

Electronic transformers for 12V halogen lamps

- Optimum lamp life
- Compact for small spaces
- Reversible switch off in case of short-circuits, overload and overtemperature
- Dimming on the primary side is possible. A corresponding dimmer has to be used (suitable dimmers see table)

Connecting the transformers to the lamps

- Ensure that the lamp load is within the output range of the transformers (see table)
- Transformers can be connected in parallel on the primary side (fig. 1a)
- Do not connect the transformers in parallel or series on the secondary side (fig. 1b)

- The maximum load of the transformer can be connected to any of the lamp-side terminal pairs (except HTL 225)

Wiring

- In accordance with the EN 60598 standard, the recommended connecting cables (see table) must be held firmly by the cable clamp to prevent it from being pushed or pulled
- Secondary side: cable length maximum 2 m, minimum 0.3 m (fig. 2 and 3)
- To prevent radio interference keep lamp cables as short as possible, keep them away from metal surfaces and keep them separated as far as possible from mains cables (fig. 2 and 3: angles $\geq 90^\circ$). Do not route cables along the transformers
- When using single leads of a cable, secondary wires have to be twisted in pairs

- For units installed in fixtures the luminaire manufacturer is responsible for RFI-compliance

Temperatures

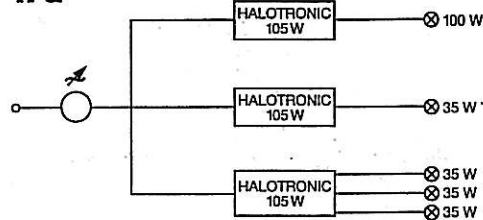
- Avoid high temperatures. Do not place the transformers close to the lamp (minimum distance 0.3 m). Maximum permissible ambient temperature must not be exceeded (see table). Make sure there is adequate space to avoid a build-up of heat. In critical installations the temperature at t_c has to be controlled

Caution

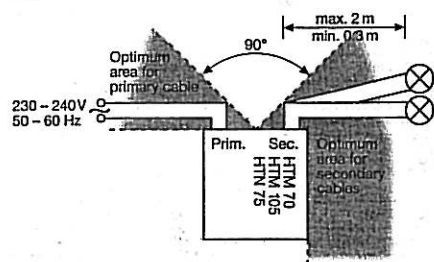
- **Transformers must be installed by a qualified electrician**
- Electronic transformers are not suitable for any other load than low voltage halogen lamps
- No switching or dimming on secondary side

correct

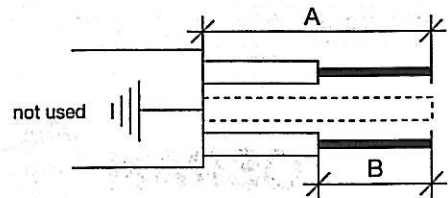
1. a



2.

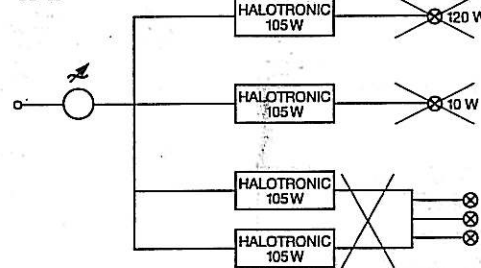


4. Wire stripping (see table)

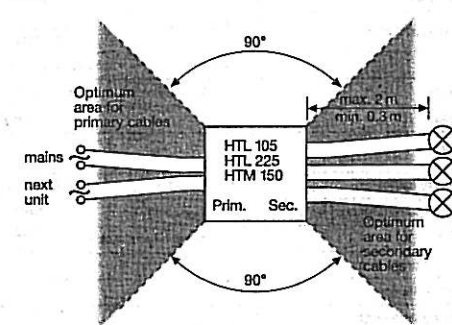


incorrect

1. b



3.



