

Control- and safety isolating- resp. isolating transformer

STEU



General Data

Rated input voltage 230 and 400 Vac
Rated output voltage 24 - 230 Vac
Rated power 63 - 2500 VA
Insulation class B
Maximum ambient temperature 40 °C
Efficiency up to 94 %
Degree of protection IP 00

Advantages

Dual input voltage 230 and 400 Vac
Very good switch-on behaviour thanks to reduced starting currents
High performance for the volume thanks to compact design
Primary side ± 15 V tapplings for voltage adjustment
Very good corrosion protection and low noise thanks to vacuum impregnation
Quick to cable up thanks to the use of spring-clamp terminals
Contact protected screw connection terminals complying with UVV BGV A3
Simple mounting thanks to robust metal footplate with oval slots
Up to 250 VA with combination footplate for bolted and rail mounting

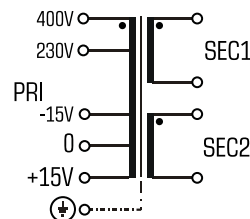
Applications

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 an 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 safety 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



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

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

Isolating transformer
to: VDE 0570 Part2-4, DIN EN 61558-2-4, EN 61558-2-4, IEC 61558-2-4, UL 5085-1/-2, CSA 22.2 No.66

Approvals



UL 5085-1/-2, CSA 22.2 No.66



Control- and safety isolating- resp. isolating transformer
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Typ	STEU 63/48	STEU 63/24	STEU 63/23	STEU 100/48	STEU 100/24	STEU 100/23
Electrical data						
Input						
Rated input voltage	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac
Tappings Input	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output voltage	2x24 Vac	2 x 12 Vac	2 x 115 Vac	2x24 Vac	2 x 12 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	63 VA	63 VA	63 VA	100 VA	100 VA	100 VA
Rated power VDE (KB cos phi=0.5)	175 VA	175 VA	175 VA	310 VA	310 VA	175 VA
No-load voltage (app. x factor)	1.10	1.10	1.10	1.07	1.07	1.07
Efficiency	86.0 %	86.0 %	86.0 %	86.0 %	86.0 %	86.0 %
Standards						
Classification	Control- and safety isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer	Control- and 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
Type of cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130
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
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I rated related to set)						
Setting range 230 ±15 Vac	0.25 - 0.40 A	0.25 - 0.40 A	0.25 - 0.40 A	0.40 - 0.63 A	0.40 - 0.63 A	0.40 - 0.63 A
Setting value 230 ±15 Vac	0.35 A	0.35 A	0.35 A	0.50 A	0.50 A	0.50 A
Setting range 400 ±15 Vac	0.16 - 0.25 A	0.16 - 0.25 A	0.16 - 0.25 A	0.25 - 0.40 A	0.25 - 0.40 A	0.25 - 0.40 A
Setting value 400 ±15 Vac	0.20 A	0.20 A	0.20 A	0.29 A	0.29 A	0.29 A
Order numbers						
Order Number	STEU 63/48	STEU 63/24	STEU 63/23	STEU 100/48	STEU 100/24	STEU 100/23

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1 Transformers

Control transformers



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



Typ	STEU 160/48	STEU 160/24	STEU 160/23	STEU 250/48	STEU 250/24	STEU 250/23
Electrical data						
Input						
Rated input voltage	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac
Tappings Input	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output voltage	2x24 Vac	2 x 12 Vac	2 x 115 Vac	2x24 Vac	2 x 12 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	160 VA	160 VA	160 VA	250 VA	250 VA	250 VA
Rated power VDE (KB cos phi=0.5)	490 VA	490 VA	490 VA	850 VA	850 VA	850 VA
No-load voltage (app. x factor)	1.10	1.10	1.10	1.07	1.07	1.07
Efficiency	86.0 %	86.0 %	86.0 %	88.0 %	88.0 %	88.0 %
Standards						
Classification	Control- and isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer	Control- and 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
Type of cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130
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
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I _{rated} related to set)						
Setting range 230 ±15 Vac	0.63 - 1.00 A	0.63 - 1.00 A	0.63 - 1.00 A	1.00 - 1.60 A	1.00 - 1.60 A	1.00 - 1.60 A
Setting value 230 ±15 Vac	0.80 A	0.80 A	0.80 A	1.20 A	1.20 A	1.20 A
Setting range 400 ±15 Vac	0.40 - 0.63 A	0.40 - 0.63 A	0.40 - 0.63 A	0.63 - 1.00 A	0.63 - 1.00 A	0.63 - 1.00 A
Setting value 400 ±15 Vac	0.46 A	0.46 A	0.46 A	0.70 A	0.70 A	0.70 A
Order numbers						
Order Number	STEU 160/48	STEU 160/24	STEU 160/23	STEU 250/48	STEU 250/24	STEU 250/23



