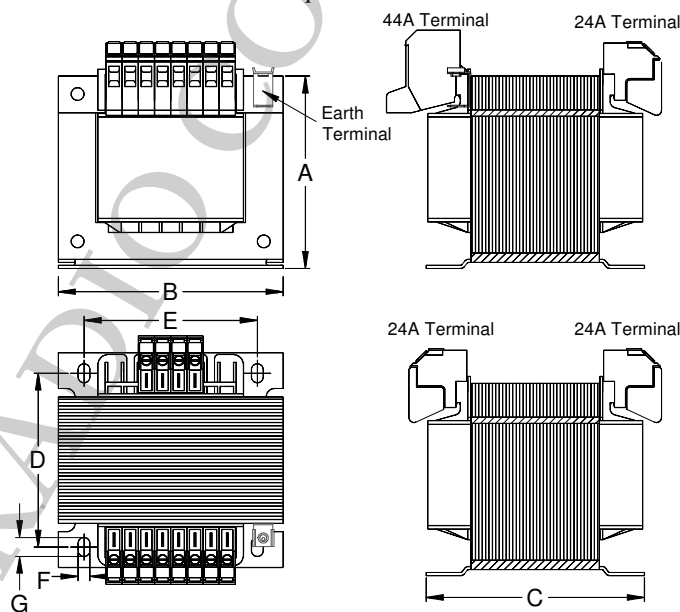


### TL490 Series

- Power – 0.04kVA ~ 2.5kVA
- Frequency – 50/60 Hz
- High short-time rating power
- Ambient temperature (ta) – 40°C ~ 50°C
- Insulation class – class F (155°C)
- Dielectric strength – 4000Vrms
- Protection against electric shock: Class I
- Degree of protection – IP00
- Unsusceptible to voltage surges or transients
- Satisfying to EN61558-2-2 “Special requirements for control transformer”
- Agency Approvals
  - UL: UL 5085-1/-2
  - C-UL: CSA C22.2 #66.1-06 / #66.2-06
- Custom-made transformers are available upon request.

#### Terminal:

- 24A:
  - screw type connection:
    - solid- 0.5 – 6 mm<sup>2</sup>
    - stranded- 0.5 – 4 mm<sup>2</sup>
  - Flat-type connection: 6.3x0.8
- 44A:
  - screw type connection:
    - solid- 0.5 – 16 mm<sup>2</sup>
    - stranded- 0.5 – 10 mm<sup>2</sup>
- All terminal block are labeling with numerical label



Product Series	Rated Power kVA	Dimension (mm)							Max. no. of terminals per side		Weight (kg)
		A	B	C	D	E	F	G	24A	44A	
TL490-400	0.04	70.0	76.0	56.0	42.0	50.0	4.8	8.0	6	4	1.1
TL490-630	0.063	77.0	84.0	78.0	64.0	64.0	4.8	8.5	7	4	1.6
TL490-101	0.1	77.0	84.0	78.0	64.0	64.0	4.8	8.5	7	4	2.1
TL490-161	0.16	87.0	96.0	101.0	86.0	84.0	5.8	10.0	8	4	2.85
TL490-251	0.25	87.0	96.0	101.0	86.0	84.0	5.8	10.0	8	4	3.7
TL490-311	0.31	96.0	105.0	103.0	85.6	80.2	5.8	12.0	8	4	4.3
TL490-401	0.4	105.0	117.0	102.0	85.0	90.0	5.8	12.0	10	6	5.1
TL490-501	0.5	105.0	117.0	121.0	104.0	90.0	5.8	12.0	10	6	6.6
TL490-631	0.63	137.0	152.0	110.0	90.0	122.0	7.0	15.0	14	8	8.0
TL490-801	0.8	137.0	152.0	126.0	106.0	122.0	7.0	15.0	14	8	10.2
TL490-102	1.0	137.0	152.0	154.0	134.0	122.0	7.0	15.0	14	8	13.4
TL490-162	1.6	149.0	171.0	150.0	126.0	145.0	7.0	15.0	16	10	19
TL490-202	2.0	149.0	171.0	170.0	146.0	145.0	7.0	15.0	16	10	23
TL490-252	2.5	165.0	190.0	188.0	164.0	160.0	9.0	16.0	16	10	27
Tolerance		typ	typ.	typ.	typ	typ	±0.5	±1.0	--	--	approx.

