Titan Products Technical Manual

Modbus Manual – 8-way Smart I/O Modules

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Issue Record

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On the Large Smart IO module the Modbus registers/coils availability depends on 2 parameters:

- The module variant (fixed)
- The input configuration (dynamic)

Variant	Model	
1. Relays.	IO-COM-8R	8 x Relay outputs labelled D01-D08.
2. Triacs.	IO-COM-8DO	8 x Triac outputs labelled D01-D08.
3. Analogue.	IO-COM-8AO	8 x Analogue outputs labelled A01-A08.
4. Mixed.	IO-COM-4AO4DO	4 x Analogue outputs labelled A01-A04 and 4 x Triac outputs labelled D01-D04.

Coils (Read/Write. Function Code: 0x01/0x05 Read/Write Single Coil:

Coil No.	Coil Type	Parameter	Action	Availability
1	R/W	Digital Output 1	Value applied on the digital output 1 state	Relay, Triac and Mixed hardware variants
2	R/W	Digital Output 2	Value applied on the digital output 2 state	Relay, Triac and Mixed hardware variants
3	R/W	Digital Output 3	Value applied on the digital output 3 state	Relay, Triac and Mixed hardware variants
4	R/W	Digital Output 4	Value applied on the digital output 4 state	Relay, Triac and Mixed hardware variants
5	R/W	Digital Output 5	Value applied on the digital output 5 state	Relay and Triac hardware variants only
6	R/W	Digital Output 6	Value applied on the digital output 6 state	Relay and Triac hardware variants only
7	R/W	Digital Output 7	Value applied on the digital output 7 state	Relay and Triac hardware variants only
8	R/W	Digital Output 8	Value applied on the digital output 8 state	Relay and Triac hardware variants only
9	R/W	Universal Input 1: Reset Counter	Set to 1 to reset Digital Input Counter 1 (holding register no. 9)	Universal Input 1 Configuration (holding register no. 1) is 2 (Digital Input) only
10	R/W	Universal Input 2: Reset Counter	Set to 1 to reset Digital Input Counter 2 (holding register no. 10)	Universal Input 2 Configuration (holding register no. 2) is 2 (Digital Input) only
11	R/W	Universal Input 3: Reset Counter	Set to 1 to reset Digital Input Counter 3 (holding register no. 11)	Universal Input 3 Configuration (holding register no. 3) is 2 (Digital Input) only

Coil No.	Coil Type	Parameter	Action	Availability
12	R/W	Universal Input 4: Reset Counter	Set to 1 to reset Digital Input Counter 4 (holding register no. 12)	Universal Input 4 Configuration (holding register no. 4) is 2 (Digital Input) only
13	R/W	Universal Input 5: Reset Counter	Set to 1 to reset Digital Input Counter 5 (holding register no. 13)	Universal Input 5 Configuration (holding register no. 5) is 2 (Digital Input) only
14	R/W	Universal Input 6: Reset Counter	Set to 1 to reset Digital Input Counter 6 (holding register no. 14)	Universal Input 6 Configuration (holding register no. 6) is 2 (Digital Input) only
15	R/W	Universal Input 7: Reset Counter	Set to 1 to reset Digital Input Counter 7 (holding register no. 15)	Universal Input 7 Configuration (holding register no. 7) is 2 (Digital Input) only
16	R/W	Universal Input 8: Reset Counter	Set to 1 to reset Digital Input Counter 8 (holding register no. 16)	Universal Input 8 Configuration (holding register no. 8) is 2 (Digital Input) only

Discrete Inputs (Readable. Function Code: 0x02 Read Discrete Input):

