

Data sheet EM 123 (123-4EH01)

## Technical data

Order no.	123-4EH01
Туре	EM 123
General information	
Note	-
Features	8 inputs/ 8 outputs DC 24 V
Current consumption/power loss	
Current consumption from backplane bus	60 mA
Power loss	3 W
Technical data digital inputs	
Number of inputs	8
Cable length, shielded	1000 m
Cable length, unshielded	600 m
Rated load voltage	-
Current consumption from load voltage L+ (without load)	-
Rated value	DC 24 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"	7 mA
Connection of Two-Wire-BEROs possible	yes
Max. permissible BERO quiescent current	1.5 mA
Input delay of "0" to "1"	3 ms
Input delay of "1" to "0"	3 ms
Number of simultaneously utilizable inputs horizontal configuration	8
Number of simultaneously utilizable inputs vertical configuration	8
Input characteristic curve	IEC 61131-2, type 1
Initial data size	1 Byte
Technical data digital outputs	
Number of outputs	8
Cable length, shielded	1000 m
Cable length, unshielded	600 m
Rated load voltage	DC 24 V
Reverse polarity protection of rated load voltage	-
Current consumption from load voltage L+ (without load)	20 mA
Output current at signal "1", rated value	0.5 A
Output delay of "0" to "1"	max. 100 µs