### Part Number Designation:

TL490 – XXX R YY – ZZS

- Where XXX = Output Power (0.04kVA ~ 2.5kVA)  
 R = Input Style (“S” = Single; “D” = Double; “M” = Multiple; “C” = Center Tapped)  
 YY = Input Voltage Range  
 ZZ = Output Voltage Range  
 S = Suffix for any alphanumeric or letter or blank for marketing purpose

Part No.	Rated Power		Short-Time Pating Power (PF=0.5)	Rated input Voltage		Output Voltage (ZZ)							
	(XXX)	kVA	kVA	(RYY)	V	(02)	(03)	(06)	(07)	(11)	(13)	(14)	(17)
						24	42	110	115	230	2 x 110	2 x 115	2 x 230
TL490-XXXYY-ZZ	(400)	0.04	----	(S01)	100V	•	•	•	•	•	•	•	•
	(630)	0.063	0.19	(S02)	110V	•	•	•	•	•	•	•	•
	(101)	0.1	0.31	(S03)	115V	•	•	•	•	•	•	•	•
	(161)	0.16	0.49	(S04)	117V	•	•	•	•	•	•	•	•
	(251)	0.25	0.85	(S05)	120V	•	•	•	•	•	•	•	•
	(311)	0.31	1.12	(S06)	200V	•	•	•	•	•	•	•	•
	(401)	0.4	1.44	(S07)	220V	•	•	•	•	•	•	•	•
	(501)	0.5	2	(S08)	230V	•	•	•	•	•	•	•	•
	(631)	0.63	2.35	(S09)	240V	•	•	•	•	•	•	•	•
	(801)	0.8	3.4	(S10)	277V	•	•	•	•	•	•	•	•
	(102)	1	5	(S11)	300V	•	•	•	•	•	•	•	•
	(162)	1.6	7.3	(S12)	380V	•	•	•	•	•	•	•	•
	(202)	2	9.7	(S13)	400V	•	•	•	•	•	•	•	•
	(252)	2.5	13.3	(S14)	415V	•	•	•	•	•	•	•	•
				(S15)	440V	•	•	•	•	•	•	•	•
			(S16)	480V	•	•	•	•	•	•	•	•	
			(S17)	500V	•	•	•	•	•	•	•	•	
			(S18)	550V	•	•	•	•	•	•	•	•	
			(S19)	600V	•	•	•	•	•	•	•	•	

- Note:
- (1) The rated power is only applicable to transformers with separate windings. (not to autotransformer).
  - (2) Short-time rating power is the most important selection criterion for control transformers. This is required for switching on electromagnetic loads, the output voltage with this load should not drop more than 5% in relation to the rated voltage in order to ensure safe switching.
  - (3) Other input voltage (600V max.) can be provided upon request.
  - (4) Other output voltage (600V max.) can be provided upon request.
  - (5) Other rated power (will not more than 20%) can be provided upon request.

