA  Input delay of *0* to *1*  0.8 μs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Vertical data digital outputs  Technical data digital outputs  Number of outputs  Cable length, shielded  - Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)  -	Current consumption from backplane bus	75 mA
Number of inputs 4 Cable length, shielded 100 m Cable length, unshielded	Power loss	0.9 W
Cable length, shielded 100 m  Cable length, unshielded - Rated load voltage DC 20.428.8 V  Reverse polarity protection of rated load voltage - Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal *0" DC 05 V  Input voltage for signal *1" DC 1528.8 V  Input voltage for signal *1" DC 1528.8 V  Input voltage hysteresis - Frequency range - Input resistance - Input resistance - Input resistance - Input courrent for signal *1" 3 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of *0" to *1* 0.8 µs  Input delay of *0" to *1* 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Technical data digital inputs	
Cable length, unshielded - Rated load voltage DC 20.428.8 V Reverse polarity protection of rated load voltage - Current consumption from load voltage L+ (without load) 15 mA Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal *1" DC 1528.8 V Input voltage for signal *1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 µs Input delay of "0" to "1" 0.8 µs Input delay of *1" to "0" 0.8 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Number of inputs	4
Rated load voltage DC 20.428.8 V Reverse polarity protection of rated load voltage - Current consumption from load voltage L+ (without load) 15 mA Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "4" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 µs Input delay of "1" to "0" 0.8 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input delay at a light at a size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Cable length, shielded	100 m
Reverse polarity protection of rated load voltage  Current consumption from load voltage L+ (without load) 15 mA  Rated value DC 20.428.8 V  Input voltage for signal "0" DC 05 V  Input voltage for signal "1" DC 1528.8 V  Input voltage hysteresis Frequency range Input resistance Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs Cable length, shielded Cable length, unshielded Rated load voltage L+ (without load)	Cable length, unshielded	-
Current consumption from load voltage L+ (without load)  Rated value  DC 20.428.8 V  Input voltage for signal "0"  DC 05 V  Input voltage for signal "1"  DC 1528.8 V  Input voltage hysteresis  - Frequency range  - Input resistance  Input current for signal "1"  3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  0.5 mA  Input delay of "0" to "1"  0.8 µs  Input delay of "1" to "0"  0.8 µs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  4  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  - Cable length, shielded  - Rated load voltage  - Current consumption from load voltage L+ (without load)  -	Rated load voltage	DC 20.428.8 V
Rated value DC 20.428.8 V Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 µs Input delay of "0" to "1" 0.8 µs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Reverse polarity protection of rated load voltage	-
Input voltage for signal "0" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 μs Input delay of "1" to "0" 0.8 μs Input delay of "1" to "0" 0.8 μs Input delay of "1" to "0" 1.8 μs Input delay of "1" to "1" 1.8 μs Input delay of "1" 1.8 μs Input delay	Current consumption from load voltage L+ (without load)	15 mA
Input voltage for signal "1" DC 1528.8 V Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 µs Input delay of "1" to "0" 0.8 µs Number of simultaneously utilizable inputs horizontal configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Rated value	DC 20.428.8 V
Input voltage hysteresis - Frequency range - Input resistance - Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible   Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 μs Input delay of "1" to "0" 0.8 μs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration 4  Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Input voltage for signal "0"	DC 05 V
Frequency range Input resistance Input current for signal "1" 3 mA Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA Input delay of "0" to "1" 0.8 μs Input delay of "1" to "0" 0.8 μs Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration 4 Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Input voltage for signal "1"	DC 1528.8 V
Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 µs  Input delay of "1" to "0" 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs -  Cable length, shielded -  Cable length, unshielded -  Rated load voltage -  Current consumption from load voltage L+ (without load) -	Input voltage hysteresis	-
Input current for signal "1" 3 mA  Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current 0.5 mA  Input delay of "0" to "1" 0.8 μs  Input delay of "1" to "0" 0.8 μs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs -  Cable length, shielded -  Cable length, unshielded -  Rated load voltage -  Current consumption from load voltage L+ (without load) -	Frequency range	-
Connection of Two-Wire-BEROs possible  Max. permissible BERO quiescent current  Input delay of "0" to "1"  0.8 μs  Input delay of "1" to "0"  0.8 μs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  Cable length, shielded  - Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)	Input resistance	-
