



8170p01\_01

TX-I/O™

## TX-I/O Assortment overview

## TX..1...

## Modules and functions

The following functions are available in the TX-IO modules:

Signal type TX-I/O (Support by different systems: see page 3ff)	Description	Number of I/O points per function	Max. number of functions per module												
			TXM1.8D	TXM1.16D	TXM1.8U	TXM1.8U-ML	TXM1.8X	TXM1.8X-ML	TXM1.8P	TXM1.6R	TXM1.6R-M	TXM1.6RL	TXM1.8RB	TXM1.8T	
<b>Digital inputs</b>															
BI NO	Status indication, volt-free maintained contact, N/O contact	1	8	16	8	8	8	8							
BI NC	Status indication, volt-free maintained contact, N/C contact	1	8	16	8	8	8	8							
BI Pulse NO	Status indication, volt-free pulsed contact, <i>N/O</i>	1	8	16	8	8	8	8							
BI Push NO BI Push NC	Button input single / dual, N/O Button input single / dual, N/C	1/2	8/4	16/8											
MI Switch	Multistate input	2...8	4...1	8...2											
	Count, volt-free pulse contact, mechanical or electronic, normally open, max. 10 Hz, with debouncing max. 25 Hz, with debouncing	1	8	8											
CI Mech (10/25Hz)	Electronic contact max. 100 Hz	1			8	8	8	8							
CI EI (100Hz)		1			8	8	8	8							
<b>Analog inputs</b>															
AI Pt100 4 Wire	Temperature Pt100 Ω (4-wire)	1								8					
AI Pt100	Resistance 250 Ω (Pt 100)	1								8					
AI 250 Ohm	Resistance 250 Ω	1								8					
AI PT1K385	Temperature Pt 1000	1			8	8	8	8	8						
AI PT1K375	Temperature Pt 1000	1			8	8	8	8	8						
AI Ni1000 extended	Temperature LG-Ni 1000 up to 180 °C	1			8	8	8	8	8						
AI Ni1000	Temperature LG-Ni 1000	1			8	8	8	8	8						
AI 2500 Ohm	Resistance 2500 Ω	1			8	8	8	8	8						
AI Pt1000	Resistance 2500 Ω (Pt 1000)	1			8	8	8	8	8						
AI NTC10K	Temperature NTC 10 K	1			8	8	8	8							
AI NTC100K	Temperature NTC 100 K	1			8	8	8	8							
AI T1 (PTC)	Temperature T1 (PTC)	1			8	8	8	8							
AI 0-10V	Voltage DC 0 .. 10V	1			8	8	8	8							
AI 4-20mA	Current DC 4 .. 20 mA	1					8	8							
AI 0-20mA	Current <b>DC 0...20 mA</b> (for 25 mA see CM10563)	1					8	8							
<b>Digital outputs</b>															
BO Relay NO 250V BO Relay NC 250V	Maintained contact, relay, changeover switch, N/O, N/C contact	1								6	6				
BO Triac NO BO Triac NC	Maintained contact, triac, output AC 24 V N/O, N/C contact	1													8
BO Bistable NO BO Bistable NC	Maintained contact, single-pole, bistable, N/O, N/C contact	1										6			
BO Pulse	Pulse	1								6	6				
BO Pulse On-Off	On/off pulse (N/O and N/C contact)	2								3	3				
MO Steps	Multistate-maintained contact, <del>2...6 stage</del>	1...6								6...1	6...1				
MO Pulse	Multistate pulse, <del>4...5 stage</del>	2...6								3...1	3...1				
BO 3-Pos Relay	Pulse, control signal, three-pos.output, internal stroke algorithm (relay)	2								3	3				
BO 3-PosTriac	Pulse, control signal, three-pos.output, internal stroke algorithm (triac, AC 24 V)	2													4
BO PWM	Pulse width modulation, output AC 24 V	1													8
BO Blind Relay	Maintained contact, relay, blinds control with 2/3 end switches	2/4												4/2	
<b>Analog outputs</b>															
AO 0-10V	Proportional control signal DC 0...10 V	1			8	8	8	8							
AO 4-20mA	Proportional control signal DC 4...20 mA	1					4	4							
<b>Indication and local override</b>															
	Local override				X	X				X					
	LCD display				X	X									
	Green I/O status LEDs		X	X	X	X	X	X	X			X	X	X	
	3-color I/O status LEDs (if supported by signal type)	X										X			

**Example of a read operation** The Y250T function (control signal, three-position output) uses 2 I/O points.  
One TXM1.6R relay module can accommodate 3 actuators.