Part No.	Rated Power		Short-Time Rating Power (PF=0.5) kVA	Rated input Voltage		Output Voltage (ZZ) V									
	(XXX)	kVA		(RYY)	V	(02)	(03)	(06)	(07)	(11)	(13)	(14)	(17)		
						24	42	110	115	230	2 x 110	2x 115	2 x 230		
TL490-XXXRY-YY-ZZ	(400)	0.04	----	(D01)	220-380V	•	•	•	•	•	•	•	•		
	(630)	0.063	0.19			•	•	•	•	•	•	•	•	•	
	(101)	0.1	0.31			•	•	•	•	•	•	•	•	•	
	(161)	0.16	0.49			•	•	•	•	•	•	•	•	•	
	(251)	0.25	0.85			•	•	•	•	•	•	•	•	•	
	(311)	0.31	1.12			(D02)	230-400V	•	•	•	•	•	•	•	•
	(401)	0.4	1.44			(D03)	240-415V	•	•	•	•	•	•	•	•
	(501)	0.5	2			(D04)	254-440V	•	•	•	•	•	•	•	•
	(631)	0.63	2.35			(D05)	265-460V	•	•	•	•	•	•	•	•
	(801)	0.8	3.4			(D06)	277-480V	•	•	•	•	•	•	•	•
	(102)	1	5			(D07)	400-460V	•	•	•	•	•	•	•	•
	(162)	1.6	7.3			(D08)	550-575V	•	•	•	•	•	•	•	•
	(202)	2	9.7			•	•	•	•	•	•	•	•	•	•
	(252)	2.5	13.3			•	•	•	•	•	•	•	•	•	•

- Note:
- (1) The rated power is only applicable to transformers with separate windings. (not to autotransformer).
  - (2) Short-time rating power is the most important selection criterion for control transformers. This is required for switching on electromagnetic loads, the output voltage with this load should not drop more than 5% in relation to the rated voltage in order to ensure safe switching.
  - (3) Other input voltage (600V max.) can be provided upon request.
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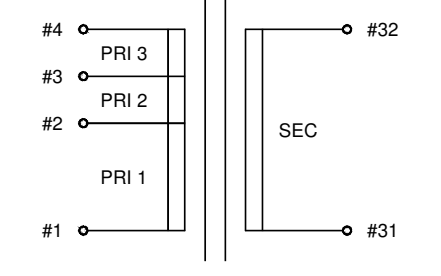
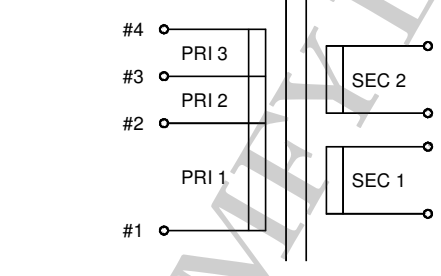
Part No.	Rated Power		Short-Time Rating Power (PF=0.5)	Rated input Voltage		Output Voltage (ZZ) V								
	(XXX)	kVA	kVA	(RYY)	V	(02)	(03)	(06)	(07)	(11)	(13)	(14)	(17)	
						24	42	110	115	230	2 x 110	2x 115	2 x 230	
TL490-XXXXRYY-ZZ	(400)	0.04	----	(M01)	550- 525- 500- 480- 460- 440- 415- 400- 380- 230- 208V	•	•	•	•	•	•	•	•	
	(630)	0.063	0.19			•	•	•	•	•	•	•	•	•
	(101)	0.1	0.31			•	•	•	•	•	•	•	•	•
	(161)	0.16	0.49			•	•	•	•	•	•	•	•	•
	(251)	0.25	0.85			•	•	•	•	•	•	•	•	•
	(311)	0.31	1.12			•	•	•	•	•	•	•	•	•
	(401)	0.4	1.44	(M02)	600-575- 550-525- 500-480- 460-440- 415-400- 240-230V	•	•	•	•	•	•	•	•	
	(501)	0.5	2			•	•	•	•	•	•	•	•	•
	(631)	0.63	2.35			•	•	•	•	•	•	•	•	•
	(801)	0.8	3.4			•	•	•	•	•	•	•	•	•
	(102)	1	5			•	•	•	•	•	•	•	•	•
	(162)	1.6	7.3					•	•	•	•	•	•	•
	(202)	2	9.7							•	•	•	•	•
	(252)	2.5	13.3							•	•	•	•	•

- Note:
- (1) The rated power is only applicable to transformers with separate windings. (not to autotransformer).
  - (2) Short-time rating power is the most important selection criterion for control transformers. This is required for switching on electromagnetic loads, the output voltage with this load should not drop more than 5% in relation to the rated voltage in order to ensure safe switching.
  - (3) Other input voltage (600V max.) can be provided upon request.
  - (4) Other output voltage (600V max.) can be provided upon request.
  - (5) Other rated power (will not more than 20%) can be provided upon request.