Control- and safety isolating- resp. isolating transformer
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Typ	STEU 320/48	STEU 320/24	STEU 320/23	STEU 400/24	STEU 400/23	STEU 500/48
Electrical data						
Input						
Rated input voltage	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac
Tappings Input	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output voltage	2x24 Vac	2 x 12 Vac	2 x 115 Vac	2 x 12 Vac	2 x 115 Vac	2x24 Vac
Rated power VDE (DB cos phi=1)	320 VA	320 VA	320 VA	400 VA	400 VA	500 VA
Rated power VDE (KB cos phi=0.5)	1.120 VA	1.120 VA	1.120 VA	1.440 VA	1.440 VA	2.000 VA
No-load voltage (app. x factor)	1.07	1.07	1.07	1.04	1.04	1.04
Efficiency	90.0 %	90.0 %	90.0 %	90.0 %	90.0 %	92.0 %
Standards						
Classification	Control- and isolating transformer	Control- and safety isolating transformer	Control- and 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
Type of cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130
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
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I_{rated} related to set)						
Setting range 230 ±15 Vac	1.00 - 1.60 A	1.00 - 1.60 A	1.00 - 1.60 A	1.60 - 2.50 A	1.60 - 2.50 A	1.60 - 2.50 A
Setting value 230 ±15 Vac	1.50 A	1.50 A	1.50 A	1.90 A	1.90 A	2.40 A
Setting range 400 ±15 Vac	0.63 - 1.00 A	0.63 - 1.00 A	0.63 - 1.00 A	1.00 - 1.60 A	1.00 - 1.60 A	1.00 - 1.60 A
Setting value 400 ±15 Vac	0.88 A	0.88 A	0.88 A	1.10 A	1.10 A	1.40 A
Order numbers						
Order Number	STEU 320/48	STEU 320/24	STEU 320/23	STEU 400/24	STEU 400/23	STEU 500/48

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



Typ	STEU 500/24	STEU 500/23	STEU 630/24	STEU 630/23	STEU 800/48	STEU 800/24
Electrical data						
Input						
Rated input voltage	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac
Tappings Input	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output voltage	2 x 12 Vac	2 x 115 Vac	2 x 12 Vac	2 x 115 Vac	2x24 Vac	2 x 12 Vac
Rated power VDE (DB cos phi=1)	500 VA	500 VA	630 VA	630 VA	800 VA	800 VA
Rated power VDE (KB cos phi=0.5)	2.000 VA	2.000 VA	2.350 VA	2.350 VA	3.400 VA	3.400 VA
No-load voltage (app. x factor)	1.04	1.04	1.04	1.04	1.03	1.03
Efficiency	92.0 %	92.0 %	92.0 %	92.0 %	94.0 %	94.0 %
Standards						
Classification	Control- and safety isolating transformer	Control- and isolating transformer	Control- and safety isolating transformer	Control- and isolating transformer	Control- and isolating transformer	Control- and safety 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
Type of cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130
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
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I _{rated} related to set)						
Setting range 230 ±15 Vac	1.60 - 2.50 A	1.60 - 2.50 A	2.50 - 4.00 A	2.50 - 4.00 A	2.50 - 4.00 A	2.50 - 4.00 A
Setting value 230 ±15 Vac	2.40 A	2.40 A	3.00 A	3.00 A	3.70 A	3.70 A
Setting range 400 ±15 Vac	1.00 - 1.60 A	1.00 - 1.60 A	1.60 - 2.50 A	1.60 - 2.50 A	1.60 - 2.50 A	1.60 - 2.50 A
Setting value 400 ±15 Vac	1.40 A	1.40 A	1.70 A	1.70 A	2.20 A	2.20 A
Order numbers						
Order Number	STEU 500/24	STEU 500/23	STEU 630/24	STEU 630/23	STEU 800/48	STEU 800/24