## Compatibility, signal type designation

Description	Support by building automation and control system					
	Desigo TRA V5 Signaltype (BACnet object type)	Desigo V5 Primary controller Island bus integration	DESIGO V4, V4.1 Island bus integration	DESIGO V2.37 and later Integration via P-Bus-BIM	Simatic S7 300/400 Integration via PROFINET BIM	UNIGYR V3 and later VISONIK BPS V12 and later PRV1 V6 and later Integration via P-Bus-BIM
<b>Digitale inputs</b>						
Status indication, volt-free maintained contact, N/O, N/C contact	BI NO (BI)	D20	D20	D20	BI_STATIC	D20
	BI NC (BI)	2)	2)	D20R	BI_STATIC	D20R
Status indication, volt-free pulsed contact, N/O, NC contact (with storage function)	BI Pulse NO (BI)	D20S	D20S	D20S	BI_PULSE	D20S
	BI Pulse NC (BI)	2)	2)	2)		2)
Pushbutton input, single / dual, N/O, NC contact	BI Push NO 1) (BlIn, LgtIn)	(Use D20S) 3)				
	BI Push NC 1) (BlIn, LgtIn)					
Multistate input, 2...8 stage	MI Switch NO / NC 1) (MI)	(Use D20)				
Count, volt-free pulse contact, mechanical or electronic, normally open, max. 10 Hz, with debouncing max. 25 Hz, with debouncing electronic contact max. 100 Hz		C	C	C	CI_Limited CI CI	C
		C	C	C		
		C	C			
<b>Analog inputs</b>						
Temperature Pt100 Ω (4-wire)		Pt100_4	Pt100_4		AI_PT100_4	
Resistance 250 Ω (Pt 100)		P100 (4-Draht)	P100 (4-Draht)	P100 (4-Draht)		P100 (4-Draht)
Resistance 250 Ω		R250 (2-Draht)	R250 (2-Draht)		AI_R250	
Temperature Pt 1000 (Europe)	AI PT1K385 (AI)	Pt1K 385	Pt1K 385		AI_PT1K385	
Temperature Pt 1000 (USA)	AI PT1K375 (AI)	Pt1K 375	Pt1K 375		AI_PT1K375	
Resistance 2500 Ω (Pt 1000)		P1K	P1K	P1K		P1K
Temperature LG-Ni 1000, up to 180 °C		Ni1K	Ni1K		AI_Ni1K	
Temperature LG-Ni 1000	AI Ni1000 (AI)	R1K	R1K	R1K		R1K
Resistance 2500 Ω	AI 2500 Ohm (AI)	R2K5	R2K5		AI_R2K5	
Temperature NTC 10 K	AI NTC10K (AI)	NTC10 K	NTC10 K		AI_NTC10 K	
Temperature NTC 100 K	AI NTC100K (AI)	NTC100 K	NTC100 K		AI_NTC100 K	
Temperature T1 (PTC)	AI T1 (PTC) (AI)	T1	T1	T1	AI_T1	T1
Voltage DC 0 .. 10V	AI 0-10V (AI)	U10	U10	U10	AI_U10N	U10
Current DC 4 .. 20 mA		I420	I420	I420	AI_I420	I420
Current <b>DC 0...20 mA</b> (for 25 mA see CM10563)		I25	I25	I25	AI_I020	I25
<b>Digital outputs</b>						
Maintained contact, relay, changeover switch <b>N/O, NC contact</b>	BO Relay NO 250V (BO)	Q250	Q250	Q250	BO_Q250	Q250
	BO Relay NC 250V (BO)					
Maintained contact, triac, output AC 24 V <b>N/O, NC contact</b>	BO Triac NO 1) (BO)	Q250_T 1)				
	BO Triac NC 1) (BO)					
Maintained contact, bistable (for light applications), <b>N/O, NC contact</b>	BO Bistable NO (LgtBOOut)	Q250B			BO_BISTABIL	Q250B
	BO Bistable NC (LgtBOOut)					
Pulse	BO Pulse (BO)	(use MO Q250-P1)			BO_Q250_P	
Pulse On-Off, <b>N/O and NC contact</b>	BO Pulse On-Off (BO)	Q250-P / Q250A-P	Q250-P / Q250A-P	Q250-P / Q250A-P		Q250-P / Q250A-P
Multistate maintained contact	MO Steps (1...6-stage) (BO)	Q-M1...M4	Q-M1...M4	Q-M3	MO(n)_STATIC (2 4-stufig)	Q-M3
Multistate pulse		Q250-P1...P5	Q250-P1...P5	Q250-P3	MO(n)_PULSE n = 1...4	Q250-P3
Pulse, control signal, three-position output, internal stroke algorithm (relay)	BO 3-Pos Relay (AO)	Y250T	Y250T	Y250T	AO_Y250T	Y250T
Pulse, control signal, three-position output, internal stroke algorithm (Triac, AC 24 V)	BO 3-Pos Triac 1) (AO)	Y250T 1)				
Pulse width modulation, output AC 24 V	BO PWM 1) (AO)	PWM 1)				
Blinds control with 2 / 3 end switches	BO Blind Relay 1) (BlOut)					
<b>Analog outputs</b>						
Proportional control signal DC 0...10 V	AO 0-10V (AO)	Y10S	Y10S	Y10S	AO_U10N	Y10S
Proportional control signal DC 4...20 mA		Y420	Y420	Y420	AO_I420N	Y420