Minimum load current	Output delay of "1" to "0"	max. 350 µs	A YASKAWA COMPANY
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. 0.05 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency with inductive load max. 0.10 Hz Internal limitation of inductive shul-off voltage L+ (52 V) Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching reapenty of contacts - Output data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic functions no Diagnostic information read-out none Stopply voltage display none Group error display none  Channel error display none  Eletween channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 5000 V  Datasizes Input bytes 2 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE / PA 6.6 Mounting PPE / PA 6.8	Minimum load current	-	
Parallel switching of outputs for increased power Actuation of digital input yes Switching frequency with resistive load max. 1000 Hz Switching frequency on lamp load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal ilmitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out supply voltage display none Group error display none  Isolation Between channels of groups to Between channels and backplane bus pes Insulation tested with DC 500 V  Datasizes Insulation tested with PPE / PA 6.6 Mounting Profile and 35 mm  Mechanical data Dimensions (W+thO) 101.6 mm x 76 mm x 48 mm Mechanical data Dimensions (W+thO) 101.6 mm x 76 mm x 48 mm Mechanical conditions Cperating temperature 0 °C to 60 °C  Environmental conditions Cperating temperature 0 °C to 60 °C  Environmental conditions Cperating temperature 0 °C to 60 °C	Lamp load	5 W	
Actuation of digital input  Switching frequency with resistive load  max. 1000 Hz  Switching frequency with resistive load  max. 0.5 Hz  Switching frequency on lamp load  max. 10 Hz  Internal limitation of inductive shut-off voltage  L+ (-52 V)  Short-circuit protection of output  yes, electronic  Trigger level  1 A  Number of operating cycle of relay outputs  - Switching capacity of contacts  - Output data size  1 Byte  Status information, alarms, diagnostics  Status display  Interrupts  no  Diagnostic interrupt  no  Diagnostic interrupt  no  Diagnostic information read-out  pone  Supply voltage display  none  Group error display  none  Solation  Seletween channels  Isolation  Between channels of groups to  Between channels and backplane bus  pes leven channels of groups to  Between channels and backplane bus  pust bytes  2  Parameter bytes  0  Diagnostic bytes  0  Housing  Meterial  PPE / PA 6.6  Mounting  Profile rail 35 mm  Mechanical data  Dimensions (WHthXD)  10 "C to 60 "C  Environmental conditions  O "C to 60 "C  Environmental conditions  Operating temperature  0 "C to 60 "C  Environmental conditions  Operating temperature	Parallel switching of outputs for redundant control of a load	not possible	
Switching frequency with resistive load max. 1000 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage Short-circuit protection of output yes, electronic Trigger level 1A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic information read-out none Diagnostic information read-out none Supply voltage display none Channel error display none  Status interrupt none  Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes  Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes  Degrees 10 PPC /PA 6.6 Mounting PPC if it is in mx 76 mm x 48 mm  Mechanical data  Dimensions (Whxhx) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C  Environmental conditions  Operating temperature 0 °C to 60 °C	Parallel switching of outputs for increased power	not possible	
Switching frequency with inductive load max. 0.5 Hz Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output Trigger level 1A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none Group error display none Channel error display none Between channels of groups to 8 Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Darameter bytes 0 Diagnostic bytes 0 Housing Material PPE / PA 6.8 Mounting Profile rail 35 mm  Mechanical data Dimensions (WH-KD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C  Decating temperature	Actuation of digital input	yes	
Switching frequency on lamp load max. 10 Hz Internal limitation of inductive shut-off voltage L+ (-52 V) Short-circuit protection of output yes, electronic Trigger level 1A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostic functions no Diagnostic functions no Supply voltage display none Group error display none Channel error display none Setween channels of groups to 8 Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WH-KD) 101.6 mm x 76 mm x 48 mm Wedght = 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C  Environmental conditions  Operating temperature	Switching frequency with resistive load	max. 1000 Hz	
Internal limitation of inductive shut-off voltage	Switching frequency with inductive load	max. 0.5 Hz	
Short-circuit protection of output yes, electronic Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte  Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none Channel error display none Supply voltage display none Channel error display none  Statuse channels of groups to 8 Between channels of groups to 8 Between channels of between channels of DC 500 V  Datasizes  Housing Material PPE / PA 6.8 Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 10.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C  Province of the province of the properative of the conditions  Operating temperature  O °C to 60 °C   I Byte  I A  I A  I A  I A  I A  I A  I A  I	Switching frequency on lamp load	max. 10 Hz	
Trigger level 1 A Number of operating cycle of relay outputs - Switching capacity of contacts - Output data size 1 Byte  Status information, alarms, diagnostics Status display green LED per channel Interrupts no Diagnostic interrupt no Diagnostic interrupt no Diagnostic interrupt no Diagnostic information read-out none Supply voltage display none Group error display none Channel error display none Between channels of groups to 8 Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing Meterial PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Internal limitation of inductive shut-off voltage	L+ (-52 V)	
Number of operating cycle of relay outputs  - Switching capacity of contacts  Output data size  1 Byte  Status information, alarms, diagnostics  Status display  green LED per channel Interrupts  no Process alarm  no Diagnostic interrupt  no Diagnostic interrupt  no Diagnostic sinformation read-out  none Supply voltage display  none Group error display  none  Housing  Between channels of groups to Between channels of groups to Between channels and backplane bus  pressible sinformation tested with  DC 500 V  Datasizes  Input bytes  2  Output bytes  2  Parameter bytes  0  Diagnostic bytes  0  Housing  Material  PPE / PA 6.6  Mounting  Profile rail 35 mm  Mechanical data  Dimensions (WxHxD)  10.16 mm x 76 mm x 48 mm  Weight  22.2  Environmental conditions  Operating temperature  0 °C to 60 °C	Short-circuit protection of output	yes, electronic	
Switching capacity of contacts         -           Output data size         1 Byte           Status information, alarms, diagnostics           Status display         green LED per channel           Interrupts         no           Process alarm         no           Diagnostic interrupt         no           Diagnostic functions         no           Diagnostic 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         yes           Insulation tested with         DC 500 V           Datasizes           Input bytes         2           Output bytes         2           Parameter bytes         0           Diagnostic bytes         0           Housing         Profile rail 35 mm           Mechanical data         Dimensions (WxHxD)         101.6 mm x 76 mm x 48 mm           Weight         222 g           Environmental conditions           Operating temperature         0 °C to	Trigger level	1 A	