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Typ	STEU 800/23	STEU 1000/48	STEU 1000/24	STEU 1000/23	STEU 1600/23	STEU 2000/23
Electrical data						
Input						
Rated input voltage	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac	230/400 Vac
Tappings Input	±15 V	±15 V	±15 V	±15 V	±15 V	±15 V
Frequency range	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz	50 - 60 Hz
Output						
Rated output voltage	2 x 115 Vac	2x24 Vac	2 x 12 Vac	2 x 115 Vac	2 x 115 Vac	2 x 115 Vac
Rated power VDE (DB cos phi=1)	800 VA	1.000 VA	1.000 VA	1.000 VA	1.600 VA	2.000 VA
Rated power VDE (KB cos phi=0.5)	3.400 VA	5.000 VA	5.000 VA	5.000 VA	7.800 VA	10.900 VA
No-load voltage (app. x factor)	1.03	1.03	1.03	1.03	1.01	1.02
Efficiency	94.0 %	94.0 %	94.0 %	94.0 %	94.0 %	94.0 %
Standards						
Classification	Control- and isolating transformer	Control- and isolating transformer	Control- and safety 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
Type of cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling	self-cooling
Safety and protection						
Type	Open type	Open type	Open type	Open type	Open type	Open type
Insulation class	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130	VDE=B, UL=class 130
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
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I _{rated} related to set)						
Setting range 230 ±15 Vac	2.50 - 4.00 A	4.00 - 6.30 A	4.00 - 6.30 A	4.00 - 6.30 A	6.30 - 10.00 A	8.00 - 10.00 A
Setting value 230 ±15 Vac	3.70 A	4.60 A	4.60 A	4.60 A	7.30 A	9.10 A
Setting range 400 ±15 Vac	1.60 - 2.50 A	2.50 - 4.00 A	2.50 - 4.00 A	2.50 - 4.00 A	4.00 - 6.30 A	4.00 - 6.30 A
Setting value 400 ±15 Vac	2.20 A	2.70 A	2.70 A	2.70 A	4.20 A	5.20 A
Order numbers						
Order Number	STEU 800/23	STEU 1000/48	STEU 1000/24	STEU 1000/23	STEU 1600/23	STEU 2000/23

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Control- and safety isolating- resp. isolating transformer

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Typ		STEU 2500/23
Electrical data	Input	
	Rated input voltage	230/400 Vac
	Tappings Input	±15 V
	Frequency range	50 - 60 Hz
	Output	
	Rated output voltage	2 x 115 Vac
	Rated power VDE (DB cos phi=1)	2.500 VA
	Rated power VDE (KB cos phi=0.5)	12.400 VA
	No-load voltage (app. x factor)	1.02
	Efficiency	94.0 %
	Standards	
	Classification	Control- and isolating transformer
	Approvals	
	Approvals	cURus
	Environment	
Ambient temperature max.	40 °C	
Type of cooling	self-cooling	
Safety and protection		
Type	Open type	
Insulation class	VDE=B, UL=class 130	
Protection index	IP 00	
Safety class (prepared)	I	
Short circuit strength	non-short-circuit proof	
PRI Fusing recommendation by circuit breaker with tripping characteristic type 20 x I _{rated} related to set)		
Setting range 230 ±15 Vac	10.00 - 16.00 A	
Setting value 230 ±15 Vac	11.20 A	
Setting range 400 ±15 Vac	6.30 - 10.00 A	
Setting value 400 ±15 Vac	6.50 A	
Order numbers		
Order Number	STEU 2500/23	