1) Signal type is only supported by modules from series D.

2) Workaround for N/C contact: Use D20 and set "Polarity" = Indirect.

3) D20S for light / blinds: Consider reaction time / performance!

## Functions and modules: Desigo TRA V5

Description	Signal type Desigo TRA V5 (BA Cnet object type)	Number of I/O points per function	Max. number of functions per module							
			TXM1.8D	TXM1.16D	TXM1.8U	TXM1.6R	TXM1.6RL	TXM1.8RB	TXM1.8T	
<b>Digitale inputs</b>										
Status indication, volt-free maintained contact, N/O, N/C contact	BI NO (BI)	1	8	16	8					
	BI NC (BI)	1	8	16	8					
Status indication, volt-free pulsed contact, N/O, NC contact (with storage function)	BI Pulse NO (BI)	1	8	16	8					
	BI Pulse NC (BI)	1	8	16	8					
Pushbutton input, single / dual, N/O, NC contact	BI Push NO 1) (Blsln, Lgtln)	1/2	8/4	16/8						
	BI Push NC 1) (Blsln, Lgtln)	1/2	8/4	16/8						
Multistate input, 2...8 stage	MI Switch NO / NC 1) (MI)	2...8	4...1	8...2						
<b>Analog inputs</b>										
Temperature Pt 1000 (Europe)	AI PT1K385 (AI)	1			8					
Temperature Pt 1000 (USA)	AI PT1K375 (AI)	1			8					
Temperature LG-Ni 1000	AI Ni1000 (AI)	1			8					
Resistance 2500 Ω	AI 2500 Ohm (AI)	1			8					
Temperature NTC 10 K	AI NTC10K (AI)	1			8					
Temperature NTC 100 K	AI NTC100K (AI)	1			8					
Temperature T1 (PTC)	AI T1 (PTC) (AI)	1			8					
Voltage DC 0 ... 10V	AI 0-10V (AI)	1			8					
<b>Digital outputs</b>										
Maintained contact, relay, changeover switch N/O, NC contact	BO Relay NO 250V (BO)	1				6				
	BO Relay NC 250V (BO)	1				6				
Maintained contact, triac, output AC 24 V N/O, NC contact	BO Triac NO 1) (BO)	1								8
	BO Triac NC 1) (BO)	1								8
Maintained contact, bistable (for light applications), N/O, NC contact	BO Bistable NO (LgtBOut)	1					6			
	BO Bistable NC (LgtBOut)	1					6			
Pulse	BO Pulse (BO)	1				6				
Pulse On-Off, N/O and NC contact	BO Pulse On-Off (BO)	2				3				
Multistate maintained contact	MO Steps (1...6-stage) (BO)	1...6					6...1			
	BO 3-Pos Relay (AO)	2					3			
Pulse, control signal, three-position output, internal stroke algorithm (relay)	BO 3-Pos Triac 1) (AO)	2								4
Pulse, control signal, three-position output, internal stroke algorithm (Triac, AC 24 V)	BO PWM 1) (AO)	1								8
Blinds control with 2 / 3 end switches	BO Blind Relay 1) (BlslOut)	2/4							4/2	
<b>Analog outputs</b>										
Proportional control signal DC 0...10 V	AO 0-10V (AO)	1				8				

