

## Data sheet

SM 151 (151-6PL00)

## Technical data

Order no.	151-6PL00
Туре	SM 151
General information	
Note	
Features	PROFIBUS-DP slave
reatures	32 inputs
Technical data power supply	
Power supply (rated value)	DC 24 V
Power supply (permitted range)	DC 20.428.8 V
Reverse polarity protection	yes
Current consumption (no-load operation)	
Current consumption (rated value)	55 mA
Inrush current	40 A
l²t	0.15 A²s
Technical data digital inputs	
Number of inputs	32
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	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	32
Number of simultaneously utilizable inputs vertical configuration	32
Input characteristic curve	IEC 61131-2, type 1
Initial data size	4 Byte
Status information, alarms, diagnostics	
Status display	green LED per channel
Interrupts	no
<u> </u>	



Diagnostic interrupt         no           Diagnostic information read-out         possible           Supply voltage display         yes           Group arror display         rod SF LED           Channel error display         none           Isolation           Between channels         -           Between channels of groups to         -           Between channels and backplaine bus         -           Between channels and power supply         -           Max. potential difference between difference between figure supply         -           Max. potential difference between figure supply         -           Max. potential difference between figure supply in the supply i	Process alarm	no A YASKAWA COMPANY
Diagnostics information read-out         possible           Supply voltage display         yes           Group error display         red SF LED           Channel error display         none           Isolation	Diagnostic interrupt	no
Supply voltage display         yes           Group error display         red SF LED           Channel error display         none           Solation         -           Between channels         -           Between channels of groups to         -           Between channels and backplane bus         -           Between channels and power supply         -           Max. potential difference between drouts         -           Max. potential difference between finputs (Um)         -           Max. potential difference between finputs and Mintern (Uso)         -           Max. potential difference between inputs and Mintern (Uso)         -           Max. potential difference between Mintern and outputs         -           Max. potential difference between Mintern and outputs         -           Insulation tested with         DC 500 V           Hardware configuration         -           Racks, nax.         -           Number of digital modules, max.         -           Number of analog modules, max.         -           Number of analog modules, max.         -           Pipe of interface         R2485           Communication         R2486           Fieldbus         PROFIBUS-DP to EN 50170           Type of i	Diagnostic functions	no
Group error display red SF LED Channel error display none  Between channels  Between channels of groups to  Between channels and backplane bus  Between channels and power supply	Diagnostics information read-out	possible
Solation	Supply voltage display	yes
Between channels   Setween channels   Setween channels of groups to   Setween channels and backplane bus   Setween channels and power supply   Setween channels difference between inputs (Urm)   Setween supplies (Urm)   Setween supplies and Mintern (Uso)   Setween supplies and Setween supplies and Mintern (Uso)   Setween supplies and Setween supplie	Group error display	red SF LED
Between channels of groups to	Channel error display	none
Between channels of groups to	Isolation	
Between channels of groups to		-
Between channels and backplane bus Between channels and power supply Amx. potential difference between inputs (Um) Amx. potential difference between inputs (Um) Amx. potential difference between inputs and Mintern (Uiso) Amx. potential difference between Mintern and outputs Insulation tested with  DC 500 V  Hardware configuration  Racks, max.  Amwher of analog modules, max.  Number of digital modules, max.  Number of analog modules, max.  PROFIBUS-DP to EN 50170  Filedbus PROFIBUS-DP to EN 50170  Type of interface Connector  Sub-D, 9-pin, female Linear bus with bus termination at both ends Electrically isolated yes Connector  Topology Linear bus with bus termination at both ends Electrically isolated yes Transmission speed, min.  12 Mbit/s  Transmission speed, max.  12 Mbit/s  Transmission speed, max.  Address range inputs, max.  0 Byte  Datasizes Input bytes 0 0  Parameter bytes 0 0  Parameter bytes 0 0  Parameter bytes 0 0  Housing		-
