

Data sheet SM 022 - Digital output (022-1BD70)

**Technical data** 

Order no.	022-1BD70
Туре	SM 022 - Digital output
Module ID	0F43 57E2
General information	
Note	
Features	4x DO DC 24 V 0.5 A ETS function - μs precise control via time stamp
Current consumption/power loss	
Current consumption from backplane bus	105 mA
Power loss	0.95 W
Technical data digital outputs	
Number of outputs	4
Cable length, shielded	1000 m
Cable length, unshielded	600 m
Rated load voltage	DC 20.428.8 V
Current consumption from load voltage L+ (without load)	25 mA
Total current per group, horizontal configuration, 40°C	2 A
Total current per group, horizontal configuration, 60°C	2 A
Total current per group, vertical configuration	2 A
Output current at signal "1", rated value	0.5 A
Signal logic output	Sourcing output
Output delay of "0" to "1"	max. 500 ns
Output delay of "1" to "0"	max. 500 ns
Minimum load current	-
Lamp load	10 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	yes
Switching frequency with resistive load	max. 40 kHz
Switching frequency with inductive load	max. 40 kHz
Switching frequency on lamp load	max. 40 kHz
Internal limitation of inductive shut-off voltage	L+ (-45 V)
Short-circuit protection of output	yes, electronic, and only highside
Trigger level	1 A
Number of operating cycle of relay outputs	
Switching capacity of contacts	-
Output data size	60 Byte
Status information, alarms, diagnostics	
Status display	green LED per channel
Interrupts	no
Process alarm	no
Diagnostic interrupt	no