1) Signal type is only supported by modules from series D.

## Functions and modules: Desigo PX V5

Description	Desigo V5 Primary controller Island bus integration	Number of I/O points per function	Max. number of functions per module									
			TXM1.8D	TXM1.16D	TXM1.8U	TXM1.8U-ML	TXM1.8X	TXM1.8X-ML	TXM1.8P	TXM1.16R	TXM1.16R-M	TXM1.16RL
<b>Digitale inputs</b>												
Status indication, volt-free maintained contact, N/O, N/C contact	D20	1	8	16	8	8	8	8				
	2)	1	8	16	8	8	8	8				
Status indication, volt-free pulsed contact, N/O, NC contact (with storage function)	D20S 2)	1	8	16	8	8	8	8				
Pushbutton input, single / dual, N/O, NC contact	(Use D20S) 3)	1	8	16	8	8	8	8				
Multistate input	(Use D20)	1	8	16	8	8	8	8				
Count, volt-free pulse contact, mechanical or electronic, normally open, max. 10 Hz, with debouncing max. 25 Hz, with debouncing electronic contact max. 100 Hz	C C C	1 1 1	8 8 8	8 8 8	8 8 8	8 8 8	8 8 8	8 8 8				
<b>Analog inputs</b>												
Temperature Pt100 Ω (4-wire)	Pt100_4	1							8			
Resistance 250 Ω (Pt 100)	P100 (4-wire)	1							8			
Resistance 250 Ω	R250 (2-wire)	1							8			
Temperature Pt 1000 (Europe)	Pt1K 385	1			8	8	8	8	8			
Temperature Pt 1000 (USA)	Pt1K 375	1			8	8	8	8	8			
Resistance 2500 Ω (Pt 1000)	P1K	1			8	8	8	8	8			
Temperature LG-Ni 1000, up to 180 °C	Ni1K	1			8	8	8	8	8			
Temperature LG-Ni 1000	R1K	1			8	8	8	8	8			
Resistance 2500 Ω	R2K5	1			8	8	8	8	8			
Temperature NTC 10 K	NTC10 K	1			8	8	8	8	8			
Temperature NTC 100 K	NTC100 K	1			8	8	8	8	8			
Temperature T1 (PTC)	T1	1			8	8	8	8	8			
Voltage DC 0 .. 10V	U10	1			8	8	8	8	8			
Current DC 4 .. 20 mA	I420	1						8	8			
Current <b>DC 0...20 mA</b> (for 25 mA see CM10563)	I25	1						8	8			
<b>Digital outputs</b>												
Maintained contact, relay, changeover switch	Q250	1								6	6	
Maintained contact, triac, output AC 24 V <b>N/O contact</b>	Q250_T 1)	1										8
Maintained contact, bistable (for light applications)	Q250B	1										6
Pulse	(use MO Q250-P1)	1								6	6	
Pulse On-Off, <b>N/O and NC contact</b>	Q250-P / Q250A-P	2								3	3	
Multistate maintained contact	Q-M1...M4	1...6								6...1	6...1	
Multistate pulse	Q250-P1...P5	2...6								3...1	3...1	
Pulse, control signal, three-position output, internal stroke algorithm (relay)	Y250T	2								3	3	
Pulse, control signal, three-position output, internal stroke algorithm (Triac, AC 24 V)	Y250T 1)	2										4
Pulse width modulation, output AC 24 V	PWM 1)	1										8
<b>Analog outputs</b>												
Proportional control signal DC 0...10 V	Y10S	1			8	8	8	8				
Proportional control signal DC 4...20 mA	Y420	1					4	4				

