General data

Technical specifications

Transformers	Type	**4BU**
• Version		3UI core
• Performance range (with IP00)	kVA	> 16 ... 400 (up to 2000 kVA on request)
• Approvals		cULus optional
Voltage range	V	≤ 1000 (up to 3.6 kV on request)
• Approvals for USA, Canada	V	≤ 600
Rated frequency	Hz	50 ... 60
Thermal class		H
• According to UL/CSA		Class 180
Ambient conditions		Protection against harmful ambient conditions: Complete impregnation in polyester resin Climate-proof for installation in rooms with an external climate to DIN 50010
Rated ambient temperature		
• At rated power	°C	40 and optionally 55
• Maximum value, after power reduction depending on load characteristics, (see "Design")	°C	80
• Minimum value	°C	– 25
Relative atmospheric humidity		
• Mean value up to	%	80
• Maximum value for 30 days/year	%	95
• At 40 °C occasionally	%	100
Safety class		I
Degree of protection		
• Without protective enclosure		IP00
• With protective enclosure (according to "Selection and Ordering Data", see Catalog LV 1)		IP20 or IP23
• Version		IP20, IP23: sheet-steel enclosure coated with epoxy resin, color gray RAL 7032
Installation height		Up to 1000 m above sea level (above this, power reduction is necessary)
Protective devices		
• Internal		Can be designed with thermistor transformer protection for warning or disconnection or warning and disconnection, see "Design"
• External		The transformers can be protected on the primary and secondary side against short-circuits and overload by means of circuit breakers. For reliable protection against short-circuits, overload and touch, the cables between the output terminals of the transformer and the load must have a negligible line impedance. For more details see DIN VDE 0100 (Erection of low-voltage systems) Part 410, Part 520 (particularly section 525) and Part 610. On request
Connection method		The permissible conductor cross-sections are assigned to the specified terminal types.
• Terminal arrangement		Refer to DIN VDE 0298-4 and EN 60204 (VDE 0113-1) for the permissible conductor cross-sections for the specified current according to the installation type.
• For terminal versions and connectable cross-sections (see "Project Planning Aids")		Other terminal sizes than standard versions on request.
Mounting position		The permissible mounting position for each version is shown in the "Project Planning Aids".

Further technical specifications can be found on the Internet at http://www.siemens.com/sidac.

Operation characteristics

- According to DIN VDE 0532-6
- t_a = 40 °C/H

Transformers Type	Rated power P_n 50 Hz ... 60 Hz 1000 m above sea level Degree of protection IP00 kVA	Core size	Voltage rise in no-load operation (operating temperature) u_A approx. %	Voltage drop on rated load[1] u_R approx. %	Short-circuit voltage[1] u_Z approx. %	Degree of efficiency η approx. %
			4BU.. .2/4BU.. .3[2]	4BU.. .2/4BU.. .3[2]	4BU.. .2/4BU.. .3[2]	4BU.. .2/4BU.. .3[2]
4BU43 3.	18	3UI 230/80	4.2/4.0	3.9/3.7	4.0/3.8	95
4BU43 4.	20	3UI 230/80	3.8/3.6	3.5/3.4	3.7/3.5	96
4BU43 5.	22.5	3UI 230/80	3.4/3.2	3.1/3.0	3.4	96
4BU45 3.	25	3UI 230/107	3.3/3.1	3.0/2.9	3.1/3.0	96
4BU45 4.	28	3UI 230/107	2.9/2.8	2.7/2.6	2.9/2.8	96
4BU47 3.	31.5	3UI 230/137	2.7/2.6	2.5/2.4	2.6/2.5	96/97
4BU47 4.	35.5	3UI 230/137	2.4/2.3	2.2	2.4/2.3	97
4BU47 5.	40	3UI 230/137	2.1/2.0	2.0/1.9	2.3/2.2	97
4BU52 3.	45	3UIS 220/120	3.4/3.2	3.1/3.0	3.9/3.8	96
4BU53 3.	50	3UIS 220/135	3.1/2.9	2.8/2.7	3.5	96/97
4BU53 4.	56	3UIS 220/135	2.7/2.6	2.5/2.4	3.6/3.5	97
4BU54 3.	63	3UIS 305/125	4.0/3.9	3.7/3.6	4.3/4.2	95/96
4BU54 4.	71	3UIS 305/125	3.6/3.4	3.3/3.2	4.2	96
4BU55 3.	80	3UIS 305/140	3.3/3.1	3.0/2.9	3.9	96
4BU56 3.	91	3UIS 305/160	3.0/2.9	2.8/2.7	3.6	96/97
4BU56 4.	100	3UIS 305/160	2.7/2.6	2.5	3.7	97
4BU58 3.	112	3UIS 395/150	4.4/4.2	4.0/3.9	4.9/4.8	95
4BU58 4.	125	3UIS 395/150	3.9/3.8	3.6/3.5	4.9/4.8	96
4BU58 5.	140	3UIS 395/150	3.5/3.4	3.2/3.1	5.1/5.0	96
4BU59 3.	160	3UIS 395/170	3.2/3.1	3.0/2.9	4.7	96
4BU60 3.	180	3UIS 395/195	3.0/2.9	2.8/2.7	4.3/4.2	97
4BU62 3.	200	3UIS 455/175	2.8/2.6	2.6/2.5	3.8/3.7	97
4BU62 4.	225	3UIS 455/175	2.4/2.3	2.3/2.2	4.0	97
4BU62 5.	250	3UIS 455/175	2.2/2.1	2.1/2.0	4.5	97
4BU63 3.	280	3UIS 455/200	2.1/2.0	1.9	4.0/4.5	97/98
4BU63 4.	315	3UIS 455/200	1.8/1.7	1.7	4.7	98
4BU64 3.	355	3UIS 455/230	1.7/1.6	1.6/1.5	4.2/4.3	98
4BU65 3.	400	3UIS 455/260	1.6/1.5	1.5/1.4	4.0/4.3	98

Higher ratings and other conditions on request.

Calculation of power loss P_V

$$P_V = \frac{P_n\,(100 - \eta)}{\eta}\ \text{[kW]}$$

[1] Winding reference temperature: 115 °C.

[2] 4BU.. .2 with CE; 4BU.. .3 with CE and cULus approval.