DI No.	DI Type	Parameter	Action	Availability
1	RO	Universal Input 1: Digital Input	Provides the digital value of the Input no. 1	Universal Input 1 Configuration (holding register no. 1) is 2 (Digital Input) only
2	RO	Universal Input 2: Digital Input	Provides the digital value of the Input no. 2	Universal Input 2 Configuration (holding register no. 2) is 2 (Digital Input) only
3	RO	Universal Input 3: Digital Input	Provides the digital value of the Input no. 3	Universal Input 3 Configuration (holding register no. 3) is 2 (Digital Input) only
4	RO	Universal Input 4: Digital Input	Provides the digital value of the Input no. 4	Universal Input 4 Configuration (holding register no. 4) is 2 (Digital Input) only
5	RO	Universal Input 5: Digital Input	Provides the digital value of the Input no. 5	Universal Input 4 Configuration (holding register no. 5) is 2 (Digital Input) only
6	RO	Universal Input 6: Digital Input	Provides the digital value of the Input no. 6	Universal Input 4 Configuration (holding register no. 6) is 2 (Digital Input) only
7	RO	Universal Input 7: Digital Input	Provides the digital value of the Input no. 7	Universal Input 4 Configuration (holding register no. 7) is 2 (Digital Input) only

DI No.	DI Type	Parameter	Action	Availability
8	RO	Universal Input 8: Digital Input	Provides the digital value of the Input no. 8	Universal Input 4 Configuration (holding register no. 8) is 2 (Digital Input) only

Registers (Read / Write. Function Code 0x03/0x06 Read/Write Single Register):

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
1	Holding Register	Unsigned 16bit	1 to 8	Universal Input 1 Configuration	1: Analog Input 0-10V 2: Digital Input 3: Thermistor 10k3A1 4: Thermistor 10k4A1 5: Thermistor 20k6A1 6: PT1000 7: Ni1000 8: None	Permanent
2	Holding Register	Unsigned 16bit	1 to 8	Universal Input 2 Configuration		Permanent
3	Holding Register	Unsigned 16bit	1 to 8	Universal Input 3 Configuration		Permanent
4	Holding Register	Unsigned 16bit	1 to 8	Universal Input 4 Configuration		Permanent
5	Holding Register	Unsigned 16bit	1 to 8	Universal Input 5 Configuration		Permanent
6	Holding Register	Unsigned 16bit	1 to 8	Universal Input 6 Configuration		Permanent
7	Holding Register	Unsigned 16bit	1 to 8	Universal Input 7 Configuration		Permanent
8	Holding Register	Unsigned 16bit	1 to 8	Universal Input 8 Configuration		Permanent
9	Holding Register	Unsigned 16bit	0 to +10	Analog Output 1	V (x100)	Analog and Mixed hardware variants
10	Holding Register	Unsigned 16bit	0 to +10	Analog Output 2	V (x100)	Analog and Mixed hardware variants
11	Holding Register	Unsigned 16bit	0 to +10	Analog Output 3	V (x100)	Analog and Mixed hardware variants
12	Holding Register	Unsigned 16bit	0 to +10	Analog Output 4	V (x100)	Analog and Mixed hardware variants

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
13	Holding Register	Unsigned 16bit	0 to +10	Analog Output 5	V (x100)	Analog Output hardware variant only
14	Holding Register	Unsigned 16bit	0 to +10	Analog Output 6	V (x100)	Analog Output hardware variant only
15	Holding Register	Unsigned 16bit	0 to +10	Analog Output 7	V (x100)	Analog Output hardware variant only
16	Holding Register	Unsigned 16bit	0 to +10	Analog Output 8	V (x100)	Analog Output hardware variant only
17	Holding Register	Signed 16bit	-10 to +10	Universal Input 1: Temperature offset	°C (x100)	Universal Input 1 Configuration (holding register no. 1) is between 3 and 7 (Temperature Input) only
18	Holding Register	Signed 16bit	-10 to +10	Universal Input 2: Temperature offset	°C (x100)	Universal Input 2 Configuration (holding register no. 2) is between 3 and 7 (Temperature Input) only
19	Holding Register	Signed 16bit	-10 to +10	Universal Input 3: Temperature offset	°C (x100)	Universal Input 3 Configuration (holding register no. 3) is between 3 and 7 (Temperature Input) only
20	Holding Register	Signed 16bit	-10 to +10	Universal Input 4: Temperature offset	°C (x100)	Universal Input 4 Configuration (holding register no. 4) is between 3 and 7 (Temperature Input) only