- 1) Signal type is only supported by modules from series D.
- 2) Workaround for N/C contact: Use D20 and set "Polarity" = Indirect.
- 3) D20S for light / blinds: Consider reaction time / performance!

## Type summary, documentation

	Type (ASN No.)	Description	Document
<b>I/O modules</b>	TXM1.8D	Digital input module, 8 I/O points	CM2N8172
	TXM1.16D	Digital input module, 16 I/O points	CM2N8172
	TXM1.8U	Universal module	CM2N8173
	TXM1.8U-ML	Universal module with local override facility and LCD	CM2N8173
	TXM1.8X	Super universal module	CM2N8174
	TXM1.8X-ML	Super universal module with local override facility and LCD	CM2N8174
	TXM1.8P	Resistance measuring module	CM2N8176
	TXM1.6R	Relay module	CM2N8175
	TXM1.6R-M	Relay module with local override facility	CM2N8175
	TXM1.6RL	Relay module bistable (for lighting applications)	CM2N8177
	TXM1.8RB	Blinds module	CM2N8178
	TXM1.8T	Triac module	CM2N8179
	<b>I/O OPEN</b>	TXI1.OPEN	TX OPEN RS232/485 module
<b>Power supply</b>	TXS1.12F10	Power supply module 1.2 A, fuse 10A	CM2N8183
	TXS1.EF10	Bus connection module, fuse 10A	CM2N8183
<b>Bus interface</b>	TXB1.PBUS	P-Bus Interface module with power supply 1.2A, fuse 10A	CM2N8180
	TXB1.PROFIBUS	Profinet BIM	CM2N8186
<b>Island bus expansion</b>	TXA1.IBE	Island bus expansion module (Compatibility see CM110562)	CM2N8184
<b>Address keys</b>	TXA1.K12	Address keys 1 ... 12 + reset key	CM110562
	TXA1.K24	Address keys 1 ... 24 + 2 reset keys	
	TXA1.K-48	Address keys 25 ... 48 + 2 reset keys	
	TXA1.K-72	Address keys 49 ... 72 + 2 reset keys	
	TXA1.K-96	Address keys 73 ... 96 + 2 reset keys	
	TXA1.K-120	Address keys 97 ... 120 + 2 reset keys	
	TXA1.5K120	Address keys 5, 10, 15 ... 120 + 2 reset keys	
<b>Address labels</b>	TXA1.LA4	Address label sheets A4 (100 pcs. per box)	CM110562
	TXA1.LLT	Address label sheets Letter (100 pcs. per box)	
	TXA1.LH	Spare transparent label holders (10 pcs. per box) (for modules manufactured before fall 2010)	
	TXA1.LH2	Spare transparent label holders (10 pcs. per box) (for modules manufactured from fall 2010)	
<b>Engineering</b>		TX-I/O™ Functions and operation	CM110561
		TX-I/O™ Planning and installation manual (including an overview of the supported functions in different building automation and control systems)	CM110562
		Replacement of legacy I/O modules	CM110563
<b>Dimensions L x W x H</b>	I/O modules	64 x 98 x 70 mm	
	Power supply module,	96 x 98 x 70 mm	
	I/O OPEN module		
	Bus connection module,	32 x 98 x 70 mm	
	Island bus expansion module		
	Bus Interface modules	128 x 98 x 70 mm	