## YASKAWA

Diagnostics information read-outpossibleSupply voltage displaygreen LEDGroup error displayred LEDChannel error displaynoneIsolationBetween channels-Between channels of groups to-Between channels and backplane busyesInsulation tested withDC 500 VPWM data-PWM data-PWM dianels-PWM dianels-PWM dianels-PWM dianels-PWM dianels-PWM dianels-Period length-Innimum pulse width-Type of output-Datasizes-Input bytes4Output bytes20 /60Parameter bytes6Diagnostic bytes20HousingPDE CPTOMortingPDE CPTOMeterialPE/ PPE GPTOMountig12.9 mm x 109 mm x 76.5 mmNet weight61 gGross weight61 gGross weight61 gCortification-Uc certification0.°C to 80 °CStorage temperature0.°C to 80 °CCortificationyesKC certificationyesKC certification-ChinaRoHS certification-ChinaRoHS certification-ChinaRoHS certification-ChinaRoHS certification-ChinaRoHS certification-ChinaRoHS certification- </th <th>Diagnostic functions</th> <th>no</th>	Diagnostic functions	no
Group error display red LED   Channel error display none   Isolation -   Between channels -   Between channels of groups to -   Between channels and backplane bus yes   Insulation tested with DC 500 V   PWM data -   PWM channels -   PWM data -   Public basis -   Period length -   Minimum pulse width -   Type of output -   Datasizos -   Input bytes 4   Output bytes 20   Parameter bytes 6   Diagnostic bytes 20   Housing Profile rail 35 mm   Meterial PPE / PPE GF10   Mounting Profile rail 35 mm   Meterial 19   Weight including accessories 61 g   Gross weight 61 g   Gross weight 76 g   Environmental conditions -   Weight including accessories 61 g	Diagnostics information read-out	possible
Channel error display none   Isolation -   Between channels -   Between channels of groups to -   Between channels and backplane bus yes   Insulation tested with DC 500 V   PWM data -   Pum data -   PWM data -   Pum data -   PWM data -   Pum data -   Prof olength -   Innium pulse width -   Type of output -   Datasizes -   Input bytes 20 / 60   Parameter bytes 6   Diagnostic bytes 20 -   Housing ProFIPE GF10   Mounting ProFIPE GF10   Mounting 12.9 mm x 109 mm x 76.5 mm   Net weight 61 g   Gross weight 61 g   Gross we	Supply voltage display	green LED
Isolation   Between channels -   Between channels of groups to -   Between channels and backplane bus yes   Insulation tested with C500 V   PWM data -   PWM data -   PWM data -   PWM time basis -   Period length -   Minimum pulse width -   Type of output -   Datasizes -   Input bytes 20 / 60   Parameter bytes 6   Diagnostic bytes 20 / 60   Parameter bytes 6   Diagnostic bytes 20 / 60   Parameter bytes 6   Diagnostic bytes 20 / 60   Diagnostic bytes 6   Diagnostic bytes 6   Diagnostic bytes 6   Diagnostic bytes 6   Diagnostic bytes 12.9 mm x 109 mm x 76.5 mm   Mechanical data 19   Weight including accessories 61 g   Weight including accessories 61 g   Gross weight 7	Group error display	red LED
Between channels     -       Between channels of groups to     -       Between channels and backplane bus     yes       Insulation tested with     DC 500 V       PWM dta     -       PWM channels     -       PWM thime basis     -       Period length     -       Minimum pulse width     -       Type of output     -       Datasizes     -       Input bytes     4       Output bytes     20 / 60       Parameter bytes     6       Diagnostic bytes     20       Mounting     PPE / PPE GF10       Mounting     PCFile rail 35 mm       Mechanical data     21.9 mm x 109 mm x 76.5 mm       Metyph     61 g       Weight including accessories     61 g       Gross weight     76 g       Environmentations(Wathzo)     12.9 mm x 109 mm x 76.5 mm       Net weight     61 g       Uc periating temperature     -26 °C to 70 °C       Environmentations(Wathzo)     92 °C to 80 °C       Storage temperature     -25 °C to 70 °C	Channel error display	none
Between channels of groups to     -       Between channels and backplane bus     yes       Insulation tested with     DC 500 V       PWM data     -       PWM drannels     -       Pwind length     -       Minimum pulse width     -       Type of output     -       Datasizes     -       Datasizes     20/60       Parameter bytes     6       Diagnostic bytes     20       Housing     PPE / PPE GF10       Mounting     Profile rail 35 mm       Methanisons (WxHxD)     12.9 mm x 109 mm x 76.5 mm       Net weight     61 g       Gross weight     76 g       Environmental conditions     -       Cortifications     -25 °C to 70 °C </td <td>Isolation</td> <td></td>	Isolation	
Between channels and backplane bus yes   Insulation tested with DC 500 V   PWM data -   PWM channels -   PWM time basis -   Periad length -   Minimum pulse width -   Type of output -   Datasizes -   Input bytes 4   Output bytes 20 / 60   Parameter bytes 6   Diagnostic bytes 20   Housing Profile rail 35 mm   Mechanical data -   Dimensions (WAHXD) 12.9 mm x 109 mm x 76.5 mm   Net weight 61 g   Gross weight 76 g   Environmental conditions 0 °C to 60 °C   Storage temperature 0 °C to 60 °C   Storage temperature 0 °C to 60 °C   Storage temperature 9 °C to 70 °C   Certification yes   VLCA certification -	Between channels	-