Between channels and power supply Max. potential difference between inputs (Ucm) Max. potential difference between inputs (Ucm) Max. potential difference between inputs (Ucm) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between inputs and Mintern (Uiso) Max. potential difference between Mintern and outputs Insulation tested with DC 500 V  Hardware configuration Racks, max. Potential digramment of digital modules, max. Potential m		-
Max. potential difference between circuits Max. potential difference between inputs (Ucm) Max. potential difference between Mana and Mintern (Uiso) Max. potential difference between Mana and Mintern (Uiso) Max. potential difference between inputs and Mana (Ucm) Max. potential difference between Mintern and outputs Max. potential difference between Mintern and outputs Insulation tested with DC 500 V  Hardware configuration Racks, max.		-
Max. potential difference between inputs (Ucm) Max. potential difference between Mana and Mintem (Uiso) Max. potential difference between inputs and Mana (Ucm) Max. potential difference between inputs and Mintem (Uiso) Max. potential difference between inputs and Mintem (Uiso) Max. potential difference between Mintern and outputs Insulation tested with  DC 500 V  Hardware configuration  Racks, max.  - Number of digital modules, max.  Number of analog modules, max.  - Number of analog modules, max.  PROFIBUS-DP to EN 50170  Type of interface  Connector  Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated  yes  Number of participants, max.  1.25  Node addresses 1.99  Transmission speed, min.  Transmission speed, min.  Transmission speed, max.  Address range inputs, max.  Number of TXPDOs, max.  Datasizes  Input bytes 0 Parameter bytes 0 Parameter bytes 0 Parameter bytes 0 Insulation		-
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 inputs and Mintern (Uiso) - Insulation tested with DC 500 V  Hardware configuration  Racks, max Modules per rack, max Number of digital modules, max Number of analog modules, max Number of analog modules, max Teledbus PROFIBUS-DP to EN 50170 Type of interface RS485 Connector Sub-D, 9-pin, female Topology Linear bus with bus termination at both ends Electrically isolated yes Number of participants, max. 125 Node addresses 1-99 Node addresses 1-99 Node addresses 1-99 Address range outputs, max. 4 Byte Address range outputs, max. 0 Byte Number of TxPDOs, max Number of TxPDOs, max Number of RxPDOs, max Datasizes  Input bytes 0 Quput bytes 0 Quarameter bytes 7+5 Diagnostic bytes 0 Quincipants byte outputs and mana and Mintern (Uiso) - DC 500 V		-
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 Racks, max Racks, max Modules per rack, max Number of digital modules, max Communication Fieldbus Fieldbus Fieldbus For per of interface Connector Sub-D, 9-pin, female Linear bus with bus termination at both ends Electrically isolated yes Number of participants, max. 125 Node addresses 1 - 99 Transmission speed, max. Address range inputs, max. Address range outputs, max.  Address range outputs, max.  Number of TxPDOs, max.  Number of RxPDOs, max.  Datasizes Input bytes Qupt bytes Quipt bytes Qui		-
Max. potential difference between Mintern (Uiso)  Max. potential difference between Mintern and outputs  Insulation tested with  Co 500 V  Hardware configuration  Racks, max.  - Modules per rack, max Number of digital modules, max Number of analog modules, max.  - Communication  Fieldbus  PROFIBUS-DP to EN 50170  Type of interface  Connector  Sub-D, 9-pin, female  Linear bus with bus termination at both ends  Electrically isolated  yes  Number of participants, max.  125  Node addresses 1 - 99  Transmission speed, min.  Transmission speed, min.  Transmission speed, max.  Address range inputs, max.  Address range outputs, max.  Number of TxPDOs, max.  Number of TxPDOs, max.  Datasizes  Input bytes 0 Parameter bytes 0 Parameter bytes 0 Consider and with Mintern (Uiso)  - Control of Sub-D (Sub-D)  - C		-
Max. potential difference between Mintern and outputs Insulation tested with DC 500 V  Hardware configuration  Racks, max		-
Insulation tested with DC 500 V  Hardware configuration  Racks, max Number of digital modules, max Number of analog modules, max Communication  Fieldbus PROFIBUS-DP to EN 50170 Type of interface RS485 Connector Sub-D, 9-pin, female Topology Linear bus with bus termination at both ends Electrically isolated yes Number of participants, max. 125 Node addresses 1-99 Transmission speed, min. 9.6 kbit/s Transmission speed, max. 4 Byte Address range inputs, max. 0 Byte Number of TxPDOs, max Number of TxPDOs, max Number of RxPDOs, max Number of RxPDOs, max Number of RxPDOs, max Datasizes  Input bytes 4 Output bytes 0 Parameter bytes 0 Diagnostic bytes  O Housing		