Max. permissible BERO quiescent current  Input delay of "0" to "1"  Input delay of "1" to "0"  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  Cable length, shielded  - Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)	Input current for signal "1"	3 mA
Input delay of "0" to "1" 0.8 µs  Input delay of "1" to "0" 0.8 µs  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration 4  Input characteristic curve IEC 61131-2, type 1  Initial data size 12 Byte  Technical data digital outputs  Number of outputs -  Cable length, shielded -  Cable length, unshielded -  Rated load voltage -  Current consumption from load voltage L+ (without load) -	Connection of Two-Wire-BEROs possible	✓
Input delay of "1" to "0"  Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  Cable length, shielded  - Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  -	Max. permissible BERO quiescent current	0.5 mA
Number of simultaneously utilizable inputs horizontal configuration  Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  Cable length, shielded  - Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)	Input delay of "0" to "1"	0.8 µs
Number of simultaneously utilizable inputs vertical configuration  Input characteristic curve  IEC 61131-2, type 1  Initial data size  12 Byte  Technical data digital outputs  Number of outputs  - Cable length, shielded  - Cable length, unshielded  Rated load voltage  - Current consumption from load voltage L+ (without load)  - Current consumption from load voltage L+ (without load)	Input delay of "1" to "0"	0.8 µs
Input characteristic curve IEC 61131-2, type 1 Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -		4
Initial data size 12 Byte  Technical data digital outputs  Number of outputs - Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Number of simultaneously utilizable inputs vertical configuration	4
Technical data digital outputs  Number of outputs  Cable length, shielded  Cable length, unshielded  Rated load voltage  Current consumption from load voltage L+ (without load)  -	Input characteristic curve	IEC 61131-2, type 1
Number of outputs  Cable length, shielded  Cable length, unshielded  Rated load voltage  - Current consumption from load voltage L+ (without load)  -	Initial data size	12 Byte
Cable length, shielded - Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Technical data digital outputs	
Cable length, unshielded - Rated load voltage - Current consumption from load voltage L+ (without load) -	Number of outputs	-
Rated load voltage -  Current consumption from load voltage L+ (without load) -	Cable length, shielded	-
Current consumption from load voltage L+ (without load) -	Cable length, unshielded	-
	Rated load voltage	-
Output delay of "0" to "1" -	Current consumption from load voltage L+ (without load)	-
	Output delay of "0" to "1"	-



Minimum load current Lamp load Parallel switching of outputs for redundant control of a lead Parallel switching of outputs for increased power Parallel switching for outputs for increased power Parallel switching frequency with resistive load Switching frequency with inductive load Switching frequency with inductive load Switching frequency on lamp load Internal limitation of inductive shut-off voltage Short-circuit protection of output Short-circuit protection of output Principal limitation of inductive shut-off voltage Short-circuit protection of output Switching capacity of contacts  1	Output delay of "1" to "0"	A YASKAWA COMPANY
Parallel switching of outputs for redundant control of a load Parallel switching of outputs for increased power Achation of digital input Switching frequency with resistive load Switching frequency with inductive shut-off votage Short-circuit protection of output Short-circuit protection of output Short-circuit protection of output Switching capacity of contacts  Switching capacity of contacts  Cutput data size 12 Byte  Tachnical data counters  Counter with Saz Bit Maximum input frequency Maximum input frequency Mode pulse / direction Mode pulse wastable Lach input available Lach input available Counter output available Counter output available Status information, alarms, diagnostics Status display  yes, parameterizable Diagnostic information read-out Module state Module state Diagnostic information read-out Module state Module state Status information read-out Module state Status finerupt Diagnostic information read-out Module state Module state Status information read-out Module state Module state Module state Status information read-out Module state Status information read-out Module state Status information read-out Module state Module state Status information read-out Module state Module state Status information read-out Module state Status information read-out Module state Module state Status information read-out M	Minimum load current	-
Parallel switching of outputs for increased power Actuation of digital input Actuation of digital input Switching frequency with resistive load Switching frequency on lamp load Internal limitation of inductive shut-off voltage Switching frequency on lamp load Internal limitation of inductive shut-off voltage Internal limitation of inductive shut-off voltage Frigger level Number of operating cycle of relay outputs Switching capacity of contacts  Output data size  Technical data counters Number of counters  Number of counters  Reserved Maximum nount frequency Mode incremental encoder  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Pesset input available  Caunter output available  Status information, alarms, diagnostics  Status information of pulse / direction  yes, parameterizable  Diagnostic functions  yes, parameterizable  Diagnostic functions  yes, parameterizable  Diagnostic information read-out  Modulie aror display  red LED  Channel error display	Lamp load	-
