

MANUFACTURER DOCUMENT PACKAGE

Manufacturer's Manual

Reference package for installation, wiring and maintenance

SIEMENS SIMATIC

6ES7288-2DT32-0AA0

S7-200 SMART EM DT32 DIGITAL INPUT/OUTPUT MODULE

Selected official Siemens specification and wiring pages follow this Amikon cover with original pagination retained.

REFERENCE PACKAGE

SIMATIC S7-200 SMART System Manual V2.8, 08/2023

OFFICIAL DOCUMENT

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S7 S7-200 SMART

System Manual

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Table A-85 Connector pin locations for EM QT16 Digital 16 x Outputs Transition (6ES7288-2QT16-0AA0)

Pin	X10	X11	X12	X13
1	No connection	1L / 24 V DC	4L / 24 V DC	No connection
2	DQ a.0	1M / 24 V DC	4M / 24 V DC	DQ b.2
3	DQ a.1	Functional Earth	No connection	DQ b.3
4	DQ a.2	2L / 24 V DC	3L / 24 V DC	DQ b.4
5	DQ a.3	2M / 24 V DC	3M / 24 V DC	DQ b.5
6	DQ a.4	DQ a.6	DQ b.0	DQ b.6
7	DQ a.5	DQ a.7	DQ b.1	DQ b.7

A.3.3 EM DT16, EM DR16, EM DT32, and EM DR32 digital input/output specifications

Table A-86 General specifications

Model	EM Digital 8 x Inputs/ Digital 8 x Outputs (EM DT16)	EM Digital 8 x Inputs/ 8 x Relay Outputs (EM DR16)	EM Digital 16 x Inputs/ Digital 16 x Out- puts (EM DT32)	EM Digital 16 x Inputs / 16 x Relay Outputs (EM DR32)
Article number	6ES7288-2DT16-0A A0	6ES7288-2DR16-0A A0	6ES7288-2DT32-0A A0	6ES7288-2DR32-0AA 0
Dimensions W x H x D (mm)	45 x 100 x 81	45 x 100 x 81	70 x 100 x 81	70 x 100 x 81
Weight	179.7g grams	201.9 grams	257.3 grams	295.4 grams
Power dissipation	2.5 W	5.5 W	4.5 W	10 W
Current consumption (SM Bus)	145 mA	145 mA	185 mA	180 mA
Current consumption (24 V DC)	4 mA / Input used 11 mA / Relay coil used	4 mA / Input used 11 mA / Relay coil used	4 mA / Input used	4 mA / Input used

Table A-87 Digital inputs

Model	EM Digital 8 x Inputs/ Digital 8 x Outputs (EM DT16)	EM Digital 8 x Inputs/ 8 x Relay Outputs (EM DR16)	EM Digital 16 x Inputs/ Digital 16 x Outputs (EM DT32)	EM Digital 16 x Inputs / 16 x Relay Outputs (EM DR32)
Number of inputs	8	8	16	16
Type	Sink/Source (IEC Type 1 sink)	Sink/Source (IEC Type 1 sink)	Sink/Source (IEC Type 1 sink)	Sink/Source (IEC Type 1 sink)
Rated voltage	24 V DC at 4 mA, nominal	24 V DC at 4 mA, nominal	24 V DC at 4 mA, nominal	24 V DC at 4 mA, nom- inal
Continuous permissible voltage	30 V DC max.	30 V DC max.	30 V DC max.	30 V DC max.
Surge voltage	35 V DC for 0.5 sec.	35 V DC for 0.5 sec.	35 V DC for 0.5 sec.	35 V DC for 0.5 sec.

A.3 Digital inputs and outputs expansion modules (EMs)

Model	EM Digital 8 x Inputs/ Digital 8 x Outputs (EM DT16)	EM Digital 8 x Inputs/ 8 x Relay Outputs (EM DR16)	EM Digital 16 x Inputs/ Digital 16 x Outputs (EM DT32)	EM Digital 16 x Inputs / 16 x Relay Outputs (EM DR32)
Logic 1 signal (min.)	15 V DC	15 V DC	15 V DC	15 V DC
Logic 0 signal (max.)	5 V DC	5 V DC	5 V DC	5 V DC
Isolation (field side to logic)	500 V AC for 1 minute	500 V AC for 1 minute	500 V AC for 1 minute	500 V AC for 1 minute
Isolation groups	2	2	2	2
Filter times	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of 4	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of 4	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of 4	0.2, 0.4, 0.8, 1.6, 3.2, 6.4, and 12.8 ms, selectable in groups of 4
Number of inputs on simultaneously	8	8	16	16
Cable length (max.), in meters	Shielded: 500 m normal inputs Unshielded: 300 m normal inputs	Shielded: 500 m normal inputs Unshielded: 300 m normal inputs	Shielded: 500 m normal inputs Unshielded: 300 m normal inputs	Shielded: 500 m normal inputs Unshielded: 300 m normal inputs