Hardware configuration  Racks, max  Modules per rack, max  Number of digital modules, max  Number of analog modules, max  Communication  Fieldbus PROFIBUS-DP to EN 50170  Type of interface RS485  Connector Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated yes  Number of participants, max. 125  Node addresses 1 - 99  Transmission speed, min. 9.6 kbit/s  Transmission speed, mix. 12 Mbit/s  Address range inputs, max. 4 Byte  Address range outputs, max. 0 Byte  Number of TxPDOs, max  Number of TxPDOs, max  Datasizes  Input bytes 4  Output bytes 0  PROFIBUS-DP to EN 50170  PROFIBUS-DP to EN 50170  PROFIBUS-DP to EN 50170  Sub-D, 9-pin, female  1		
Racks, max  Modules per rack, max  Number of digital modules, max  Number of analog modules, max  Communication  Fieldbus PROFIBUS-DP to EN 50170  Type of interface RS485  Connector Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated yes  Number of participants, max. 125  Node addresses 1-99  Transmission speed, min. 9.6 kbit/s  Transmission speed, max. 12 Mbit/s  Address range inputs, max. 0 Byte  Number of TxPDOs, max  Number of TxPDOs, max  Datasizes  Input bytes 4  Output bytes 0  Parameter bytes 7+5  Diagnostic bytes 0		
Modules per rack, max.  Number of digital modules, max.  Number of analog modules, max.  Communication  Fieldbus  PROFIBUS-DP to EN 50170  Type of interface  RS485  Connector  Sub-D, 9-pin, female  Topology  Linear bus with bus termination at both ends  Electrically isolated  yes  Number of participants, max.  125  Node addresses  1 - 99  Transmission speed, min.  12 Mbit/s  Address range inputs, max.  4 Byte  Address range outputs, max.  Number of TxPDOs, max.  Number of RxPDOs, max.  Datasizes  Input bytes  0  Parameter bytes  7 + 5  Diagnostic bytes  Output bytes  0  Housing	Hardware configuration	
Number of digital modules, max.  Number of analog modules, max.  Communication  Fieldbus PROFIBUS-DP to EN 50170  Type of interface RS485  Connector Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated yes  Number of participants, max.  125  Node addresses 1 - 99  Transmission speed, min.  Transmission speed, max.  Address range inputs, max.  Address range inputs, max.  Address range outputs, max.  Number of TxPDOs, max.  Datasizes  Input bytes  0  Parameter bytes  7 + 5  Diagnostic bytes  Output bytes  0  Housing	Racks, max.	-
Number of analog modules, max.  Communication  Fieldbus PROFIBUS-DP to EN 50170  Type of interface RS485  Connector Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated yes  Number of participants, max. 125  Node addresses 1 - 99  Transmission speed, min. 9.6 kbit/s  Transmission speed, max. 12 Mbit/s  Address range inputs, max. 4 Byte  Address range outputs, max. 0 Byte  Number of TxPDOs, max  Number of TxPDOs, max  Number of RxPDOs, max  Datasizes  Input bytes 4  Output bytes 0  Parameter bytes 7 + 5  Diagnostic bytes 0  Housing	Modules per rack, max.	-
Communication           Fieldbus         PROFIBUS-DP to EN 50170           Type of interface         RS485           Connector         Sub-D, 9-pin, female           Topology         Linear bus with bus termination at both ends           Electrically isolated         yes           Number of participants, max.         125           Node addresses         1 - 99           Transmission speed, min.         9.6 kbit/s           Transmission speed, max.         12 Mbit/s           Address range inputs, max.         4 Byte           Address range outputs, max.         0 Byte           Number of TxPDOs, max.         -           Number of RxPDOs, max.         -           Datasizes         4           Input bytes         4           Output bytes         0           Parameter bytes         7 + 5           Diagnostic bytes         0           Housing         4	Number of digital modules, max.	-
Fieldbus         PROFIBUS-DP to EN 50170           Type of interface         RS485           Connector         Sub-D, 9-pin, female           Topology         Linear bus with bus termination at both ends           Electrically isolated         yes           Number of participants, max.         125           Node addresses         1 - 99           Transmission speed, min.         9.6 kbit/s           Transmission speed, max.         4 Byte           Address range inputs, max.         0 Byte           Number of TxPDOs, max.         -           Number of RxPDOs, max.         -           Datasizes         4           Unput bytes         4           Output bytes         0           Parameter bytes         7 + 5           Diagnostic bytes         0           Housing         Housing	Number of analog modules, max.	-
