

Control- and safety isolating- resp. isolating transformer

TT1



General Data

Rated input voltage 219 Vac - 462 Vac
Rated output voltage 2 x 115 Vac
Rated power 1000 - 25000 VA
Insulation class F
Maximum ambient temperature 40 °C
Efficiency up to 98 %
Degree of protection IP 00
Optionally adapted package for higher degrees of protection

Advantages

Safe galvanic isolation
Patented assembly technology
Very good corrosion protection and low noise thanks to BLOCKIMPEX vacuum impregnation
Primary side $\pm 5\%$ tapplings for voltage adjustment
Fixed, contact protected screw connection terminals complying with UVV BGV A3
Multifunctional fixing rail with 8 oval slots
Space saving, thanks to horizontal design
Integrated crane eyes
Non-slip terminals

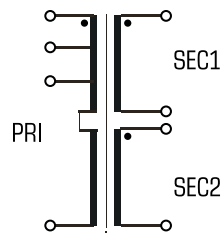
Applications

Isolating transformer for the safe electrical isolation of the input and output sides. The transformer may be used to set up protective separation as a protective measure in accordance with VDE 0100.

As a control transformer for the electrical isolation of the input and output sides. The construction of the transformer to supply control systems according to VDE 0113 is designed.

As a safety isolating transformer for the safe electrical isolation of the input and output sides. The transformer is suitable for creating SELV and PELV circuits because of the limit on the output voltage.

Sample application



Approvals



UL 5085, UL 1561, CSA 22.2 (E 103521)

Standards



Control transformer
to: VDE 0570 Teil 2-2, DIN EN 61558-2-2, EN 61558-2-2, IEC 61558-2-2,
UL 5085-1/-2, CSA 22.2 No.66

Isolating transformer
to: VDE 0570 Part 2-4, DIN EN 61558-2-4, EN 61558-2-4, IEC 61558-2-4,
UL 5085-1/-2, CSA 22.2 No.66

Safety isolating transformer
to: VDE 0570 Part 2-6, DIN EN 61558-2-6, EN 61558-2-6, IEC 61558-2-6,
UL 5085-1/-2, CSA 22.2 No.66



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Typ	TT1 1-4-23	TT1 1-23-24	TT1 1,6-4-23	TT1 1,6-4-42	TT1 1,6-23-24	TT1 2-4-23
Electrical data						
Operating data						
Short circuit voltage uK	ca. 7,2%	ca. 7,3%	ca. 5,6%	ca. 5,6%	ca. 5,4%	ca. 5,0%
Input						
Rated input current	2,9 A / 2,7 A / 2,6 Aac	4,9 A / 4,7 A / 4,5 Aac	4,5 A / 4,3 A / 4,1 Aac	4,5 A / 4,3 A / 4,1 Aac	7,8 A / 7,4 A / 7,1 A	5,6 A / 5,3 A / 5,1 Aac
Rated input voltage	380 Vac / 400 Vac / 420 Vac	219 Vac / 230 Vac / 241 Vac	380 Vac / 400 Vac / 420 Vac	380 Vac / 400 Vac / 420 Vac	219 Vac / 230 Vac / 241 Vac	380 Vac / 400 Vac / 420 Vac
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output current	4,3 Aac	41,7 Aac	7 Aac	38,1 Aac	67 Aac	8,7 Aac
Rated output voltage	2 x 115 Vac	24 Vac	2 x 115 Vac	42 Vac	24 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	1000 VA	1000 VA	1600 VA	1600 VA	1600 VA	2000 VA
Rated power VDE (KB cos phi=0.5)	2270 VA	2300 VA	4080 VA	4000 VA	4260 VA	5480 VA
Vector group	lii0	lii0	lii0	lii0	lii0	lii0
Efficiency	92%	92%	93 %	93 %	93 %	94%
Standards						
Classification	Control- and isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer	Control- and safety isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Cooling method	AN	AN	AN	AN	AN	AN
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof
Order numbers						
Order Number	TT1 1-4-23	TT1 1-23-24	TT1 1,6-4-23	TT1 1,6-4-42	TT1 1,6-23-24	TT1 2-4-23

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Control- and safety isolating- resp. isolating transformer