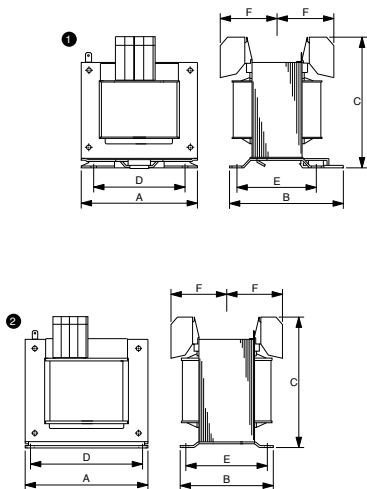


Control- and safety isolating- resp. isolating transformer
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Typ	Terminals	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	A	B	C	D	E	F
STEU 63/48	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	1.3 kg	1	84	85	88	64	64	46
STEU 63/24	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	1.3 kg	1	84	85	88	64	64	46
STEU 63/23	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	1.3 kg	1	84	85	88	64	64	46
STEU 100/48	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	2.1 kg	1	84	85	96	64	64	54.5
STEU 100/24	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	2.1 kg	1	84	85	96	64	64	54.5
STEU 100/23	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M4	2.1 kg	1	84	85	96	64	64	54.5
STEU 160/48	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	2.9 kg	1	96	102	104	84	87	56
STEU 160/24	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	2.9 kg	1	96	102	104	84	87	56
STEU 160/23	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	2.9 kg	1	96	102	104	84	87	56
STEU 250/48	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	3.6 kg	1	96	125	105	84	87	62.5
STEU 250/24	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	3.6 kg	1	96	102	104	84	87	62.5
STEU 250/23	Spring terminal, PE 6.3 x 0.8	Dual purpose base plate also for installation on mounting rails	M5	3.6 kg	1	96	125	105	84	87	62.5
STEU 320/48	Spring terminal, PE 6.3 x 0.8	Base plate	M5	4.3 kg	2	120	107	121	90	74	55
STEU 320/24	Spring terminal, PE 6.3 x 0.8	Base plate	M5	4.3 kg	2	120	107	121	90	74	55
STEU 320/23	Spring terminal, PE 6.3 x 0.8	Base plate	M5	4.3 kg	2	120	107	121	90	74	55
STEU 400/24	Spring terminal, PE 6.3 x 0.8	Base plate	M5	5.3 kg	2	120	104	121	90	86	60
STEU 400/23	Spring terminal, PE 6.3 x 0.8	Base plate	M5	5.3 kg	2	120	104	121	90	86	60
STEU 500/48	Spring terminal, PE 6.3 x 0.8	Base plate	M5	7.7 kg	2	120	124	121	90	106	71
STEU 500/24	Spring terminal, PE 6.3 x 0.8	Base plate	M5	7.7 kg	2	120	124	121	90	106	71
STEU 500/23	Spring terminal, PE 6.3 x 0.8	Base plate	M5	7.7 kg	2	120	124	121	90	106	71
STEU 630/24	Spring terminal, PE 6.3 x 0.8	Base plate	M6	7.9 kg	2	150	113	143	122	91	59

Dimension pictures





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



Typ	Terminals	Fixing method	Fixing screws	Weight	Dimension picture (in mm)	Dimension picture (in mm)					
						A	B	C	D	E	F
STEU 630/23	Spring terminal, PE 6.3 x 0.8	Base plate	M6	7.9 kg		150	117	148	122	91	59
STEU 800/48	Spring terminal, PE 6.3 x 0.8	Base plate	M6	10.3 kg		150	130	143	122	107.5	65
STEU 800/24	Spring terminal, PE 6.3 x 0.8	Base plate	M6	10.3 kg		150	130	180	122	106	-
STEU 800/23	Spring terminal, PE 6.3 x 0.8	Base plate	M6	10.3 kg		150	130	143	122	107.5	65
STEU 1000/48	Spring terminal, PE 6.3 x 0.8	Base plate	M6	13.3 kg		150	156	143	122	134	82
STEU 1000/24	Spring terminal, PE 6.3 x 0.8	Base plate	M6	13.3 kg		150	180	185	122	134	82
STEU 1000/23	Spring terminal, PE 6.3 x 0.8	Base plate	M6	13.3 kg		150	156	143	122	134	82
STEU 1600/23	Spring terminal, PE 6.3 x 0.8	Base plate	M8	21.0 kg		192	161	185	155	133	80
STEU 2000/23	Spring terminal, PE 6.3 x 0.8	Base plate	M8	25.5 kg		192	183	185	156	155	91
STEU 2500/23	Spring terminal, PE 6.3 x 0.8	Base plate	M8	27.0 kg		192	190	185	156	161	94

Dimension pictures

