Electronic Timer / Star-Delta-Timer DZT

Operating Instructions

English translation

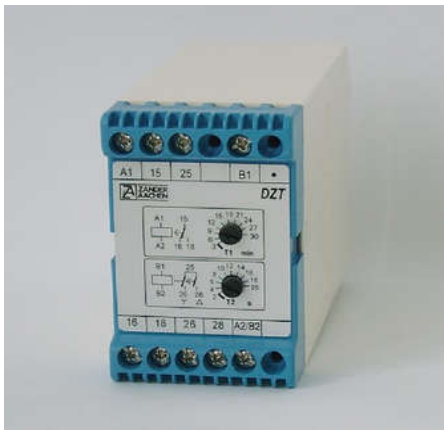
Errors and technical changes reserved

Correct Use

DZT combines two from each other independently working timer in one housing: one On-Delay-Timer, one Star-Delta-Timer. The DZT controls time depending machine and plant operations, e.g. for compressors. The integrated Star-Delta-Timer is used to activate a Star-Delta protective combination as a start-up controller for three-phase motors.

Features

- *in one housing*
- *On-Delay-Timer 0,2-30 min*
- *Additional Star-Delta-Timer´*
- *Adjustable start-up time for star operation*
- *Defined dwell time between star operation and delta-mode*
- *Compact housing*
- *High switching capacity*



Function

DZT combines two from each other independently working timer in one housing:

1. **On-Delay-Timer**
2. **Star-Delta-Timer.**

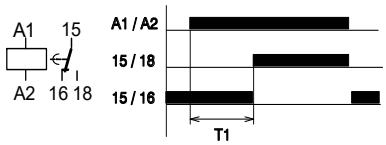
Both functions can be operated completely independently. The control of the On-Delay-Timer is activated by the connections A1 and A2, the Star-Delta Timer is activated by B1 and B2. The comon N-line is attached at the combined connection A2/B2.

The compact design characterize this device. The fitting is for DIN rail 35mm according to DIN EN 50022.

1. On-Delay-Timer (A1-A2)

The time laps beginns with applying the operating voltage to A1-A2. After the adjusted time delay **T1** elapsed, the relay switches and opens the contacts 15-16 (switching from 15-16 to 15-18).

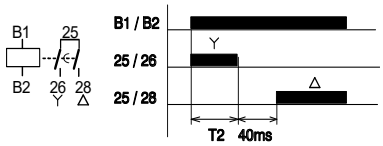
This operating condition remains as long as the operating voltage is applied to A1 and A2. With the removal of the operating voltage the contacts switches back to 15-16.



On-Delay-Timer (T1: 0.2-30 min)

2. Star-Delta-Timer (B1-B2)

After applying the operating voltage to B1-B2 the contact 25-26 (star mode) switches on firstly for the duration of the adjusted time **T2**. Afterwards the contacts 25-26 and 25-28 are open for **40ms** (dwell time). After this dwell time the contact 25-28 (delta-mode) switches on. This condition remains as long as the operating voltage is applied to B1-B2. With the removal of the operating voltage the contacts 25-26 and 25-28 switches off.



Star-Delta-Timer (T2: 0.3-20 s)

Safety Precautions



- Installation and operation must be carried out by qualified personnel only.
- The electrical installation must be performed after disconnecting the device and the machine from the mains supply.
- The wiring must be carried out according to the instructions of this operating manual, or the safety function may be lost.
- Opening the device, any manipulation of the device and the avoidance of the safety facilities are not permitted.
- All relevant safety regulations and standards must be attended to.
- Non-observance of the safety regulations may cause death, severe injuries or substantial damage to property.

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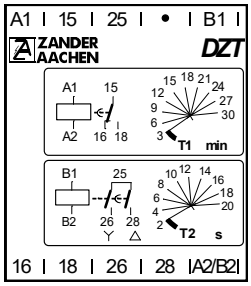
Installation

As per EN 60204-1, the device is intended for installation in control cabinets with a minimum degree of protection of IP54. It is mounted on a 35 mm DIN rail according to DIN EN 60715 TH35.

