BARTEC

TWISTO

Betriebs- und Installationsanleitung
für System TWISTO
mit TRICER-S, TRICER-S-ÖI, TRICER-S-H, ICEFREE-S Typ 27-56K.-..../....

Operation and Installation Instructions
for System TWISTO
with TRICER-S, TRICER-S-ÖI, TRICER-S-H, ICEFREE-S Type 27-56K.-..../....

Instruction d'installation et de service
pour système de TWISTO
avec TRICER-S, TRICER-S-ÖI, TRICER-S-H, ICEFREE-S Type 27-56K.-..../....

Инструкция по монтажу и эксплуатации
для системы TWISTO
с TRICER-S, TRICER-S-ÖL, TRICER-S-H, ICEFREE-S тип 27-56K.-..../....

Kennzeichnung

Besonders wichtige Punkte in dieser Bedienungsanleitung sind durch ein Symbol gekennzeichnet:

ACHTUNG

Wichtige Hinweise und Informationen zur Vermeidung eines nachteiligen Verhaltens.

VORSICHT

Warnung vor Sachbeschädigung sowie vor finanziellen und strafrechtlichen Nachteilen (z. B. Verlust der Gewährleistungs-verpfichtung, Haftpflichtfälle usw.).

HINWEIS

Wichtige Hinweise und Informationen zum wirkungsvollen, wirtschaftlichen & umweltgerechten Umgang.

Marquage

Les points particulièrement importants de la présente notice d'instructions sont signalés par un pictogramme :

ATTENTION

Consignes et informations importantes pour prévenir un comportement préjudiciable.

AVERTISSEMENT

Mise en garde contre des dommages matériels et des conséquences financières et pénales (par exemple perte des droits de garantie, responsabilité, etc.).

AVIS

Remarques et informations importantes pour un usage efficace, économique et respectueux de l'environnement.

Marking

Particularly important points in these operating instructions are marked by a symbol:

CAUTION

Important instructions and information on preventing disadvantageous behaviour.

WARNING

Warning of damage to property and financial and penal disadvantages (e.g. loss of guarantee rights, liability etc.).

NOTICE

Important instructions and information on effective, economical & environmentally compatible handling.

Обозначения

Особенно важные пункты в данном руководстве обозначены символами:

ВНИМАНИЕ

Важные указания и информация во избежание неблагоприятного поведения.

ОСТОРОЖНО

Предупреждение о возможном повреждении имущества, финансовых потерях и уголовно-наказуемых последствиях (например, потеря гарантийных обязательств, ответственность за причинение ущерба и т.д.).

УВЕДОМЛЕНИЕ

Важные указания и информация для эффективного, экономичного и экологически безопасного использования.

21-56KO-7N0001/J-01/2019-BEH-129083

EU Konformitätserklärung
EU Declaration of Conformity
Déclaration UE de conformité

№ 21-56K0-7C0001_A

BARTEC
BARTEC GmbH
Max-Eyth-Straße 16
97980 Bad Mergentheim
Germany

Wir	We	Nous
BARTEC GmbH,		
erklären in alleiniger Verantwortung, dass das Produkt	declare under our sole responsibility that the product	attestons sous notre seule responsabilité que le produit
TWISTO-B TWISTO	**TWISTO-B TWISTO**	**TWISTO-B TWISTO**

TWISTO-B 27-56K*-DC/0***
TWISTO-B / TWISTO 27-56K*-DC/1***
TWISTO-B 27-56L*-DC/C***
TWISTO-B 27-56L*-DC/E***
TWISTO-B / TWISTO 27-56L*-DC/F***

auf das sich diese Erklärung bezieht den Anforderungen der folgenden **Richtlinien (RL)** entspricht	to which this declaration relates is in accordance with the provision of the following **directives (D)**	se référant à cette attestation correspond aux dispositions des **directives (D)** suivantes
NS-Richtlinie 2014/35/EU	**LV -Directive 2014/35/EU**	**Directive BT 2014/35/UE**
RoHS-Richtlinie 2011/65/EU	**RoHS-Directive 2011/65/EU**	**Directive RoHS 2011/65/UE**
und mit folgenden Normen oder normativen Dokumenten übereinstimmt	and is in conformity with the following standards or other normative documents	et est conforme aux normes ou documents normatifs ci-dessous