Type of interface RS485 Connector Sub-D, 9-pin, female Topology Linear bus with bus termination at both ends Electrically isolated yes Number of participants, max. 125 Node addresses 1 - 99 Transmission speed, min. 9.6 kbit/s Transmission speed, max. 12 Mbit/s Address range inputs, max. 4 Byte Address range outputs, max. 0 Byte Number of TxPDOs, max Number of TxPDOs, max  Datasizes Input bytes 4 Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes  Housing	Communication	
Connector Sub-D, 9-pin, female  Topology Linear bus with bus termination at both ends  Electrically isolated yes  Number of participants, max. 125  Node addresses 1 - 99  Transmission speed, min. 9.6 kbit/s  Transmission speed, max. 12 Mbit/s  Address range inputs, max. 4 Byte  Address range outputs, max. 0 Byte  Number of TxPDOs, max  Number of TxPDOs, max  Datasizes  Input bytes 4  Output bytes 0  Parameter bytes 7 + 5  Diagnostic bytes 0  Housing	Fieldbus	PROFIBUS-DP to EN 50170
Electrically isolated yes  Number of participants, max. 125  Node addresses 1 - 99  Transmission speed, min. 9.6 kbit/s  Transmission speed, max. 12 Mbit/s  Address range inputs, max. 4 Byte  Address range outputs, max. 0 Byte  Number of TxPDOs, max  Number of RxPDOs, max  Datasizes  Input bytes 4  Output bytes 4  Output bytes 0  Parameter bytes 7 + 5  Diagnostic bytes 0  Housing	Type of interface	RS485
Electrically isolated yes Number of participants, max. 125 Node addresses 1-99 Transmission speed, min. 9.6 kbit/s Transmission speed, max. 12 Mbit/s Address range inputs, max. 4 Byte Address range outputs, max. 0 Byte Number of TxPDOs, max Number of RxPDOs, max  Datasizes Input bytes 4 Output bytes 4 Output bytes 0 Parameter bytes 7+5 Diagnostic bytes 0 Housing	Connector	Sub-D, 9-pin, female
Number of participants, max.  Node addresses  1 - 99  Transmission speed, min.  12 Mbit/s  Address range inputs, max.  Address range outputs, max.  Address range outputs, max.  Address range outputs, max.  O Byte  Number of TxPDOs, max.  -  Datasizes  Input bytes  4  Output bytes  0  Parameter bytes  7 + 5  Diagnostic bytes  Housing	Topology	Linear bus with bus termination at both ends
Node addresses 1 - 99 Transmission speed, min. 9.6 kbit/s Transmission speed, max. 12 Mbit/s Address range inputs, max. 4 Byte Address range outputs, max. 0 Byte Number of TxPDOs, max Number of RxPDOs, max  Patasizes Input bytes 4 Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes 0 Housing	Electrically isolated	yes
Transmission speed, min.  Transmission speed, max.  Address range inputs, max.  Address range outputs, max.  Address range outputs, max.  Address range outputs, max.  O Byte  Number of TxPDOs, max.  -  Number of RxPDOs, max.  -  Datasizes  Input bytes  O   Parameter bytes  Diagnostic bytes  O  Housing	Number of participants, max.	125
Transmission speed, max.  Address range inputs, max.  Address range outputs, max.  Address range outputs, max.  O Byte  Number of TxPDOs, max.  Number of RxPDOs, max.  -  Datasizes  Input bytes  4  Output bytes  Output bytes  7 + 5  Diagnostic bytes  Housing	Node addresses	1 - 99
Address range inputs, max.  Address range outputs, max.  O Byte  Number of TxPDOs, max.  -  Number of RxPDOs, max.  -  Datasizes  Input bytes  Output bytes  Output bytes  Oarameter bytes  Diagnostic bytes  Housing	Transmission speed, min.	9.6 kbit/s
Address range outputs, max.  Number of TxPDOs, max.  Number of RxPDOs, max.  -  Datasizes  Input bytes  4  Output bytes  0  Parameter bytes  Diagnostic bytes  O  Housing	Transmission speed, max.	12 Mbit/s
Number of TxPDOs, max.  Number of RxPDOs, max.  -  Datasizes  Input bytes  4  Output bytes  0  Parameter bytes  7 + 5  Diagnostic bytes  0  Housing	Address range inputs, max.	4 Byte
Datasizes         Input bytes       4         Output bytes       0         Parameter bytes       7 + 5         Diagnostic bytes       0         Housing	Address range outputs, max.	0 Byte
Input bytes 4 Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes 0  Housing	Number of TxPDOs, max.	
Input bytes 4 Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes 0 Housing	Number of RxPDOs, max.	-
Input bytes 4 Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes 0 Housing	Datasizes	
Output bytes 0 Parameter bytes 7 + 5 Diagnostic bytes 0  Housing		Δ
Parameter bytes 7 + 5 Diagnostic bytes 0  Housing		
Diagnostic bytes 0  Housing		
Housing		
	Diagnostic bytes	V
Material PPE / PA 6.6		
	Material	PPE / PA 6.6



Mounting	Profile rail 35 mm	A YASKAWA COMPANY	
Mechanical data			
Dimensions (WxHxD)	152.4 mm x 76 mm x 48 mm		
Weight	260 g		
Environmental conditions			
Operating temperature	0 °C to 60 °C		
Storage temperature	-25 °C to 70 °C		
Certifications			
UL certification	yes		
KC certification	-		