Insulation tested with     DC 500 V       PWM data     .       PWM channels     -       PWM time basis     -       Period length     -       Minimum pulse width     -       Type of output     -       Datasizes     -       Input bytes     4       Output bytes     20 / 60       Parameter bytes     6       Diagnostic bytes     20       Housing     -       Material     PPE / PPE GF10       Mounting     Portile rail 35 mm       Mechanical data     -       Dimensions (WxHxD)     12.9 mm x 109 mm x 76.5 mm       Net weight     61 g       Gross weight     76 g       Environmental conditions     -       Operating temperature     0 °C to 60 °C       Storage temperature     0 °C to 60 °C       Storage temperature     9 es       UL certification     yes       WCA certification     yes	Between channels of groups to	-
PWM dataPWM dataPWM time basis-Period length-Minimum pulse width-Type of output-Datasizes-Input bytes4Output bytes20 / 60Parameter bytes6Diagnostic bytes20MaterialPPE / PPE GF10MountingProfile rail 35 mmMechanical data-Dimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gWeight including accessories61 gGross weight76 gEnvironmental conditions-UL certificationyesKCC certificationyesKCC certificationyesKCC certification-VKCA certification-VKCA certification-	Between channels and backplane bus	yes
PWM channels-PWM time basis-Period length-Minimum pulse width-Type of output-Datasizes-Input bytes4Output bytes20 / 60Parameter bytes6Diagnostic bytes20HousingPPE / PPE GF10MaterialPPE / PPE GF10MountingProfile rail 35 mmMechanical data-Dimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gGross weight76 gEnvironmental conditions-25 °C to 70 °CCertificationyesUL certificationyesKCA certificationyesKCA certification-UKCA certification-	Insulation tested with	DC 500 V
PWM time basis-Period length-Minimum pulse width-Type of output-Datasizes-Input bytes4Output bytes20 / 60Parameter bytes6Diagnostic bytes20MaterialPPE / PPE GF10MountingProfile rail 35 mmMechanical data-Dimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gGross weight76 gEnvironmental conditions-Operating temperature0 °C to 60 °CStorage temperature25 °C to 70 °CCertificationyesUL certificationyesKCA certificationyesUKCA certification-UKCA certification-UKCA certification-	PWM data	
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Output bytes20 / 60Parameter bytes6Diagnostic bytes20Housing20MaterialPPE / PPE GF10MountingProfile rail 35 mmMechanical data20Dimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gWeight including accessories61 gGross weight76 gEnvironmental conditionsOperating temperature0 °C to 60 °CStorage temperature92 °C to 70 °CCertificationyesUL certificationyesUC certification-UKCA certification-	Datasizes	
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HousingMaterialPPE / PPE GF10MountingProfile rail 35 mmMechanical dataDimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gWeight including accessories61 gGross weight76 gEnvironmental conditions0 °C to 60 °CStorage temperature0 °C to 60 °CStorage temperature25 °C to 70 °CCertificationyesUL certificationyesUKC certification-	Parameter bytes	6
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Mechanical dataDimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gWeight including accessories61 gGross weight76 gEnvironmental conditionsOperating temperature0 °C to 60 °CStorage temperature-25 °C to 70 °CCertificationsUL certificationyesKC certificationyesKC certification-	Material	PPE / PPE GF10
Dimensions (WxHxD)12.9 mm x 109 mm x 76.5 mmNet weight61 gWeight including accessories61 gGross weight76 gEnvironmental conditionsOperating temperature0 °C to 60 °CStorage temperature-25 °C to 70 °CCertificationsUL certificationyesKC certificationyesUKCA certification-	Mounting	Profile rail 35 mm
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Weight including accessories61 gGross weight76 gEnvironmental conditions0 °C to 60 °COperating temperature0 °C to 60 °CStorage temperature-25 °C to 70 °CCertificationsyesUL certificationyesKC certificationyesUKCA certification-	Dimensions (WxHxD)	12.9 mm x 109 mm x 76.5 mm
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Operating temperature0 °C to 60 °CStorage temperature-25 °C to 70 °CCertificationsyesUL certificationyesKC certificationyesUKCA certification-	Gross weight	76 g
Storage temperature -25 °C to 70 °C   Certifications UL certification   VL certification yes   KC certification yes   UKCA certification -	Environmental conditions	
Certifications   yes     UL certification   yes     KC certification   yes     UKCA certification   -	Operating temperature	0 °C to 60 °C
UL certificationyesKC certificationyesUKCA certification-	Storage temperature	-25 °C to 70 °C
KC certification yes   UKCA certification -	Certifications	
UKCA certification -	UL certification	yes
	KC certification	yes
ChinaRoHS certification -	UKCA certification	-
	ChinaRoHS certification	-