EN 60998-1:2004
EN 60998-2-3:2004
EN 60670-1:2005 +A1 :2013

EN 50581 :2012

Verfahren der internen Fertigungskontrolle	**Procedure of internal control of production**	**Procédure de contrôle interne de fabrication**

VDE Nr. 40036171
<VDE>

CE

Bad Mergentheim, den 09.01.2018

i.V. Michael Wittmann
Dep. Head of EHT

i.V. Gitta Kugler
Director Global Test, Certification & IP Management

03-0383-0366

21-56K0-7N0001/J-01/2019-BEH-129083

TWISTO Set

Certification

VDE 40036171

Technical data

max. AC 250 V, max. 16 A

Ambient temperature range

-25 °C to +60 °C (+85 °C on request)

The TWISTO must be thermally decoupled if the workpiece temperature is higher.

Table 1

Individual parts **TWISTO-**		**A***	**E***	**S***	**C***	**T***	**TE2***	**TE3***	**X***
1		1		1		2	1	1	2
2						1	1	2	2
3		1		1	2	3	2	3	4
4		1		1	2	3	2	3	4
5					1				
6			1	1		1	2	3	2

-A* = Connection (with a 2 m fixed connection cable);
-E* = End termination;
-S* = Set consisting of connection and remote end termination;
-C* = Splicing;
-T* = T branch (joined together by means of factory-assembled 2 x 0.3 m flexible sheathed lead);
-TE2* = T branch (joined together by means of a factory-assembled 2 m non-detachable connection cable and 1 x 0.3 m flexible sheathed lead);
-TE3* = T branch (joined together by means of a factory-assembled 2 m non-detachable connection cable and 2 x 0.3 m flexible sheathed lead);
-X* = X branch (joined together by means of a factory-assembled 3 x 0.3 m flexible sheathed lead);

TWISTO system with parallel heating tapes

Technical data

max. AC 230 V, max. 16 A, Protection class IP 66

Ambient temperature range

System

-25 °C to +60 °C (+85 °C on request)

Heating tape

-25 °C to +65 °C (+85 °C switched off)
for TRICER-S-10/-S-ÖL-10,TRICER-S-26/-S-ÖL-26 and ICEFREE-S

-25 °C to +80 °C (+85 °C switched off)
for TRICER-S-H

Product description

This heating system consists of a TRICER-S, TRICER-S-ÖL, ICEFREE-S parallel heating tape from Table 2, assembled with a TWISTO connection and remote-end termination or splicing system set from Table 1. It is set up as a stationary resistance heating system for pipelines or tanks. The heating tape, and the TWISTO set and the factory-connected flexible sheathed lead must be fastened in conformance with the “Assembly Steps” point (see also the picture of “Example: Installation of a TWISTO on a pipe”)

⚠ WARNING

Protection class II

There is a risk of fire if there are resistive faults in Protection class II.

When such tapes are used, care must be taken that they are used only in environments with a low risk of fire or that the appropriate protection measures are taken (e. g. monitored operation).

Only pipes, tanks, insulating materials and (pipe) cladding in building material class A1 or A2: “non combustible” in conformance with EN 13501-1 (DIN EN 13501-1, formerly DIN 4102-1) and building material class B or C: “flame retardant” in conformance with EN 13501-1 (DIN EN 13501-1, formerly B1 in conformance with DIN 4102-1) are permissible.