Part No.	Rated Power		Short-Time Rating Power (PF=0.5)	Rated input Voltage		Output Voltage (ZZ) V								
	(XXX)	kVA	kVA	(RYY)	V	(02)	(03)	(06)	(07)	(11)	(13)	(14)	(17)	
						24	42	110	115	230	2 x 110	2x 115	2 x 230	
TL490-XXXXRYY-ZZ	(400)	0.04	----	(C01)	550-525- 500-480- 460-440- 415-400- 380-230- 208V	•	•	•	•	•	•	•	•	
	(630)	0.063	0.19			•	•	•	•	•	•	•	•	•
	(101)	0.1	0.31			•	•	•	•	•	•	•	•	•
	(161)	0.16	0.49			•	•	•	•	•	•	•	•	•
	(251)	0.25	0.85			•	•	•	•	•	•	•	•	•
	(311)	0.31	1.12	(C02)	600-575- 550-525- 500-480- 460-440- 415-400- 240-230V	•	•	•	•	•	•	•	•	
	(401)	0.4	1.44			•	•	•	•	•	•	•	•	
	(501)	0.5	2			•	•	•	•	•	•	•	•	
	(631)	0.63	2.35	(C03)	480-460- 440-415- 400-380- 230-208V	•	•	•	•	•	•	•	•	
	(801)	0.8	3.4			•	•	•	•	•	•	•	•	
	(102)	1	5	(C04)	525-500- 480-460- 440-415- 400-240- 230V	•	•	•	•	•	•	•	•	
	(162)	1.6	7.3				•	•	•	•	•	•	•	
	(202)	2	9.7					•	•	•	•	•	•	
	(252)	2.5	13.3					•	•	•	•	•	•	

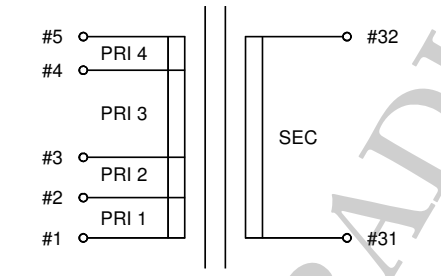
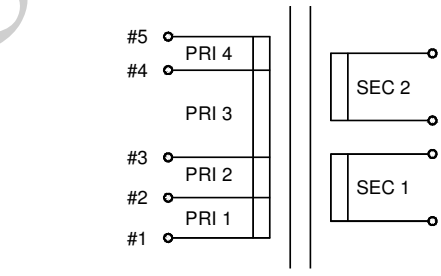
- Note:
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  - (2) Short-time rating power is the most important selection criterion for control transformers. This is required for switching on electromagnetic loads, the output voltage with this load should not drop more than 5% in relation to the rated voltage in order to ensure safe switching.
  - (3) Other input voltage (600V max.) can be provided upon request.
  - (4) Other output voltage (600V max.) can be provided upon request.
  - (5) Other rated power (will not more than 20%) can be provided upon request.

**Available Schematics for single style input (S01~S19):**

					
	Terminal	Shorted		Terminal	Shorted
Rated input Voltage	1-3	--	Rated input Voltage	1-3	--
Rated input Voltage -5%	1-2	--	Rated input Voltage -5%	1-2	--
Rated input Voltage +5%	1-4	--	Rated input Voltage +5%	1-4	--
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33
			Rated output Voltage (Parallel)	31-34	31-32, 33-34

- Note:
- (1) Input taps can be optional (for single / double style input only).
  - (2) No input tap for input (S19).
  - (3) For no input tap (without ±5%), the part number will add a suffix "N".