Output data size         1 Byte           Status Information, alarms, diagnostics           Status display         green LED per channel           Interrupts         no           Process alarm         no           Diagnostic interrupt         no           Diagnostic interrupt         no           Diagnostic 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         yes           Insulation tested with         DC 500 V           Datasizes         Input bytes           Output bytes         2           Output bytes         2           Parameter bytes         0           Diagnostic bytes         0           Housing         Material           Mechanical data         Profile rail 35 mm           Mechanical data         Dimensions (WxHxD)         101.6 mm x 76 mm x 48 mm           Weight         222 g           Environmental conditions           Operating temperature         0 °C to 60	Number of operating cycle of relay outputs	-	
Status information, alarms, diagnostics  Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no 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 yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic tytes 0  Housing Mechanical data Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 0 °C to 60 °C	Switching capacity of contacts	-	
Status display green LED per channel Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Camply voltage display none Group error display none Channel error display none  Solation  Setween channels Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Upply toytes 2 Parameter bytes 0 Diagnostic bytes 0 Diagnostic bytes 0  Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Output data size	1 Byte	
Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostic sinformation read-out none Supply voltage display none Croup error display none  Isolation Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WXHXD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Status information, alarms, diagnostics		
Interrupts no Process alarm no Diagnostic interrupt no Diagnostic functions no Diagnostic sinformation read-out none Supply voltage display none Croup error display none  Isolation Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0 Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WXHXD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C		green LED per channel	
Diagnostic interrupt	Interrupts	no	
Diagnostic functions	Process alarm	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 yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WXHXD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Diagnostic interrupt	no	
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 yes Insulation tested with DC 500 V  Datasizes  Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Diagnostic functions	no	
Group error display none Channel error display none  Isolation  Between channels  Between channels of groups to 8  Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing  Material PPE / PA 6.6  Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Diagnostics information read-out	none	
Channel error display none  Isolation  Between channels - Between channels of groups to 8  Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing  Material PPE / PA 6.6  Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Supply voltage display	none	
Solation	Group error display	none	
Between channels - Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Channel error display	none	
Between channels - Between channels of groups to 8 Between channels and backplane bus yes Insulation tested with DC 500 V  Datasizes Input bytes 2 Output bytes 2 Parameter bytes 0 Diagnostic bytes 0  Housing Material PPE / PA 6.6 Mounting Profile rail 35 mm  Mechanical data Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm Weight 222 g  Environmental conditions Operating temperature 0 °C to 60 °C	Isolation		
Between channels of groups to  Between channels and backplane bus  Jes Insulation tested with  DC 500 V   Datasizes  Input bytes  2 Output bytes  2 Parameter bytes  0 Diagnostic bytes  0  Housing  Material  PPE / PA 6.6  Mounting  Profile rail 35 mm   Mechanical data  Dimensions (WxHxD)  101.6 mm x 76 mm x 48 mm  Weight  222 g  Environmental conditions  Operating temperature  0 °C to 60 °C		-	
Between channels and backplane bus  Insulation tested with  DC 500 V   Datasizes  Input bytes  2  Output bytes  2  Parameter bytes  0  Diagnostic bytes  0  Housing  Material  PPE / PA 6.6  Mounting  Profile rail 35 mm   Mechanical data  Dimensions (WxHxD)  101.6 mm x 76 mm x 48 mm  Weight  222 g  Environmental conditions  Operating temperature  0 °C to 60 °C		8	
Insulation tested with         DC 500 V           Datasizes         Input bytes         2           Output bytes         2           Parameter bytes         0           Diagnostic bytes         0           Housing         PPE / PA 6.6           Mounting         Profile rail 35 mm           Mechanical data         Dimensions (WxHxD)         101.6 mm x 76 mm x 48 mm           Weight         222 g           Environmental conditions         O °C to 60 °C			
Datasizes           Input bytes         2           Output bytes         2           Parameter bytes         0           Diagnostic bytes         0           Housing         PPE / PA 6.6           Mounting         Profile rail 35 mm           Mechanical data         Dimensions (WxHxD)         101.6 mm x 76 mm x 48 mm           Weight         222 g           Environmental conditions         Operating temperature         0 °C to 60 °C	· · · · · · · · · · · · · · · · · · ·	•	
Input bytes 2  Output bytes 2  Parameter bytes 0  Diagnostic bytes 0  Housing  Material PPE / PA 6.6  Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Detection		
Output bytes         2           Parameter bytes         0           Diagnostic bytes         0           Housing         PPE / PA 6.6           Mounting         Profile rail 35 mm           Mechanical data         Dimensions (WxHxD)         101.6 mm x 76 mm x 48 mm           Weight         222 g           Environmental conditions         Operating temperature         0 °C to 60 °C		2	
Parameter bytes  Diagnostic bytes  O  Housing  Material  PPE / PA 6.6  Mounting  Profile rail 35 mm  Mechanical data  Dimensions (WxHxD)  101.6 mm x 76 mm x 48 mm  Weight  222 g  Environmental conditions  Operating temperature  O °C to 60 °C			
Diagnostic bytes  Housing  Material  PPE / PA 6.6  Mounting  Profile rail 35 mm  Mechanical data  Dimensions (WxHxD)  101.6 mm x 76 mm x 48 mm  Weight  222 g  Environmental conditions  Operating temperature  0 °C to 60 °C			
Housing  Material PPE / PA 6.6  Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	· · · · · · · · · · · · · · · · · · ·		
Material PPE / PA 6.6  Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Diagnostic bytes	0	
Mounting Profile rail 35 mm  Mechanical data  Dimensions (WxHxD) 101.6 mm x 76 mm x 48 mm  Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Housing		
Mechanical data  Dimensions (WxHxD)	Material	PPE / PA 6.6	
Dimensions (WxHxD)  101.6 mm x 76 mm x 48 mm  Weight  222 g  Environmental conditions  Operating temperature  0 °C to 60 °C	Mounting	Profile rail 35 mm	
Weight 222 g  Environmental conditions  Operating temperature 0 °C to 60 °C	Mechanical data		
Environmental conditions  Operating temperature 0 °C to 60 °C	Dimensions (WxHxD)	101.6 mm x 76 mm x 48 mm	
Operating temperature 0 °C to 60 °C	Weight	222 g	
	Environmental conditions		
Storage temperature -25 °C to 70 °C	Operating temperature	0 °C to 60 °C	
	Storage temperature	-25 °C to 70 °C	



## Certifications

UL certification	yes
KC certification	-