	HTM 70/230-240	HTM 105/230-240	HTM 150/230-240
Nominal line voltage:	230V - 240V		
Operating voltage:	207V - 254V		
Safe operation:	207V - 264V		
Nominal line current:	0.27 A _{eff}	0.41 A _{eff}	0.57 A _{eff}
Line frequency:	50 - 60 Hz		
Output voltage (230V):	11.2V (70W); 11.2V (20W)	11.3V (105W); 11.4V (35W)	11.4V (150W); 11.5V (50W)
Losses:	max. 4W (70W)	max. 6W (105W)	max. 7W (150W)
Load range:	20W - 70W	35W - 105W	50W - 150W
Standards:	EN 55015; EN 61000-3-2; EN 61547; EN 61047; IEC 61347		
Approvals:			
Temperature range:	0 °C to +50 °C	0 °C to +45 °C	
Max. inrush current for cold lamps:	0.3 A _{eff} (70W)	1.0 A _{eff} (105W)	1.1 A _{eff} (150W)
Dimming:	trailing or leading edge phase control for inductive load dimmers		
Short circuit protection:	automat. switch off, reversible		
Overload protection:	automat. switch off, reversible		
Overheating protection:	automat. switch off, reversible		
Suitable cable types for primary side:	NYM(3x1.5) mm ² ; H05VV-F(3x0.75 - 3x1.5) mm ² H05VV-F(2x0.75 - 2x1.5) mm ² ; H05VV-H2F(2x0.75 - 2x1.5) mm ²		connection of 2 lines of the types NYM 3x1.5; H05VV-F(3x1.5 - 3x1.0)
Suitable cable types for secondary side:	NYM(3x1.5) mm ² H05VV-F(3x0.75 - 3x1.5) mm ² H05VV-F(2x0.75 - 2x1.5) mm ² H05VVH2-F(2x0.75 - 2x1.5) mm ² cable sheath cross section (6x3.5) mm ² to (8x5) mm ² same cable type recommended as used at primary side the sheath cross section must be equal to that of primary side		connection of 3 lines of the types NYM 3x1.5; H05VV-F(2x1.5 - 2x0.75); H03VV-F(2x1.5 - 2x0.75) Halogen low voltage line 2x1.5; 2x2.5; cable sheath cross section (6x3.5) mm ² to (8x6) mm ² connection of 6 lines of the types H05VV-F2x0.75; H03VV-F2x0.75 Halogen low voltage line 2x1.5; cable sheath cross section (6x3.5) mm ² to (7x5) mm ²
Stripping lengths (fig. 4):	A	12 mm	12 mm
	B	7 mm	8 mm

	HTN 75/230-240I	HT 120/230-240/12 LF	HTL 105/230-240	HTL 225/230-240
Nominal line voltage:	230V - 240V			
Operating voltage:	207V - 254V			
Safe operation:	207V - 264V		207V - 264VAC, 176V - 275VDC	
Range of battery voltage for emergency installation:	176V - 275V			
Nominal line current:	0.32 A _{eff}	0.48 A _{eff}	0.44 A _{eff}	0.90 A _{eff}
Line frequency:	50 - 60 Hz		0; 50 - 60 Hz	
Output voltage (230V):	11.5V (75W); 11.7V (20W)	11.5V (120W); 11.5V (35W)	11.6V (105W); 11.3V (35W)	11.6V (225W); 11.7V (50W)
Losses:	max. 4W (75W)	max. 6W (120W)	max. 6W (105W)	max. 9W (225W)
Load range:	20W - 75W	35W - 120W	35W - 105W	50W - 225W
Standards:	EN 55015; EN 61000-3-2; EN 61547; EN 61047; IEC 61347			
Approvals:				
Temperature range:	0 °C to +50 °C	-20 °C to +45 °C	-20 °C to +50 °C	
Max. inrush current for cold lamps:	0.37 A _{eff} (75W)	2 A _{eff} (120W)	0.6 A _{eff} (105W)	1.5 A _{eff} (225W)
Dimming:	trailing edge phase control		trailing or leading edge phase control	
Short circuit protection:	automat. switch off, reversible			
Overload protection:	automat. switch off, reversible			
Overheating protection:	automat. switch off, reversible			
Suitable cable types for primary side:	NYM(3x1.5) mm ² H05VV-F(2x0.75) mm ² H03VV-F(2x0.75) mm ² H03VVH2-F(2x0.75) mm ²		H03VV-F2x0.50mm ² ; H03VV-F2x0.75mm ² ; H05VVH2-F2x0.75mm ² ; H03VVH2-F2x0.75mm ² ; NYM-O 2x1.5mm ² ; NYM-J 3x1.5mm ² ; H05VV-F2x2.5mm ²	
Suitable cable types for secondary side:	H03VV-F2x0.75mm ² ; H05VVH2-F2x0.75mm ² ; NYM-O 2x1.5mm ² ; H05VV-F2x1.5mm ² ; H05VV-F2x2.5mm ² ; NYM-J 3x1.5mm ² ; NYM-J 3x2.5mm ²			
Stripping lengths (fig. 4):	A	10 mm	15 mm	14 mm
	B	6 mm	7 mm	8 mm

