



Application

Firing systems for steam boilers which are operated as per TRD 604, Sheet 1 or 2 may only be started up in the presence of a boilerman as per Article 4.4. This is normally achieved by a "holding circuit" after the boilerman has pressed the Start pushbutton. A further requirement is that switch-offs of the safety chain provided as protection against overheating and lack of water must cause a fault lock which can only be unlocked by pressing the Start pushbutton.

These power holding circuits have the disadvantage that even short power failures (< 30 s) cause unnecessary fault switch-offs. More than 90% of all power failures are short power interruptions.

Mode of operation

The equipment operates using a so-called holding circuit which must be unlocked manually. It also causes the requested fast switch-off (< 1 s) when the safety chain and the fault lock are interrupted.

A capacitor relay with switch-off delay is integrated in the NAE and bridges bypasses of a period of max. 30 s. It detects by means of an additional power voltage relay whether the event is a power voltage interruption or an interruption of the safety chain.

If the holding circuit is switched off by a power voltage interruption of less than 30 s, it is restarted after the power voltage is restored and an unnecessary fault switch-off is avoided.

Safety systems

The complete layout is designed in such a way that failures are detected automatically and prevent start-up. A fuse which is not accessible from the exterior is installed as protection against relay contacts welding. It can only be exchanged after a safety check at the manufacturer.

A blocking or bypassing of the Start pushbutton does not impair the safety function of the equipment.

Installation and mounting

Any installation position of the NAE equipment is possible.

Before mounting, remove the top part and attach the plug-in base using two screws.

For the connection, 7 rubber cable glands and 5 breakable PG* 9 openings are provided on the plug-in base (* = heavy-gauged conduit thread).

Electrical connection

Perform wiring as per the locally prevailing regulations and the wiring diagram. The wiring diagram is affixed to the underside of the top part.

The maximum back-up fuse may be 6 A slow-blow or 10 A quick-acting.

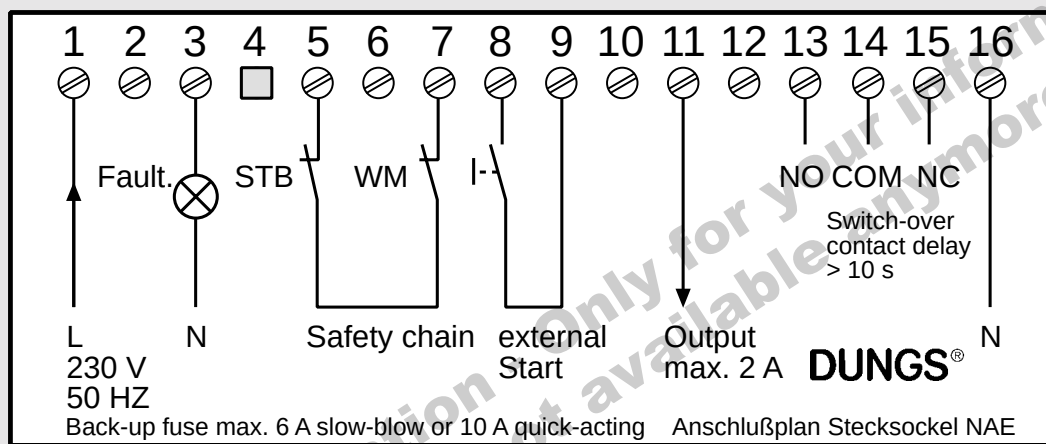
Terminal wiring diagram

Function of terminals 13 - 14 - 15

These terminals lead to a relay with switch-on delay which switches over approx. 10 s after the power voltage is applied.

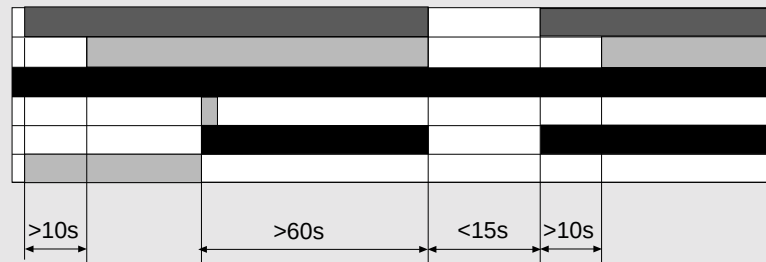
This function is for unlocking a group alarm after a power interruption.