**Available Schematics for double style input (D01~D08):**

					
	Terminal	Shorted		Terminal	Shorted
Rated input Voltage LV	2-4	--	Rated input Voltage LV	2-4	--
Rated input Voltage LV - 'v'	3-4	--	Rated input Voltage LV - 'v'	3-4	--
Rated input Voltage LV + 'v'	1-4	--	Rated input Voltage LV + 'v'	1-4	--
Rated input Voltage HV	2-5	--	Rated input Voltage HV	2-5	--
Rated input Voltage HV - 'v'	3-5	--	Rated input Voltage HV - 'v'	3-5	--
Rated input Voltage HV + 'v'	1-5	--	Rated input Voltage HV + 'v'	1-5	--
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33
			Rated output Voltage (Parallel)	31-34	31-32, 33-34

- Note:
- (1) Input taps can be optional (for single / double style input only).
  - (2) 'v' can be "15V" / "20V" / "25V".
  - (3) For no input tap (without 'v'), the part number will add a suffix "N".
  - (4) For different 'v', the part number will add a unique suffix to represent:
    - "DA" represent 'v' is 15V
    - "DB" represent 'v' is 20V
    - "DC" represent 'v' is 25V

### Available Schematics for multiple style input (M01):

	Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 550V	1-8	4-5	Rated input Voltage: 550V	1-8	4-5
Rated input Voltage: 525V	1-8	3-5	Rated input Voltage: 525V	1-8	3-5
Rated input Voltage: 500V	1-8	2-5	Rated input Voltage: 500V	1-8	2-5
Rated input Voltage: 480V	1-8	2-5	Rated input Voltage: 480V	1-8	2-5
Rated input Voltage: 460V	1-8	4-6	Rated input Voltage: 460V	1-8	4-6
Rated input Voltage: 440V	1-8	3-6	Rated input Voltage: 440V	1-8	3-6
Rated input Voltage: 415V	1-8	3-7	Rated input Voltage: 415V	1-8	3-7
Rated input Voltage: 400V	1-8	2-6	Rated input Voltage: 400V	1-8	2-6
Rated input Voltage: 380V	1-8	2-7	Rated input Voltage: 380V	1-8	2-7
Rated input Voltage: 230V	1-8	1-6, 4-8	Rated input Voltage: 230V	1-8	1-6, 4-8
Rated input Voltage: 208V	1-8	1-7, 3-8	Rated input Voltage: 208V	1-8	1-7, 3-8
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33
			Rated output Voltage (Parallel)	31-34	31-32, 33-34

### Available Schematics for multiple style input (M02):

	Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 600V	1-8	4-5	Rated input Voltage: 600V	1-8	4-5
Rated input Voltage: 575V	1-8	4-6	Rated input Voltage: 575V	1-8	4-6
Rated input Voltage: 550V	1-8	4-7	Rated input Voltage: 550V	1-8	4-7
Rated input Voltage: 525V	1-8	3-5	Rated input Voltage: 525V	1-8	3-5
Rated input Voltage: 500V	1-8	3-6	Rated input Voltage: 500V	1-8	3-6
Rated input Voltage: 480V	1-8	3-7	Rated input Voltage: 480V	1-8	3-7
Rated input Voltage: 460V	1-8	3-7	Rated input Voltage: 460V	1-8	3-7
Rated input Voltage: 440V	1-8	2-5	Rated input Voltage: 440V	1-8	2-5
Rated input Voltage: 415V	1-8	2-6	Rated input Voltage: 415V	1-8	2-6
Rated input Voltage: 400V	1-8	2-7	Rated input Voltage: 400V	1-8	2-7
Rated input Voltage: 240V	1-8	1-7, 3-8	Rated input Voltage: 240V	1-8	1-7, 3-8
Rated input Voltage: 230V	1-8	1-7, 3-8	Rated input Voltage: 230V	1-8	1-7, 3-8
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33
			Rated output Voltage (Parallel)	31-34	31-32, 33-34