Actuation of digital input - Switching frequency with resistive load - Switching frequency with resistive load - Switching frequency on lamp load - Internal limitation of inductive shut-off voltage - Short-circult protection of output - STrigger level - Short-circult protection of output - Switching repair yold or relay outputs - Switching capacity of contacts - Iza Byte - Switching capacity of contacts - Iza Byte	Parallel switching of outputs for redundant control of a load	-
Switching frequency with resistive load - Switching frequency with inductive shu-off voltage - Short-circuit protection of output - Trigger level - Number of operating cycle of relay outputs - Switching capacity of contacts - Surtching capacity of contacts - Cutput data size 12 Byte  Technical data counters  Number of ocunters 2 Surtching capacity of contacts - Surtching capacity capacity - Surtching capa	Parallel switching of outputs for increased power	-
Switching frequency with inductive load	Actuation of digital input	-
Switching frequency on lamp toad Internal limitation of inductive shut-off voltage Short-circuit protection of output 7- Trigger level Number of operating cycle of relay outputs Switching capacity of contacts Cutput data size 12 Byte  Technical data counters Number of counters  2 Counter width 32 Bit Maximum input frequency Maximum count frequency Mode incremental encoder Mode piles / direction Mode prod measurement Gate input available Latch input available Counter output available Reset input available Status display Testus silemment Status display Process alarm Diagnostic interrupt Diagnostic interrupt Module state Module state Module state Module state Module state Module state Module error display Retween channels and backplane bus Between channels and power supply Meximum count frequency  Process allern Between channels and power supply Meximum count and inference between circuits  ### Counter output difference between circuits #### Counter output of the counter output output of the counter output outpu	Switching frequency with resistive load	-
Internal limitation of inductive shut-off voltage	Switching frequency with inductive load	-
Short-circuit protection of output Trigger level Number of operating cycle of relay outputs Switching capacity of contacts Output data size 12 Byte  Technical data counters Number of counters Number of counters  Number of counters 2 Counter width 32 Bit Maximum input frequency 100 kHz Maximum count frequency 400 kHz Mode incremental encoder Mode pulse / direction  Sate input available 1- Counter output available 1- Status information, alarms, diagnostics Status information, alarms, diagnostics Status information interpolation Diagnostic interrupt Diagnostic interrupt Diagnostic interrupt Diagnostics information read-out Module state Module state Module state Module state Module orror display Reserved Annels and power supply Between channels and power supply Max. potential difference between circuits  Between channels and power supply Max. potential difference between circuits	Switching frequency on lamp load	-
Trigger level Number of operating cycle of relay outputs Switching capacity of contacts Cutput data size 12 Byte  Technical data counters Number of counters 2 Counter width Maximum fiput frequency Mode frequency Mode incremental encoder  Mode pulse / direction  Mode pulse  Mode pulse  Tequin available  Latch input available  Counter output available  Status information, alarms, diagnostics  Status display  Process alarm  Diagnostic functions  Diagnostic functions  Diagnostic functions  yes, parameterizable  Diagnostic information read-out  possible  Module error display  Rote LED  Module error display  Possible  Module error display  Possible  Module error display  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Between channels and power supply  Max. potential difference between circuits  12 Byte  2 Counter output ald alference between circuits  13 Byte  14 Byte  15 Byte  16 Byte  17 Byte  18 Byte  18 Byte  18 Byte  18 Byte  19 Byte  19 Byte  10 Byt	Internal limitation of inductive shut-off voltage	-
Number of operating cycle of relay outputs         -           Switching capacity of contacts         -           Output data size         12 Byte           Technical data counters           Number of counters         2           Counter width         32 Bit           Maximum input frequency         400 kHz           Meximum count frequency         400 kHz           Mode incremental encoder         ✓           Mode pulse / direction         ✓           Mode priod measurement         -           Gate input available         -           Latch input available         -           Latch input available         -           Counter output available         -           Status information, alarms, diagnostics         Status display           Status display         yes           Process alarm         yes, parameterizable           Diagnostic function         yes, parameterizable           Diagnostic functions         yes, parameterizable	Short-circuit protection of output	-