Terminal wiring diagram



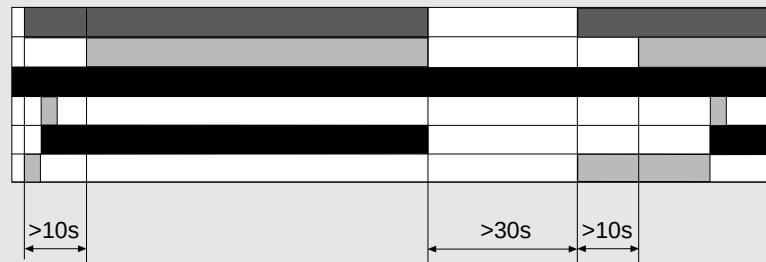
Function and program sequence

Normal start followed b voltage failure <15s



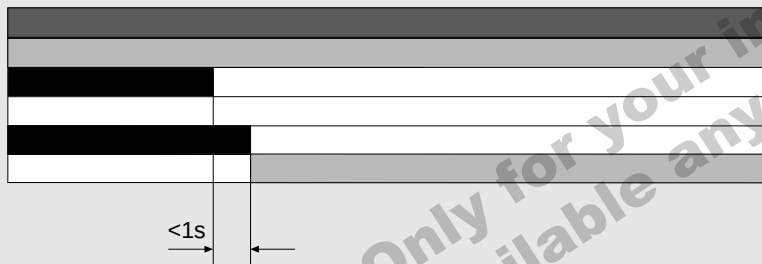
Supply voltage (T 1, 16)
Wiping contact (T 13, 14, 15)
Safety chain (T 5, 7)
Start (T 8, 9)
Output (T 11)
Fault (T 3)

Normal start followed by voltage failure >30s



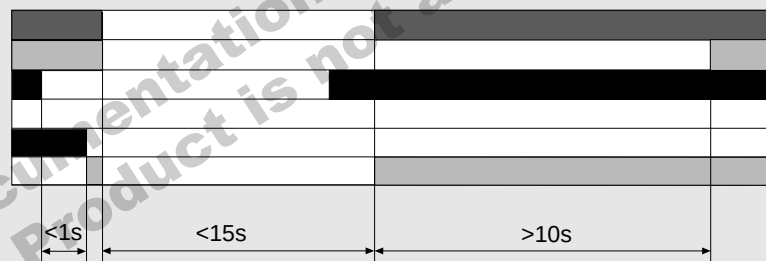
Supply voltage (T 1, 16)
Wiping contact (Kl. 13, 14, 15)
Safety chain (T 5, 7)
Start (T 8, 9)
Output (T 11)
Fault (T 3)

Interruption of safety chain without voltage failure



Supply voltage (T 1, 16)
Wiping contact (T 13, 14, 15)
Safety chain (T 5, 7)
Start (T 8, 9)
Output (T 11)
Fault (T 3)

Interruption of safety chain shortly before voltage failure



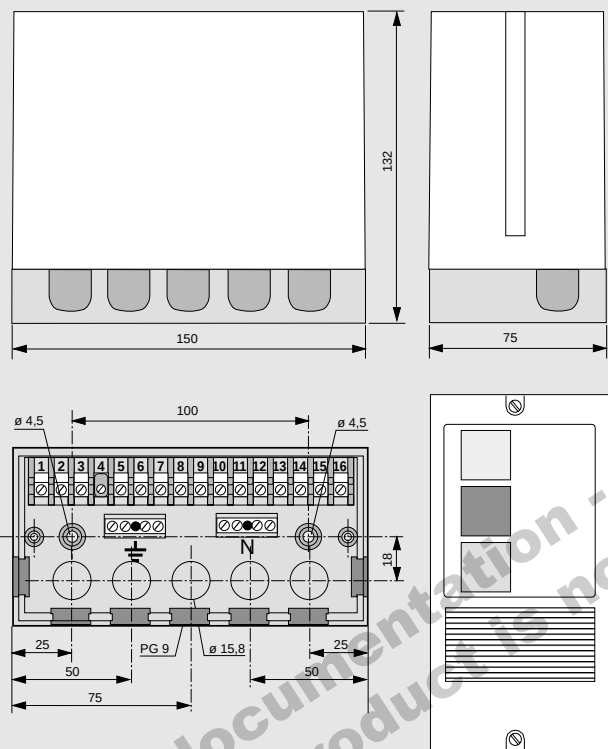
Supply voltage (T 1, 16)
Wiping contact (T 13, 14, 15)
Safety chain (T 5, 7)
Start (T 8, 9)
Output (T 11)
Fault (T 3)

Interruption of safety chain shortly after voltage failure



Supply voltage (T 1, 16)
Wiping contact (T 13, 14, 15)
Safety chain (T 5, 7)
Start (T 8, 9)
Output (T 11)
Fault (T 3)

Dimensions [mm]



Specifications

Nominal voltage	230 VAC + 10/-15%
Frequency	50/60 Hz
Power consumption	approx. 5 A
Switching capacity	2 A
Back-up fuse	max. 6 A slow-blow or 10 A quickacting
Fault unlock facility with external pushbutton	250 V DC, 1 A
Degree of protection	IP 40
Ambient temperature	-15° to +60°C
Weight	approx. 0.5 kg

Order data	Type	Order-No.
Power failure detector	NAE	224 931

We reserve the right to make any changes in the interest of technical progress



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