**Available Schematics for center tapped style input (C01):**

		Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 550V	1-7	--	Rated input Voltage: 550V	1-7		
Rated input Voltage: 525V	2-7	--	Rated input Voltage: 525V	2-7		
Rated input Voltage: 500V	3-7	--	Rated input Voltage: 500V	3-7		
Rated input Voltage: 480V	1-6	--	Rated input Voltage: 480V	1-6		
Rated input Voltage: 460V	2-6	--	Rated input Voltage: 460V	2-6		
Rated input Voltage: 440V	3-6	--	Rated input Voltage: 440V	3-6		
Rated input Voltage: 415V	1-5	--	Rated input Voltage: 415V	1-5		
Rated input Voltage: 400V	2-5	--	Rated input Voltage: 400V	2-5		
Rated input Voltage: 380V	3-5	--	Rated input Voltage: 380V	3-5		
Rated input Voltage: 230V	2-4	--	Rated input Voltage: 230V	2-4		
Rated input Voltage: 208V	3-4	--	Rated input Voltage: 208V	3-4		
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33	
			Rated output Voltage (Parallel)	31-34	31-32, 33-34	

**Available Schematics for center tapped style input (C02):**

		Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 600V	1-7	--	Rated input Voltage: 600V	1-7	--	
Rated input Voltage: 575V	2-7	--	Rated input Voltage: 575V	2-7	--	
Rated input Voltage: 550V	3-7	--	Rated input Voltage: 550V	3-7	--	
Rated input Voltage: 525V	1-6	--	Rated input Voltage: 525V	1-6	--	
Rated input Voltage: 500V	2-6	--	Rated input Voltage: 500V	2-6	--	
Rated input Voltage: 480V	3-6	--	Rated input Voltage: 480V	3-6	--	
Rated input Voltage: 460V	1-5	--	Rated input Voltage: 460V	1-5	--	
Rated input Voltage: 440V	2-5	--	Rated input Voltage: 440V	2-5	--	
Rated input Voltage: 415V	3-5	--	Rated input Voltage: 415V	3-5	--	
Rated input Voltage: 400V	3-5	--	Rated input Voltage: 400V	3-5	--	
Rated input Voltage: 240V	1-4	--	Rated input Voltage: 240V	1-4	--	
Rated input Voltage: 230V	2-4	--	Rated input Voltage: 230V	2-4	--	
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33	
			Rated output Voltage (Parallel)	31-34	31-32, 33-34	



**Available Schematics for center tapped style input (C03):**

		Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 480V	1-6	--	Rated input Voltage: 480V	1-6		
Rated input Voltage: 460V	2-6	--	Rated input Voltage: 460V	2-6		
Rated input Voltage: 440V	3-6	--	Rated input Voltage: 440V	3-6		
Rated input Voltage: 415V	1-5	--	Rated input Voltage: 415V	1-5		
Rated input Voltage: 400V	2-5	--	Rated input Voltage: 400V	2-5		
Rated input Voltage: 380V	3-5	--	Rated input Voltage: 380V	3-5		
Rated input Voltage: 230V	2-4	--	Rated input Voltage: 230V	2-4		
Rated input Voltage: 208V	3-4	--	Rated input Voltage: 208V	3-4		
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33	
			Rated output Voltage (Parallel)	31-34	31-32, 33-34	

**Available Schematics for center tapped style input (C04):**

		Terminal	Shorted		Terminal	Shorted
Rated input Voltage: 525V	1-6	--	Rated input Voltage: 525V	1-6	--	--
Rated input Voltage: 500V	2-6	--	Rated input Voltage: 500V	2-6	--	--
Rated input Voltage: 480V	3-6	--	Rated input Voltage: 480V	3-6	--	--
Rated input Voltage: 460V	1-5	--	Rated input Voltage: 460V	1-5	--	--
Rated input Voltage: 440V	2-5	--	Rated input Voltage: 440V	2-5	--	--
Rated input Voltage: 415V	3-5	--	Rated input Voltage: 415V	3-5	--	--
Rated input Voltage: 400V	3-5	--	Rated input Voltage: 400V	3-5	--	--
Rated input Voltage: 240V	1-4	--	Rated input Voltage: 240V	1-4	--	--
Rated input Voltage: 230V	2-4	--	Rated input Voltage: 230V	2-4	--	--
Rated output Voltage	31-32	--	Rated output Voltage (Series)	31-34	32-33	
			Rated output Voltage (Parallel)	31-34	31-32, 33-34	