TT1

Typ	TT1 2-23-24	TT1 2,5-4-23	TT1 2,5-4-42	TT1 2,5-23-24	TT1 3-4-23	TT1 3-5-23
Electrical data						
Operating data						
Short circuit voltage uK	ca. 5,0%	ca. 4,8 %	ca. 4,8 %	ca. 4,8 %	ca. 4,2 %	ca. 4,0%
Input						
Rated input current	9,6 A /9,2 A /8,8 Aac	7,0 A /6,6A /6,3 Aac	6,9 A /6,6A /6,3 Aac	12,0 A /11,5 A /10,9 Aac	8,3 A /7,9 A /7,5 Aac	6,7 A /6,3 A /6,0 Aac
Rated input voltage	219 Vac /230 Vac /241 Vai	380 Vac /400 Vac /420 Vai	380 Vac /400 Vac /420 Vai	219 Vac /230 Vac /241 Vai	380 Vac /400 Vac /420 Vai	475 Vac /500 Vac /525 Vac
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output current	83 Aac	10,9 Aac	59,5 Aac	104 Aac	13,1 Aac	13,1 Aac
Rated output voltage	24 Vac	2x 115 Vac	42 Vac	24 Vac	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	2000 VA	2500 VA	2500 VA	2500 VA	3000 VA	3000 VA
Rated power VDE (KB cos phi=0.5)	5430 VA	6560 VA	6470 VA	6700 VA	8500 VA	8500 VA
Vector group	lii0	lii0	lii0	lii0	lii0	lii0
Efficiency	94 %	94 %	94 %	94 %	95 %	95 %
Standards						
Classification	Control- and safety isolating transformer	Control- and isolating transformer	Control- and safety isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer	Control- and isolating transformer
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Cooling method	AN	AN	AN	AN	AN	AN
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof
Order numbers						
Order Number	TT1 2-23-24	TT1 2,5-4-23	TT1 2,5-4-42	TT1 2,5-23-24	TT1 3-4-23	TT1 3-5-23



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Typ	TT1 3-44-23	TT1 4-4-23	TT1 4-5-23	TT1 4-44-23	TT1 5-4-23	TT1 5-5-23
Electrical data						
Operating data						
Short circuit voltage uK	ca. 4,2%	ca. 4,0%	ca. 4,1%	ca. 4,0 %	ca. 3,3%	ca. 3,2%
Input						
Rated input current	7,6 A /7,2 A /6,9 Aac	11,1 A /10,6 A /10,0 Aac	8,9 A /8,4 A /8,0 Aac	10,1 A /9,6 A /9,1 Aac	13,7 A /13,0 A /12,4 Aac	11,0 A /10,5 A /10,0 Aac
Rated input voltage	418 Vac /440 Vac /462 Vac	380 Vac /400 Vac /420 Vac	475 Vac /500 Vac /525 Vac	418 Vac /440 Vac /462 Vac	380 Vac /400 Vac /420 Vac	475 Vac /500 Vac /525 Vac
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output current	13,1 Aac	17,4 Aac	17,4 Aac	17,4 Aac	21,7 Aac	21,7 Aac
Rated output voltage	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	3000 VA	4000 VA	4000 VA	4000 VA	5000 VA	5000 VA
Rated power VDE (KB cos phi=0.5)	8500 VA	12450 VA	12450 VA	12450 VA	16400 VA	16400 VA
Vector group	lii0	lii0	lii0	lii0	lii0	lii0
Efficiency	95 %	95 %	95 %	95 %	95 %	95 %
Standards						
Classification	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Cooling method	AN	AN	AN	AN	AN	AN
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof
Order numbers						
Order Number	TT1 3-44-23	TT1 4-4-23	TT1 4-5-23	TT1 4-44-23	TT1 5-4-23	TT1 5-5-23

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Control- and safety isolating- resp. isolating transformer

TT1

Typ	TT1 5-44-23	TT1 6,3-4-23	TT1 6,3-5-23	TT1 6,3-44-23	TT1 8-4-23	TT1 8-5-23
Electrical data						
Operating data						
Short circuit voltage uK	ca. 3,3%	ca. 2,8%	ca. 2,8%	ca. 2,8%	ca. 2,7%	ca. 2,7%
Input						
Rated input current	12,5 A / 11,9 A / 11,3 Aac	17,1 A / 16,3 A / 15,5 Aac	13,8 A / 13,1 A / 12,5 Aac	15,7 A / 14,9 A / 14,2 Aac	21,8 A / 20,7 A / 19,7 Aac	17,5 A / 16,6 A / 15,9 Aac
Rated input voltage	418 Vac / 440 Vac / 462 Vac	380 Vac / 400 Vac / 420 Vac	475 Vac / 500 Vac / 525 Vac	418 Vac / 440 Vac / 462 Vac	380 Vac / 400 Vac / 420 Vac	475 Vac / 500 Vac / 525 Vac
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output current	21,7 Aac	27,4 Aac	27,4 Aac	27,4 Aac	34,8 Aac	34,8 Aac
Rated output voltage	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	5000 VA	6300 VA	6300 VA	6300 VA	8000 VA	8000 VA
Rated power VDE (KB cos phi=0.5)	16400 VA	21500 VA	21500 VA	21500 VA	28000 VA	28000 VA
Vector group	lii0	lii0	lii0	lii0	lii0	lii0
Efficiency	95 %	96 %	96 %	96 %	96 %	96 %
Standards						
Classification	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Cooling method	AN	AN	AN	AN	AN	AN
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof
Order numbers						
Order Number	TT1 5-44-23	TT1 6,3-4-23	TT1 6,3-5-23	TT1 6,3-44-23	TT1 8-4-23	TT1 8-5-23