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
21	Holding Register	Signed 16bit	-10 to +10	Universal Input 5: Temperature offset	°C (x100)	Universal Input 5 Configuration (holding register no. 5) is between 3 and 7 (Temperature Input) only
22	Holding Register	Signed 16bit	-10 to +10	Universal Input 6: Temperature offset	°C (x100)	Universal Input 6 Configuration (holding register no. 6) is between 3 and 7 (Temperature Input) only
23	Holding Register	Signed 16bit	-10 to +10	Universal Input 7: Temperature offset	°C (x100)	Universal Input 7 Configuration (holding register no. 7) is between 3 and 7 (Temperature Input) only
24	Holding Register	Signed 16bit	-10 to +10	Universal Input 8: Temperature offset	°C (x100)	Universal Input 8 Configuration (holding register no. 8) is between 3 and 7 (Temperature Input) only
25	Holding Register	Unsigned 16bit	0 to 60	Universal Input 1: Low Pass Filter	seconds	Universal Input 1 Configuration (holding register no. 1) is NOT 2 nor 8 (Analog or Temperature Inputs only)
26	Holding Register	Unsigned 16bit	0 to 60	Universal Input 2: Low Pass Filter	seconds	Universal Input 2 Configuration (holding register no. 2) is NOT 2 nor 8 (Analog or Temperature Inputs only)

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
27	Holding Register	Unsigned 16bit	0 to 60	Universal Input 3: Low Pass Filter	seconds	Universal Input 3 Configuration (holding register no. 3) is NOT 2 nor 8 (Analog or Temperature Inputs only)
28	Holding Register	Unsigned 16bit	0 to 60	Universal Input 4: Low Pass Filter	seconds	Universal Input 4 Configuration (holding register no. 4) is NOT 2 nor 8 (Analog or Temperature Inputs only)
29	Holding Register	Unsigned 16bit	0 to 60	Universal Input 5: Low Pass Filter	seconds	Universal Input 5 Configuration (holding register no. 5) is NOT 2 nor 8 (Analog or Temperature Inputs only)
30	Holding Register	Unsigned 16bit	0 to 60	Universal Input 6: Low Pass Filter	seconds	Universal Input 6 Configuration (holding register no. 6) is NOT 2 nor 8 (Analog or Temperature Inputs only)
31	Holding Register	Unsigned 16bit	0 to 60	Universal Input 7: Low Pass Filter	seconds	Universal Input 7 Configuration (holding register no. 7) is NOT 2 nor 8 (Analog or Temperature Inputs only)
32	Holding Register	Unsigned 16bit	0 to 60	Universal Input 8: Low Pass Filter	seconds	Universal Input 8 Configuration (holding register no. 8) is NOT 2 nor 8 (Analog or Temperature Inputs only)
33	Holding Register	Unsigned 16bit	1 to 254	MAC Address	no unit	Permanent

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
34	Holding Register	Unsigned 16bit	1 to 5	Baudrate	1: 9600 2: 19200 3: 38400 4: 57600 5: 76800	Permanent
35	Holding Register	Unsigned 16bit	0 to 2	Modbus Communication settings	0: No parity, 2 stop bits 1: Even parity, 1 stop bit 2: Odd parity, 1 stop bit	Permanent

Registers (Read Only. Function Code 0x04 Read Input Register):

