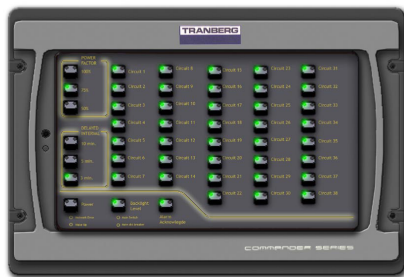


# ICE CLASS ANTI FREEZE, DE-ICE, MONITORING & CONTROL

Subject to change without prior notice TPS2435 REV. A 10.07.2017



Tranberg TEF 1071 is a new, flexible control and monitoring system for heating cables on vessels, or onshore facilities.

The system consists of an operator panel that is flush-mounted in the control panel door, providing control of each circuit and displays current status of all circuits. In addition the control panel will indicate common faults. Upon faults, an acoustic alarm, a common alarm relay activation, as well as flashing led's will attract the attention of the personnel.

The system may be delivered with individual buttons to control each circuit, or as an indicator panel without buttons. In order to minimize in-rush current, the system automatically turns on the circuits in a sequence with a user selectable delay interval. The same principle is activated as the system is turned off, which is a more gentle load handling for e.g. vessel generators.

A unique feature of this system is the Power Factor setting, where one may select either 50%, 75% or 100% of the outputs to be turned on at any time. This feature will every few minutes turn off some outputs and turn on others to reduce the overall power consumption. This may also be selected by external signalling, or fully overridden.

### APPLICATION

- De-ice control system
- Anti-freeze control system

### FEATURES AND BENEFITS

- May use regular contactors for circuit control; or solid state relays (SSR) if the Power Function is to be used
- All information and control in a single compact control panel: From 14 to 46 circuits
- Fault monitoring for each circuit, plus common alarm handling
- User selectable delay as each circuit is turned on, automatic delay as these are turned off
- Power Factor selector: User may select 50%, 75% or 100% of the circuits to be turned on at any given time.
- Wake-Up signal input: Connect a simple temperature switch that will activate upon low temperatures, and this will wake up a system which is turned off
- External signalling for turning on or off the system, override of Power Factor or delayed intervals.
- May be used with or without buttons for individual circuit control.
- Several operator panels may be connected to the system, and each will work in parallel.
- An optional gateway may be installed to provide communication to an external control system, e.g. a process control system.

### APPROVAL

- Full compliance with DNV "Ships for navigation in ice" (January 2008)

## TECHNICAL DATA

### Control function:

<b>Number of outputs:</b>	14 - 46
<b>Type of outputs:</b>	24VDC digital driving solid state relays or contactors
<b>Number of inputs:</b>	14 - 46
<b>Type of input:</b>	24 VDC
<b>Common inputs:</b>	3

### Distribution board rating:

<b>Voltage:</b>	230/400V +6% -10%
<b>Frequency:</b>	50Hz +/- 5%
<b>Nominal current rating:</b>	Dependent on system configuration
<b>Short-time withstand current:</b>	Dependent on system configuration
<b>Assymmetric peak withstand current:</b>	Dependent on system configuration
<b>RMS symmetric breaking current:</b>	Dependent on system configuration

### Incoming isolator/circuit breaker:

<b>Rated voltage:</b>	690V
<b>Rated current:</b>	250V
<b>Short-circuit making current:</b>	176 kA
<b>Short-circuit breaking current:</b>	25 kA
<b>Short time withstand current:</b>	8 kA for 1 second

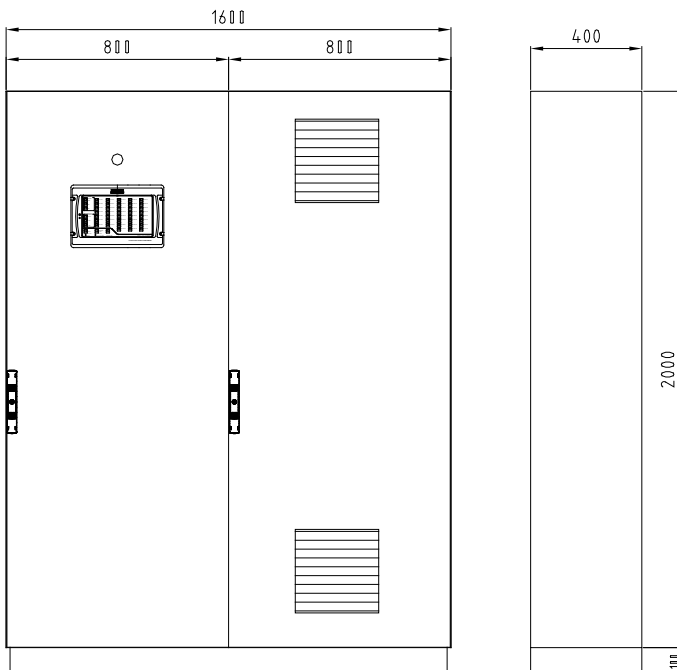
### Outgoing circuit breakers:

<b>Rated voltage:</b>	230/400V
<b>Rated current:</b>	10-25A
<b>Short-circuit making current:</b>	Dependent on system configuration
<b>Short-circuit breaking current:</b>	10 kA (EN 60898)
<b>Short time withstand current:</b>	Dependent on system configuration

### Construction:

<b>Type of panel:</b>	Floor mounted powder coated panel
<b>Degree of protection:</b>	IP 54 (IP 20 with open doors)
<b>Surface protection and finish:</b>	RAL 7035 powder coated
<b>Lifting lugs:</b>	Yes. May be delivered with certificates
<b>Internal space heater:</b>	Optional installed
<b>Cable entries:</b>	Bottom of panel
<b>Relative humidity:</b>	Max. 90%
<b>Ambient operating temperature:</b>	-10 to 60°C
<b>Ambient storage temperature:</b>	-20 to 65°C

## DIMENSIONS \*



\* Dimensions are dependent on system size.

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