Switching capacity of contacts         -           Output data size         12 Byte           Technical data counters           Number of counters         2           Counter width         32 Bit           Maximum input frequency         100 kHz           Maximum count frequency         400 kHz           Mode incremental encoder         ✔           Mode pulse / direction         ✔           Mode prejor direction         -           Status display         -           Status information, alarms, diagnostics         Status display           Process alarm         yes, parameterizable           Diagnostic interrupt         yes, parameterizable           Diagnostic functions         yes, parameterizable           Diagnostic functions         yes, parameterizable	Trigger level	-
Output data size         12 Byte           Technical data counters         2           Number of counters         2           Counter width         32 Bit           Maximum input frequency         400 kHz           Maximum count frequency         400 kHz           Mode incremental encoder         ✓           Mode pulse / direction         ✓           Mode pulse         -           Mode period measurement         -           Gate input available         -           Latch input available         -           Reset input available         -           Counter output available         -           Status information, alarms, diagnostics         Status information, alarms, diagnostics           Status display         yes           Process alarm         yes, parameterizable           Process alarm         yes, parameterizable           Diagnostic interrupt         yes, parameterizable           Diagnostic functions         yes, parameterizable           Diagnostic information read-out         possible           Module state         green LED           Module state         green LED           Module state         green LED           To annel error display         n	Number of operating cycle of relay outputs	-
Number of counters  Pechnical data counters  2 Counter width 32 Bit Maximum input frequency 100 KHz Maximum count frequency 400 kHz Mode incremental encoder  Mode pulse / direction  Mode pulse / direction  Mode provide frequency counter Mode provide frequency evaluate Mode frequency counter	Switching capacity of contacts	-
Number of counters Counter width 32 Bit Maximum input frequency 100 kHz Maximum count frequency 400 kHz Mode incremental encoder Mode pulse / direction Mode pulse / direction Mode proling a surrement Mode proling a surrement Gate input available Latch input available Latch input available Latch input available Counter output available Counter output available Status display Ves Status display Ves Interrupts Ves, parameterizable Diagnostic interrupt Diagnostic interrupt Module state Module error display Tead to the formation read-out Mode proling with the formation read-out Mode pulse / diagnostics  Is a surrection with the formation read-out Module error display Research annels Diagnostic information read-out Module error display Red LED Channel error display Red LED Channel error display Retween channels Detween channels of groups to Detween channels of groups to Detween channels and backplane bus Detween channels and power supply Detaction Detween channels and power supply Detaction Detween channels and power supply Detaction of the formation read-out with the formation read-out with the formation read-out with the formation read-out with the formation read-out pulse of the formation read-out puls	Output data size	12 Byte
Number of counters Counter width 32 Bit Maximum input frequency 100 kHz Maximum count frequency 400 kHz Mode incremental encoder Mode pulse / direction Mode pulse / direction Mode proling a surrement Mode proling a surrement Gate input available Latch input available Latch input available Latch input available Counter output available Counter output available Status display Ves Status display Ves Interrupts Ves, parameterizable Diagnostic interrupt Diagnostic interrupt Module state Module error display Tead to the formation read-out Mode proling with the formation read-out Mode pulse / diagnostics  Is a surrection with the formation read-out Module error display Research annels Diagnostic information read-out Module error display Red LED Channel error display Red LED Channel error display Retween channels Detween channels of groups to Detween channels of groups to Detween channels and backplane bus Detween channels and power supply Detaction Detween channels and power supply Detaction Detween channels and power supply Detaction of the formation read-out with the formation read-out with the formation read-out with the formation read-out with the formation read-out pulse of the formation read-out puls		
Counter width 32 Bit  Maximum input frequency 100 kHz  Maximum count frequency 400 kHz  Mode incremental encoder  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode prevention		
