

Data sheet

SM 153, CANopen slave (153-4CF00)

Technical data

Type SM 153, CANopen slave General information Note - CAN slave a channels as inputs or outputs 2x11 clamps Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse polarity protection Current consumption (no-load operation) - Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs 0 (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) - Rated load voltage in puts and load voltage Current consumption from load voltage DC 24 V Input voltage for signal "1" DC 05 V Input voltage for signal "1" DC 1528.8 V Input voltage for signal "1" DC 1528.8 V Input resistance - Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 1.5 mA Input delay of "1" to "0" 3 ms	Order no.	153-4CF00
Features CAN slave 8 channels as inputs or outputs 2x1 clamps	Туре	SM 153, CANopen slave
Features CAN slave 8 channels as inputs or outputs 2x1 clamps	General information	
Features CAN slave 8 channels as inputs or outputs 2x11 clamps Technical data power supply Power supply (rated value) DC 24 V Power supply (permitted range) DC 20.428.8 V Reverse potanty protection Current consumption (no-load operation) Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs O (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) - 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 Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs vertical configuration Number of outputs		_
Power supply (rated value) Power supply (permitted range) DC 20.428.8 V Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs 0 (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) - Rated value 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 certsidance - Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs vertical configuration Number of simultaneously utilizable inputs vertical configuration Number of outputs		8 channels as inputs or outputs
Power supply (permitted range) Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs 0 (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 bC 24 V Reverse polarity protection of rated load voltage - Current consumption from load voltage bC 24 V Input voltage for signal "0" DC 0.5 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 Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs vertical configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve Input charact	Technical data power supply	
Reverse polarity protection Current consumption (no-load operation) Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs 0 (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) Rated value DC 24 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 cresistance Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 vertical configuration Number of simultaneously utilizable inputs vertical configuration Number of outputs 8 (0	Power supply (rated value)	DC 24 V
Current consumption (no-load operation) Current consumption (rated value) 55 mA Technical data digital inputs Number of inputs 0 (8 Cable length, shielded 1000 m Cable length, unshielded 600 m Rated load voltage DC 24 V Reverse polarity protection of rated load voltage	Power supply (permitted range)	DC 20.428.8 V
Technical data digital inputs Number of inputs O (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) - 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 8 (0	Reverse polarity protection	✓
Number of inputs O (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) - 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Number of simultaneously utilizable inputs horizontal configuration 8 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 8 (0	Current consumption (no-load operation)	-
Number of inputs 0 (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) - 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 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 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 8 (0	Current consumption (rated value)	55 mA
Number of inputs 0 (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) - 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 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 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 8 (0	Technical data digital inputs	
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) - 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "0" 3 ms 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 (0		0 (8
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) - 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 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 Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 6(0	· · · · · · · · · · · · · · · · · · ·	<u> </u>
Rated load voltage DC 24 V Reverse polarity protection of 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 Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" to "0" 3 ms 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 1 Byte Technical data digital outputs Number of outputs 8 6 (0		
Reverse polarity protection of 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 current for signal "1" 7 mA Connection of Two-Wire-BEROs possible Max. permissible BERO quiescent current Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms 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 1 Byte Technical data digital outputs Number of outputs 8 (0		
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 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Rated value Input voltage for signal "0" 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 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Input voltage for signal "0" 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 Max. permissible BERO quiescent current 1.5 mA Input delay of "0" to "1" 3 ms Input delay of "0" to "1" 3 ms 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 1 Byte Technical data digital outputs Number of outputs 8 (0		DC 24 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 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Input voltage hysteresis Frequency range Input resistance Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Frequency range Input resistance Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 Number of simultaneously utilizable inputs vertical configuration Recent Service Service IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8		-
Input current for signal "1" 7 mA Connection of Two-Wire-BEROs possible 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 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 (0		-
Connection of Two-Wire-BEROs possible 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 Number of simultaneously utilizable inputs vertical configuration Rumber of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0	·	7 mA
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 Technical data digital outputs Number of outputs 8 (0		J.
Input delay of "0" to "1" 3 ms Input delay of "1" to "0" 3 ms 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 1 Byte Technical data digital outputs Number of outputs 8 (0	Max, parmissible REBO quiascent current	237
Input delay of "1" to "0" Number of simultaneously utilizable inputs horizontal configuration Number of simultaneously utilizable inputs vertical configuration Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (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 1 Byte Technical data digital outputs Number of outputs 8 (0		
Number of simultaneously utilizable inputs vertical configuration Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0	Number of simultaneously utilizable inputs horizontal	
Input characteristic curve IEC 61131-2, type 1 Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		8
Initial data size 1 Byte Technical data digital outputs Number of outputs 8 (0		
Technical data digital outputs Number of outputs 8 (0	·	
Number of outputs 8 (0	Initial data size	1 Byte
	Technical data digital outputs	
	Number of outputs	8 (0
Cable length, shielded 1000 m	Cable length, shielded	1000 m
Cable length, unshielded 600 m	Cable length, unshielded	600 m



Rated load voltage	DC 24 V	A YASKAWA COMPANY
Reverse polarity protection of rated load voltage	-	
Current consumption from load voltage L+ (without load)	50 mA	
Total current per group, horizontal configuration, 40°C	4 A	
Total current per group, horizontal configuration, 60°C	2 A	
Total current per group, vertical configuration	2 A	
Output voltage signal "1" at min. current	L+ (-0.8 V)	
Output voltage signal "1" at max. current	L+ (-1.5 V)	
Output current at signal "1", rated value	1 A	
Output delay of "0" to "1"	150 <i>μ</i> s	
Output delay of "1" to "0"	100 μs	
Minimum load current	-	
Lamp load	5 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. 1000 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	L+ (-52 V)	
Short-circuit protection of output	yes, electronic	
Trigger level	1.5 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	
Process alarm	no	
Diagnostic interrupt	no	
Diagnostic functions	no	
Diagnostics information read-out	possible	
Supply voltage display	yes	
Group error display	red SF 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	-	
Max. potential difference between inputs (Ucm)	-	
Max. potential difference between Mana and Mintern (Uiso)	-	
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	



Hardware configuration	A YASKAWA COMPANY
Racks, max.	-
Modules per rack, max.	
Number of digital modules, max.	
Number of analog modules, max.	
Communication	
Fieldbus	CANopen
Type of interface	CAN
Connector	Sub-D, 9-pin, male
Topology	Linear bus with bus termination at both ends
Electrically isolated	✓
Number of participants, max.	126
Node addresses	1 - 99
Transmission speed, min.	10 kbit/s
Transmission speed, max.	1 Mbit/s
Address range inputs, max.	1 Byte
Address range outputs, max.	1 Byte
Number of TxPDOs, max.	1
Number of RxPDOs, max.	1
Datasizes	
Input bytes	1
Output bytes	1
Parameter bytes	-
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	219 g
Environmental conditions	
Operating temperature	0 °C to 60 °C
Storage temperature	-25 °C to 70 °C
Certifications	
UL508 certification	yes