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
1	Input Register	Unsigned 16bit	0 to +10	Universal Input 1: Analog Input	V (x100)	Universal Input 1 Configuration (holding register no. 1) is 1 (Analog Input) only
2	Input Register	Unsigned 16bit	0 to +10	Universal Input 2: Analog Input	V (x100)	Universal Input 2 Configuration (holding register no. 2) is 1 (Analog Input) only
3	Input Register	Unsigned 16bit	0 to +10	Universal Input 3: Analog Input	V (x100)	Universal Input 3 Configuration (holding register no. 3) is 1 (Analog Input) only
4	Input Register	Unsigned 16bit	0 to +10	Universal Input 4: Analog Input	V (x100)	Universal Input 4 Configuration (holding register no. 4) is 1 (Analog Input) only
5	Input Register	Unsigned 16bit	0 to +10	Universal Input 5: Analog Input	V (x100)	Universal Input 5 Configuration (holding register no. 5) is 1 (Analog Input) only
6	Input Register	Unsigned 16bit	0 to +10	Universal Input 6: Analog Input	V (x100)	Universal Input 6 Configuration (holding register no. 6) is 1 (Analog Input) only
7	Input Register	Unsigned 16bit	0 to +10	Universal Input 7: Analog Input	V (x100)	Universal Input 7 Configuration (holding register no. 7) is 1 (Analog Input) only
8	Input Register	Unsigned 16bit	0 to +10	Universal Input 8: Analog Input	V (x100)	Universal Input 8 Configuration (holding register no. 8) is 1 (Analog Input) only
9	Input Register	Unsigned 16bit	0 to 65535	Universal Input 1: Digital Input counter	No unit	Universal Input 1 Configuration (holding register no. 1) is 2 (Digital Input) only
10	Input Register	Unsigned 16bit	0 to 65535	Universal Input 2: Digital Input counter	No unit	Universal Input 2 Configuration (holding register no. 2) is 2 (Digital Input) only

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
11	Input Register	Unsigned 16bit	0 to 65535	Universal Input 3: Digital Input counter	No unit	Universal Input 3 Configuration (holding register no. 3) is 2 (Digital Input) only
12	Input Register	Unsigned 16bit	0 to 65535	Universal Input 4: Digital Input counter	No unit	Universal Input 4 Configuration (holding register no. 4) is 2 (Digital Input) only
13	Input Register	Unsigned 16bit	0 to 65535	Universal Input 5: Digital Input counter	No unit	Universal Input 5 Configuration (holding register no. 5) is 2 (Digital Input) only
14	Input Register	Unsigned 16bit	0 to 65535	Universal Input 6: Digital Input counter	No unit	Universal Input 6 Configuration (holding register no. 6) is 2 (Digital Input) only
15	Input Register	Unsigned 16bit	0 to 65535	Universal Input 7: Digital Input counter	No unit	Universal Input 7 Configuration (holding register no. 7) is 2 (Digital Input) only
16	Input Register	Unsigned 16bit	0 to 65535	Universal Input 8: Digital Input counter	No unit	Universal Input 8 Configuration (holding register no. 8) is 2 (Digital Input) only
17	Input Register	Signed 16bit	-20 to +100	Universal Input 1: Temperature	°C (x100)	Universal Input 1 Configuration (holding register no. 1) is between 3 and 7 (Temperature Input) only
18	Input Register	Signed 16bit	-20 to +100	Universal Input 2: Temperature	°C (x100)	Universal Input 2 Configuration (holding register no. 2) is between 3 and 7 (Temperature Input) only
19	Input Register	Signed 16bit	-20 to +100	Universal Input 3: Temperature	°C (x100)	Universal Input 3 Configuration (holding register no. 3) is between 3 and 7 (Temperature Input) only

Register No.	Register Type	Range type	Range value	Parameter	Units	Availability
20	Input Register	Signed 16bit	-20 to +100	Universal Input 4: Temperature	°C (x100)	Universal Input 4 Configuration (holding register no. 4) is between 3 and 7 (Temperature Input) only
21	Input Register	Signed 16bit	-20 to +100	Universal Input 5: Temperature	°C (x100)	Universal Input 5 Configuration (holding register no. 5) is between 3 and 7 (Temperature Input) only
22	Input Register	Signed 16bit	-20 to +100	Universal Input 6: Temperature	°C (x100)	Universal Input 6 Configuration (holding register no. 6) is between 3 and 7 (Temperature Input) only
23	Input Register	Signed 16bit	-20 to +100	Universal Input 7: Temperature	°C (x100)	Universal Input 7 Configuration (holding register no. 7) is between 3 and 7 (Temperature Input) only
24	Input Register	Signed 16bit	-20 to +100	Universal Input 8: Temperature	°C (x100)	Universal Input 8 Configuration (holding register no. 8) is between 3 and 7 (Temperature Input) only

END.