Control- and safety isolating- resp. isolating transformer **TT1**

Typ	TT1 8-44-23	TT1 10-4-23	TT1 10-5-23	TT1 10-44-23	TT1 12,5-4-23	TT1 15-4-23
Electrical data						
Operating data						
Short circuit voltage uK	ca. 2,7%	ca. 1,5%	ca. 1,5%	ca. 1,5%		ca. 1,1%
Input						
Rated input current	19,9 A /18,9 A /18,0 Aac	27,2 A /25,7 A /24,4 Aac	21,6 A /20,5 A /19,6 Aac	24,2 A /23,2 A /22,2 Aac	33,4 A /31,9 A /30,6 Aac	40,2 A /37,7 A /35,5 Aac
Rated input voltage	418 Vac /440 Vac /462 Vac	380 Vac /400 Vac /420 Vac	475 Vac /500 Vac /525 Vac	418 Vac /440 Vac /462 Vac	380 Vac /400 Vac /420 Vac	380 Vac /400 Vac /420 Vac
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output current	34,8 Aac	43,5 Aac	43,5 Aac	43,5 Aac	54,4 Aac	65,2 Aac
Rated output voltage	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	8000 VA	10000 VA	10000 VA	10000 VA	12500 VA	15000 VA
Rated power VDE (KB cos phi=0.5)	28000 VA	34300 VA	34300 VA	34300 VA	41800 VA	59000 VA
Vector group	lii0	lii0	lii0	lii0	lii0	lii0
Efficiency	96%	97 %	97 %	97 %	95,5 %	ca. 98 %
Standards						
Classification	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and isolating transformer
Approvals						
Approvals	cURus	cURus	cURus	cURus	cURus	cURus
Environment						
Ambient temperature max.	40 °C	40 °C	40 °C	40 °C	40 °C	40 °C
Cooling method	AN	AN	AN	AN	AN	AN
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00	IP 00	IP 00	IP 00	IP 00
Safety class (prepared)	I	I	I	I	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof	non-short-circuit proof
Order numbers						
Order Number	TT1 8-44-23	TT1 10-4-23	TT1 10-5-23	TT1 10-44-23	TT1 12,5-4-23	TT1 15-4-23

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Control- and safety isolating- resp. isolating transformer

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Typ	TT1 20-4-23	TT1 25-4-23
Electrical data		
Operating data		
Short circuit voltage uK	ca. 1%	ca. 0,9%
Input		
Rated input current	53,6 A / 50,6 A / 48 Aac	65,7 A / 63,2 A / 60,9 Aac
Rated input voltage	380 Vac / 400 Vac / 420 Va _i	380 Vac / 400 Vac / 420 Va _i
Frequency range	50 - 60 Hz	50 - 60 Hz
Output		
Rated output current	87 Aac	109 Aac
Rated output voltage	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	20000 VA	25000 VA
Rated power VDE (KB cos phi=0.5)	85800 VA	133000 VA
Vector group	lii0	lii0
Efficiency	ca. 98 %	
Standards		
Classification	Control- and isolating transformer	Control- and isolating transformer
Approvals		
Approvals	cURus	cURus
Environment		
Ambient temperature max.	40 °C	40 °C
Cooling method	AN	AN
Safety and protection		
Type	Open type	Open type
Class of Insulation System	VDE=F, UL=class 155	VDE=F, UL=class 155
Protection index	IP 00	IP 00
Safety class (prepared)	I	I
Short circuit strength	non-short-circuit proof	non-short-circuit proof
Order numbers		
Order Number	TT1 20-4-23	TT1 25-4-23