Maximum input frequency  Maximum count frequency  Mode incremental encoder  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode frequency counter  Mode period measurement  Gate input available  Latch input available  Latch input available  Counter output available  Status information, alarms, diagnostics  Status display  Yes, parameterizable  Process alarm  Diagnostic interrupt  Diagnostic interrupt  Diagnostic interrupt  Diagnostics information read-out  Module state  Module error display  red LED  Module error display  Petween channels  Between channels of groups to  Between channels and power supply  Max. potential difference between circuits   ### Augustian and power supply  Max. potential difference between circuits  #### Augustian and power supply  ##### Augustian and power supply  ##### Augustian and power supply  ##### Augustian and power supply  ######### Augustian and power supply  ##################################	Number of counters	2
Maximum count frequency  Mode incremental encoder  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode pulse / direction  Mode frequency counter  Mode frequency counter  Mode period measurement  Gate input available  Latch input available  Reset input available  Counter output available  Status information, alarms, diagnostics  Status display  yes Interrupts  Yes, parameterizable  Process alarm  yes, parameterizable  Diagnostic interrupt  yes, parameterizable  Diagnostic functions  yes, parameterizable  Diagnostic information read-out  Module state  Module state  Module error display  red LED  Channel error display  Reset input available  1		32 Bit
Mode pulse / direction  Mode provided frequency counter	Maximum input frequency	100 kHz
Mode pulse / direction  Mode pulse	Maximum count frequency	400 kHz
Mode pulse  Mode frequency counter  Mode period measurement  Gate input available  Latch input available  Reset input available  Counter output available  Status information, alarms, diagnostics  Status display yes .  Interrupts yes, parameterizable .  Diagnostic interrupt yes, parameterizable .  Diagnostic interrupt possible .  Diagnostic information read-out possible .  Module state green LED .  Module error display red LED .  Channel error display none .  Status display red LED .  Between channels .  Between channels of groups to .  Between channels and backplane bus .  Between channels and power supply .  Max. potential difference between circuits .	Mode incremental encoder	✓
Mode frequency counter  Mode period measurement Gate input available Latch input available Reset input available Counter output available Counter output available Status information, alarms, diagnostics Status display  Interrupts  Process alarm  Process alarm  Process alarm  Process alarm  Programeterizable  Diagnostic interrupt  Diagnostic functions  Prosible  Module state  Module state  Module error display  Channel error display  Between channels  Between channels of groups to  Between channels and power supply  Max. potential difference between circuits  -  -  -  -  -  -  -  -  -  -  -  -  -	Mode pulse / direction	✓
Mode period measurement -   Gate input available -   Latch input available -   Reset input available -   Counter output available -   Status information, alarms, diagnostics   Status display yes   Interrupts yes, parameterizable   Process alarm yes, parameterizable   Diagnostic interrupt yes, parameterizable   Diagnostic functions yes, parameterizable   Diagnostic information read-out possible   Module state green LED   Module error display red LED   Channel error display none   Isolation -   Between channels -   Between channels of groups to -   Between channels and backplane bus    ■   Between channels and power supply -   Max. potential difference between circuits -	Mode pulse	-
Gate input available       -         Latch input available       -         Reset input available       -         Counter output available       -         Status information, alarms, diagnostics         Status display         Interrupts       yes, parameterizable         Process alarm       yes, parameterizable         Diagnostic interrupt       yes, parameterizable         Diagnostic functions       yes, parameterizable         Diagnostics information read-out       possible         Module state       green LED         Module error display       red LED         Channel error display       none         Isolation         Between channels       -         Between channels of groups to       -         Between channels and backplane bus       ✓         Between channels and power supply       -         Max. potential difference between circuits       -	Mode frequency counter	-
Latch input available -   Reset input available -   Counter output available -   Status information, alarms, diagnostics   Status display yes   Interrupts yes, parameterizable   Process alarm yes, parameterizable   Diagnostic interrupt yes, parameterizable   Diagnostic functions yes, parameterizable   Diagnostics information read-out possible   Module state green LED   Module error display red LED   Channel error display none   Isolation -   Between channels -   Between channels of groups to -   Between channels and backplane bus    ✓   Between channels and power supply -   Max. potential difference between circuits -	Mode period measurement	-
Reset input available Counter output available Counter output available  Status information, alarms, diagnostics  Status display yes Interrupts yes, parameterizable Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes, parameterizable Diagnostic sinformation read-out possible Module state green LED Module error display red LED Channel error display red LED Selveen channels Between channels of groups to Between channels and backplane bus Between channels and power supply  Max. potential difference between circuits	Gate input available	-