Table A-88 Digital outputs

Model	EM Digital 8 x Inputs/ Digital 8 x Outputs (EM DT16)	EM Digital 8 x Inputs/ 8 x Relay Outputs (EM DR16)	EM Digital 16 x Inputs/ Digital 16 x Outputs (EM DT32)	EM Digital 16 x Inputs/ 16 x Relay Outputs (EM DR32)
Number of outputs	8	8	16	16
Type	Solid state-MOSFET (sourcing)	Relay, dry contact	Solid state-MOSFET (sourcing)	Relay, dry contact
Voltage range	20.4 to 28.8 V DC	5 to 30 V DC or 5 to 250 V AC	20.4 to 28.8 V DC	5 to 30 V DC or 5 to 250 V AC
Logic 1 signal at max. current	20 V DC, min.	--	20 V DC, min.	--
Logic 0 signal with 10 K Ω load	0.1 V DC, max.	--	0.1 V DC, max.	--
Rated current per point (max.)	0.75 A	2 A	0.75 A	2 A
Rated current per common (max.)	3 A	8 A	6 A	8 A
Lamp load	5 W	30 W DC/200 W AC	5 W	30 W DC/200 W AC
ON state contact resistance	0.6 Ω max.	0.2 Ω max. when new	0.6 Ω max.	0.2 Ω max. when new
Leakage current per point	10 μ A max.	--	10 μ A max.	--
Surge current	8 A for 100 ms max.	7 A with contacts closed	8 A for 100 ms max.	7 A with contacts closed
Overload protection	No	No	No	No
Isolation (field side to logic)	500 V AC for 1 minute	1500 V AC for 1 minute (coil to contact) None (coil to logic)	500 V AC for 1 minute	1500 V AC for 1 minute (coil to contact) None (coil to logic)
Isolation resistance	--	100 M Ω min. when new	--	100 M Ω min. when new

A.3 Digital inputs and outputs expansion modules (EMs)

Table A-93 Connector pin locations for EM DT32 Digital 16 x Inputs / Digital 16 x Outputs (6ES7288-2DT32-0AA0)

Pin	X10	X11	X12	X13
1	4L+ / 24 V DC ¹	Functional Earth	3L+ / 24 V DC	DQ b.0 ¹
2	4M / 24 V DC ¹	No connection	3M / 24 V DC	DQ b.1 ¹
3	1M	2M	DQ a.0	DQ b.2 ¹
4	DI a.0	DI b.0	DQ a.1	DQ b.3 ¹
5	DI a.1	DI b.1	DQ a.2	No connection
6	DI a.2	DI b.2	DQ a.3	5L+ / 24 V DC
7	DI a.3	DI b.3	DQ a.4	5M / 24 V DC
8	DI a.4	DI b.4	DQ a.5	DQ b.4
9	DI a.5	DI b.5	DQ a.6	DQ b.5
10	DI a.6	DI b.6	DQ a.7	DQ b.6
11	DI a.7	DI b.7	No connection	DQ b.7

¹ In same isolation group.

Table A-94 Connector pin locations for EM DR32 Digital 16 x Inputs / 16 x Relay (6ES7288-2DR32-0AA0)

Pin	X10	X11	X12	X13
1	L+ / 24 V DC	Functional Earth	1L	3L
2	M / 24 V DC	No connection	DQ a.0	DQ b.0
3	1M	2M	DQ a.1	DQ b.1
4	DI a.0	DI b.0	DQ a.2	DQ b.2
5	DI a.1	DI b.1	DQ a.3	DQ b.3
6	DI a.2	DI b.2	No connection	No connection
7	DI a.3	DI b.3	2L	4L
8	DI a.4	DI b.4	DQ a.4	DQ b.4
8	DI a.5	DI b.5	DQ a.5	DQ b.5
10	DI a.6	DI b.6	DQ a.6	DQ b.6
11	DI a.7	DI b.7	DQ a.7	DQ b.7