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Parallel heating tapes

Maximum heating circuit length with overcurrent protection (Type-C tripping characteristics)

Table 2

Type	10 A	16 A
TRICER-S-10/ÖI-10	116 m	190 m
TRICER-S-26/ÖI-26	60 m	85 m
TRICER-S-H	40 m	80 m
ICEFREE-S	60 m	80 m

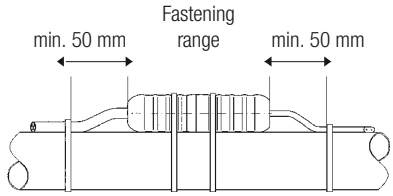
Instructions for installation, operation and maintenance

- Install the set and heating tape carefully.
- Use the heating tapes in accordance with the intended purpose and adhere to the operational data specified by BARTEC.
- Replace the heating tape sealing in a set if it is deformed.
- Observe the respective applicable national assembly regulations.
- Conductive parts from other suppliers must be incorporated into the (protective conductor) safety measures to provide protection against indirect contact.
- The workpiece temperature must not exceed the levels of +65 °C when the heating tape is switched on and +85 °C when the heating tape is switched off (for TRICER-S-10/26, TRICER-S-ÖL -10/26 and ICEFREE-S) or +80 °C when the heating tape is switched on and +85 °C when the heating tape is switched off (for TRICER-S-H) for the duration of a cumulative 1000 h.
- Ensure the power has been disconnected before connecting to the power supply.
- Do not operate the heating cable without end termination.
- Changing/removing the thermal insulation or altering the temperature values of the medium (and carrier) to be heated can lead to the carrier material (e.g. pipe) overheating/freezing.
- Note the supply voltage.
- Protect against direct contact with moisture and sunlight.
- The seal must be replaced after opening the connection.
- The heating circuit must be switched off before opening the connection.
- The heating circuit must have at least 50 mm of spare cable before opening the connection.
- The remaining individual parts should be recycled following dismantling; recyclable material sign.
- Observe the level of the supply voltage!
- It is recommendable to use a residual current circuit breaker (rating 30 mA).
- Each heating circuit must be marked durably with information on manufacturer, type, power and voltage.
- When used for roof gutter heating, the TWISTO must be provided with protection and installed outside the gutter.

Assembly steps

- Unroll the heating tape from a reel in a straight line and cut to the correct length (observe the max. heating circuit lengths in the installation instructions, table 2).
- The two ends of the heating tape must be provided with connection and remote-end terminations as explained in the installation instructions.
- Do not connect the heating tape´s two supply conductors together - short circuit!
- The project engineering specifications must be adhered to when installing the heating tape on the pipe (or tank).
- The bending radius must be at least 25 mm; do not bend in an up right position.
- The heating tape and the TWISTO are attached to the pipe by means of a temperature-resistant adhesive tape or cable ties at a max. spacing of 200 mm.
- Use only plasticiser-free adhesive tapes or cable ties (no PVC tapes)!
- To ensure efficient heat transmission, the heating tape must be in contact over the entire length of the surface. It may be necessary to reduce the distances between fastenings.
- On plastic pipes which conduct heat less efficiently than metal pipes do, aluminium foil or aluminium adhesive tape should be put under or over the heating tape.

Example: TWISTO installation on a pipe



Example: TWISTO installation on roof gutter

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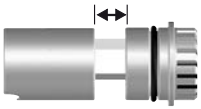
Attention: Please read also the informations on the back!

Heating tape connection

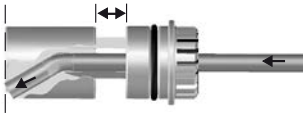
Cut heating tape with a straight cut and push on threaded cap **3**.

1

Pull the insulation displacement connector sleeve apart and fix in this position.



Insert the heating tape into the pulled-apart insulation displacement connector sleeve **4** and push it through until the heating tape end is flush with the end of the sleeve.