Electrical Connection

- A1-A2 are the operating voltage contacts to control the On-Delay timer.
- B1-B2 are the operating voltage contacts to control the Star-Delta Timer.
- The combined N-Conductor for A1/B1 will be connected to the combined terminals A2 and B2.
- External contact fuses (6A slow blow or 8A fast blow) must be provided.
- Cunductor cross section must not exceed 2,5mm^2.
- If the DZT has no function after commissioning, it must be returned unopened to the manufactorer. Open the DZT invalidate the warranty.



Connections

A1: Power Supply timer 230 V
B1: Power Supply Star-Delta-Timer 230 V
A2 /B2: Common N-line for A1,B1
15-16-18: Contact Timer
25-26-28: Contact Star-Delta-Timer

Maintenance

Once per month, the device must be checked for proper function and for signs of tampering

The device is otherwise maintenance free, provided that it was installed properly.

Techn. Data

Operating voltage	AC 230 V, 50-60 Hz
Residual ripple	+ 10 / - 15%
Timer A1-A2/B2:	
Time range T1	0.2-30 min
Power consumption	0.35 VA
Star-Delta-Timer B1-A2/B2:	
Time range T2:	0.3-20 s
Dwell time	approx. 40 ms (min. 30 ms/ max. 50 ms)
Power consumption	0.35 VA
Repeat accuracy	+/- 0,5%
Reclose readiness	< 50 ms when switched on
Switching capacity	AC 250 V: max. 6 A, max. 1500 VA
	DC 24 V: 2 A
Contact life	mechanical 2 x 10^7 operations
Temperature dependence	0,1% /°C
External contact fuses	6 A slow blow oder 8 A fast blow
Max. line cross section	2.5 mm^2
Test voltage	2.5kV (Control Voltage / contact)
Dielectric strength	4 kV (DIN VDE 0110-1)
Rating insulation voltage	250 V
Temperature range	-20^0 - + 60^{0}C (dew-free)
Mounting	DIN-rail mounting DIN EN 50022-35
Protection	Mounting IP40, Terminals IP20
Weight	approx. 230 g
Installation position	any

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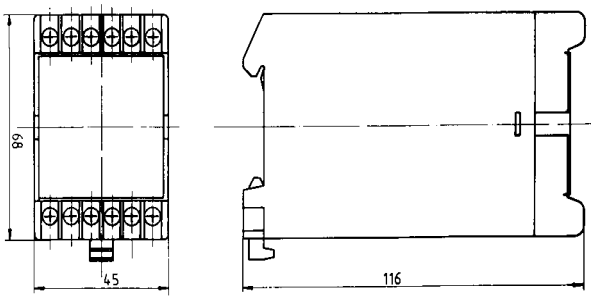
Dimension Drawing



CE

Order No

Order No. 410909	DZT AC230V

CE **Konformitätserklärung**
EC Declaration of Conformity

Hersteller: H. ZANDER GmbH & Co. KG
Producer: Am Gut Wolf 15 • 52070 Aachen • Deutschland

Produktgruppe: Stern-Dreieck-Zeitrelais
Product Group: Star Delta Timer

Produkt Name
Product Name

DZT

Die Produkte stimmen mit den Vorschriften folgender Europäischer Richtlinien überein:
The products conform with the essential protection requirements of the following European directives:

2014/35/EU : Niederspannungsrichtlinie
2014/35/EU : Low-voltage directive

2011/65/EU : RoHS Richtlinie
2011/65/EU : RoHS directive

2014/30/EU : EMV Richtlinie
2014/30/EU : EMC directive

Die Übereinstimmung der bezeichneten Produkte mit den Vorschriften der o.a. Richtlinie wird, falls anwendbar, nachgewiesen durch die vollständige Einhaltung folgender Normen:
If applicable, the conformity of the designated products is proved by full compliance with the following standards:

EN 61439-1:2011
EN 60947-5-1:2017
EN 61812-1:2011
EN 60664-1:2007
EN 61000-6-2:2005
IEC 63000:2018
EN 60947-1:2007 + A1:2011 + A2:2014
EN 61000-6-3:2007 + A1:2011

Dokumentationsbeauftragte/-r: Christiane Nittschalk
Documentation manager

Aachen, den 14.05.2019

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Geschäftsleitung
General Manager

Dipl.-Ing. Alfons Austerhoff
Leiter CE-Konformitätsbewertung
Manager for EC declaration of conformity

F7.3-07/03

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