Control- and safety isolating- resp. isolating transformer **TT1**

Typ	Terminals	Fixing method	Fixing screws	Weight	Core type	Dimensions W x H x D
TT1 1-4-23	Screw-type terminal	Fixing rail	M6	9.10 kg	UI 114/40	150 x 220 x 125 mm
TT1 1-23-24	Screw-type terminal	Fixing rail	M6	9.10 kg	UI 114/40	150 x 220 x 140 mm
TT1 1,6-4-23	Screw-type terminal	Fixing rail	M6	13.80 kg	UI 120/61	160 x 230 x 145 mm
TT1 1,6-4-42	Screw-type terminal	Fixing rail	M6	13.80 kg	3UI 132/72	160 x 260 x 145 mm
TT1 1,6-23-24	Screw-type terminal	Fixing rail	M6	13.50 kg	UI 120/61	160 x 265 x 145 mm
TT1 2-4-23	Screw-type terminal	Fixing rail	M10	17.00 kg	UI 132/60	175 x 245 x 140 mm
TT1 2-23-24	Screw-type terminal	Fixing rail	M10	17.00 kg	UI 132/60	175 x 285 x 140 mm
TT1 2,5-4-23	Screw-type terminal	Fixing rail	M12	18.50 kg	3UI 180/78	200 x 275 x 155 mm
TT1 2,5-4-42	Screw-type terminal	Fixing rail	M10	21.00 kg	3UI 180/78	200 x 310 x 155 mm
TT1 2,5-23-24	Screw-type terminal	Fixing rail	M12	20.00 kg	3UI 180/78	200 x 315 x 155 mm
TT1 3-4-23	Screw-type terminal	Fixing rail	M10	24.00 kg	UI 150/65	200 x 275 x 165 mm
TT1 3-5-23	Screw-type terminal	Fixing rail	M10	24.00 kg	UI 150/65	200 x 275 x 165 mm
TT1 3-44-23	Screw-type terminal	Fixing rail	M10	24.00 kg	UI 150/65	200 x 275 x 165 mm
TT1 4-4-23	Screw-type terminal	Fixing rail	M10	31.00 kg	UI 180/63	240 x 335 x 165 mm
TT1 4-5-23	Screw-type terminal	Fixing rail	M10	31.00 kg	UI 180/63	240 x 335 x 165 mm
TT1 4-44-23	Screw-type terminal	Fixing rail	M10	31.00 kg	UI 180/63	240 x 335 x 165 mm
TT1 5-4-23	Screw-type terminal	Fixing rail	M10	39.00 kg	UI 180/63	240 x 335 x 165 mm
TT1 5-5-23	Screw-type terminal	Fixing rail	M10	39.00 kg	UI 180/78	240 x 335 x 195 mm
TT1 5-44-23	Screw-type terminal	Fixing rail	M10	39.00 kg	UI 180/78	240 x 335 x 195 mm
TT1 6,3-4-23	Screw-type terminal	Fixing rail	M10	48.00 kg	3UI 240/140	240 x 335 x 210 mm
TT1 6,3-5-23	Screw-type terminal	Fixing rail	M10	48.00 kg	UI 180/93	240 x 335 x 210 mm
TT1 6,3-44-23	Screw-type terminal	Fixing rail	M10	48.00 kg	UI 180/93	240 x 335 x 210 mm
TT1 8-4-23	Screw-type terminal	Fixing rail	M10	60.00 kg	UI 210/88	280 x 385 x 215 mm
TT1 8-5-23	Screw-type terminal	Fixing rail	M10	60.00 kg	UI 210/88	280 x 385 x 215 mm
TT1 8-44-23	Screw-type terminal	Fixing rail	M10	60.00 kg	UI 210/88	280 x 385 x 215 mm
TT1 10-4-23	Screw-type terminal	Fixing rail	M10	75.00 kg	UI 210/103	280 x 385 x 230 mm
TT1 10-5-23	Screw-type terminal	Fixing rail	M10	75.00 kg	UI 210 /103	280 x 385 x 230 mm
TT1 10-44-23	Screw-type terminal	Fixing rail	M10	75.00 kg	UI 210/103	280 x 385 x 230 mm
TT1 12,5-4-23	Screw-type terminal	Fixing rail	M12	105.00 kg	3UI 180/63	320 x 460 x 250 mm
TT1 15-4-23	Screw-type terminal	Fixing rail	M12	98.00 kg	UI 240/110	320 x 470 x 250 mm
TT1 20-4-23	Screw-type terminal	Fixing rail	M12	133.00 kg	UI 240/140	320 x 470 x 280 mm
TT1 25-4-23	Screw-type terminal	Fixing rail	M12	153.00 kg	UI 240/170	320 x 490 x 310 mm

Mechanical data

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