2

Mounting accessories

		Pipes/Vessels	Roof & Gutter	
234006	Insulation bushing for PSB, PSBL, power supply cable	x		05-0020-0472
100706	Polyester adhesive tape, 19 mm wide, 50 m long, resistant to 100°C	x		02-5500-0005
100506	Aluminum adhesive tape, 50 mm wide, 50 m long, resistant to 80°C	x		02-5500-0003
113450	Label „Elektrisch beheizt“	x	x	05-2144-0046
113550	Label „Electrically heated“	x	x	05-2144-0047
120300	Label „Tracage electrique“	x	x	05-2144-0703
207439	Label „Electrically heated“ Russian	x	x	05-2144-0860
107103	Power cable Ölflex Classic 100, 3x1,5mm^2; D = 6,8 mm	x	x	02-4034-0001
413510	Junction box AG-3 G for PSBL or TWISTO-B; for 1-3 heating circuits / IP 66	x	x	05-0079-0049
413511	Junction box AG-3 B, weatherproof, for PSBL or TWISTO-B; for 1-3 heating circuits / IP 66/67/69	x	x	05-0079-0050
126225	Nylon cable ties, length 200 mm, halogenfree, not UV resistant; 1000 pieces p.u.	x		03-6500-0015
128699	KBI-1 cable ties PA6.6, length 360 mm, UV resistant; 100 pieces p.u.		x	61400012
127213	KBI cable ties PA6.6, length 200 mm, UV resistant; 20 pieces p.u.		x	61400011
102537	ASH edge protector hit		x	61400000
100131	KAS flange protection-Set (5x ASH, 10x KBI)		x	61400013
200514	AH spacer for TWISTO (1x spacer, 6x KBI-1)	x		61400005

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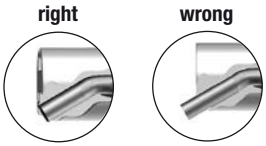
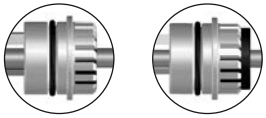
Do not pull out the sealing!

WARNING

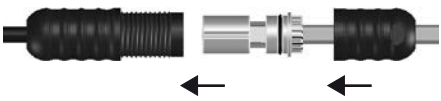


WARNING



2

Insert the insulation displacement connector sleeve **4** into the corresponding enclosure **1**, **2** or **5** (depending on the set being used).



Take care that the lug and the groove on the anti-rotation key are aligned.

3

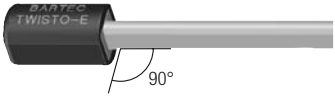
WARNING

Twist the threaded cap **3** and enclosure **1, 2** or **5** together until the stop point is reached (perhaps using an open-ended AF 30 wrench).

4

Heating tape termination

Cut off heating tape with a straight cut and insert as far as it will go into the end termination **6**.



5

Tool

6

Accessories

TWISTO sealing	**05-1308-0201**

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Attention: Please read also the informations on the back!

Customer

Project

Type of inspection

- ☐ Electrical trace heating Acceptance test
- ☐ Commissioning
- ☐ Maintenance and Re-commissioning

Application

- ☐ Anti-freeze and Temperature Maintenance on the pipe
- ☐ Gutter/Roof surface trace heating
- ☐ Oil pipe/Oil tank heating (interior)

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1. Visual inspection carried out (according to the BARTEC installation instructions)

	Date:	Signature:
☐ Heating tape		
☐ Connection systems		
☐ Control systems		

2. Function check carried out (according to the BARTEC installation instructions)

Date:	Signature:

Connect the heating tape to the power supply (a temporary connection to the construction site power supply is also possible). The earth leakage breaker and fuse must not trip. Each heating tape end has to be lukewarm after 5 to 10 minutes (put hand on tape)

General Information										
Heating circuit no.	1	2	3	4	5	6	7	8	9	10
Heating circuit length (m)										
Function check carried out										
Visual inspection carried out										

Note **A proper visual and functional inspection is possible only if carried out prior to the installation of the heat insulation. All warranty claims are subject to the submission of a correctly and completely filled-in acceptance report. Make sure to add date and signature.**

Above requirements checked:	Company/signature test engineer	Company/signature customer
Date/Place:		

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Attention: Please read also the informations on the back!