Counter output available         Status information, alarms, diagnostics         Status display       yes         Interrupts       yes, parameterizable         Process alarm       yes, parameterizable         Diagnostic interrupt       yes, parameterizable         Diagnostic functions       yes, parameterizable         Diagnostics information read-out       possible         Module state       green LED         Module error display       red LED         Channel error display       none         Isolation         Between channels       -         Between channels of groups to       -         Between channels and backplane bus       ✓         Between channels and power supply       -         Max. potential difference between circuits       -	Latch input available	-
Status information, alarms, diagnostics  Status display yes Interrupts yes, parameterizable Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes, parameterizable Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display none  Isolation  Between channels Between channels of groups to Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  - Searameterizable pess, parameterizable pess, parameterizable pess, parameterizable pess, parameterizable possible possible possible product ED  - Channel error display possible product ED  - Channel error display possible p	Reset input available	-
Status display Interrupts yes, parameterizable Process alarm yes, parameterizable Diagnostic interrupt yes, parameterizable Diagnostic functions yes, parameterizable Diagnostic functions yes, parameterizable Diagnostic functions yes, parameterizable Diagnostics information read-out possible Module state green LED Module error display red LED Channel error display none  Isolation  Between channels Between channels Between channels of groups to Between channels and backplane bus Between channels and power supply	Counter output available	-
Interrupts Process alarm Proce	Status information, alarms, diagnostics	
Process alarm  Diagnostic interrupt  Diagnostic functions  Diagnostics information read-out  Module state  Module error display  Channel error display  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  yes, parameterizable  possible  file of the parameterizable  yes, parameterizable  possible  possible  prod LED  none	Status display	yes
Diagnostic interrupt Diagnostic functions Ves, parameterizable Diagnostics information read-out Diagnostics information read-out Module state Module error display Ted LED Channel error display Ted LED The company to	Interrupts	yes, parameterizable
Diagnostic functions  Diagnostics information read-out  Module state  Module error display  Channel error display  Ted LED  Retween channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  possible  green LED  red LED  none	Process alarm	yes, parameterizable
Diagnostics information read-out possible  Module state green LED  Module error display red LED  Channel error display none  Isolation  Between channels - Between channels of groups to - Between channels and backplane bus  Between channels and power supply - Max. potential difference between circuits	Diagnostic interrupt	yes, parameterizable
Module state green LED  Module error display red LED  Channel error display none  Isolation  Between channels - Between channels of groups to - Between channels and backplane bus  Between channels and power supply - Max. potential difference between circuits -	Diagnostic functions	yes, parameterizable
Module error display red LED  Channel error display none  Isolation  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  red LED  none  red LED  none  -  4  -  5  -  6  -  7  6  -  8  Max. potential difference between circuits  red LED  none	Diagnostics information read-out	possible
Isolation  Between channels of groups to - Between channels and backplane bus  Between channels and power supply - Max. potential difference between circuits none  none  none  none	Module state	green LED
Isolation  Between channels - Between channels of groups to - Between channels and backplane bus   Between channels and power supply - Max. potential difference between circuits -	Module error display	red LED
Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  -  -  -  -  -  -  -  -  -  -  -  -  -	Channel error display	none
Between channels of groups to  Between channels and backplane bus  Between channels and power supply  Max. potential difference between circuits  -  -  -  -  -  -  -  -  -  -  -  -  -	Isolation	
Between channels and backplane bus  Between channels and power supply	Between channels	-
Between channels and power supply -  Max. potential difference between circuits -	Between channels of groups to	-
Max. potential difference between circuits -	Between channels and backplane bus	✓
	Between channels and power supply	-
Max. potential difference between inputs (Ucm)	Max. potential difference between circuits	-
	Max. potential difference between inputs (Ucm)	-



Max. potential difference between Mana and Mintern (Uiso)	- A YASKAWA C	OMPANY
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	12	
Output bytes	12	
Parameter bytes	45	
Diagnostic bytes	20	
Housing		
Material	PPE / PPE GF10	
Mounting	Profile rail 35 mm	
Mechanical data		
Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm	
Weight	60 g	
Environmental conditions		
Operating temperature	0 °C to 60 °C	
Storage temperature	-25 °C to 70 °C	
Certifications		
UL508 certification	yes	