Raychem

FroStop system

Easy

With FroStop, design is simple. The FroStop cable is placed directly and in a straight line on the pipe, under the insulation; or in a straight line in the gutter.

Reliable

FroStop cables are very reliable and safe. These selfregulating cables prevent overheating - even when crossed.

Flexible

FroStop cable can easily be cut to the desired length. You can use the rest of the cable for your next installation.

Available

FroStop packs are available through your **electrical wholesaler**. Components, i.e. thermostats, junction boxes and brackets, heatshrink connection and end seal kits, etc. are all also separately available.

30 m heating cable pack

Frost protection of cold water pipes, drains and sprinkler systems



De-icing of roofs, gutters and downpipes





Self-regulating frost protection system for pipes



Design guide

1. Application

Frost protection for pipework at max. 65°C operating temperature

FroStop Green	10 W/m at 5°C
FroStop Black	18 W/m at 5°C

2. Cable length

The heating cable should be installed in a straight line on the pipework. Cable loops can be made instead of T-connections on short stubs (up to approx. 3 m)

Total length of pipe to be traced

- + approx. 0.3 m per connection
- + approx. 1.0 m per T-connection
- + approx. 1.2 m per 4-way connection Additional amount required for increased heat sinks at valves from 2" and uninsulated pipe supports (approx. 1 m)
- = required heating cable length

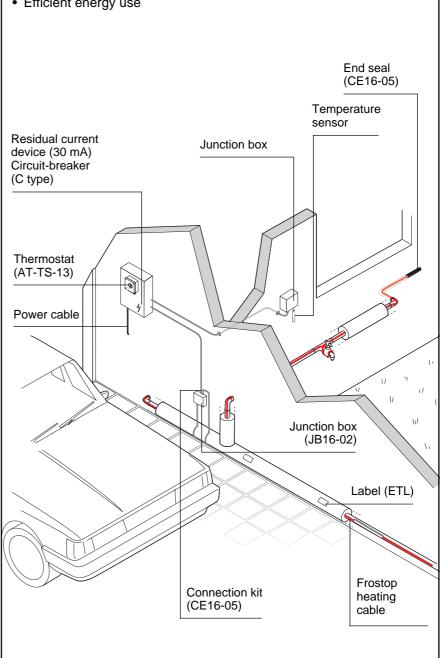
3. Thermostat AT-TS-13



Thermostat

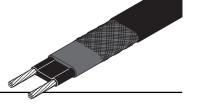
- Adjustable temperature range: -5°C to +15°C
- Line-sensing control thermostat or ambient thermostat
- Max. switching current 16 A 250 Vac

- Reliable pipe protection against frost damage
- Maintenance-free
- · Efficient energy use



4. Insulation selection Frost protection down to -20°C Pipe diameter Insulation mm 15 22 28 76 108 150 thicknesses 1/2" 3/4" 3" Inches 1" 5/4" 11/2" 21/2" 4" 5" 10 mm Green Black Black Black Black 15 mm Green Green Green Black Black Black Black 20 mm Green Green Green Green Green Black Black Black 25 mm Green Green Green Green Black Black Green Green **Black** 30 mm Green Green Green Green Green Green Green Black Black Black 40 mm Black Green Green Green Green Green Green Green Green Black 50 mm Green Green Green Green Green Green Black Green Green Green

Self-regulating safety system for the protection of gutters and downpipes against winter damage



Design guide

1. Application

Frost protection for gutters and downpipes, ideal for lead gutters. FroStop Black:

28 W/m in iced water and 16 W/m in the air at 0°C

Important note: When laying cables on asphalt, bitumen, roofing felt, etc., a cable with a special fluorpolymer jacket (8BTV2-CT) must be used.

2. Laying

The heating cable should be installed in a straight line in the gutter.

The cable lengths should be adjusted according to the geographical situation and the gutters

- More than one cable should be laid in wide valley, parapet or box gutters
- Lay only in channels that are not coated with asphalt, bitumen, etc.
- The cable should descend approx.
 1 m below the frost-free area

3. Cable length

Gutter length

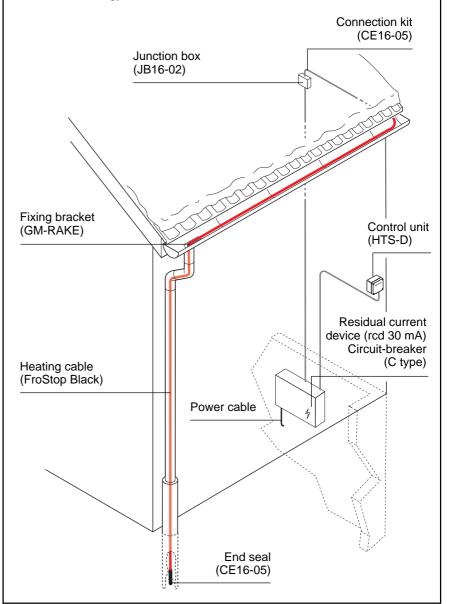
- + drainpipe length
- + 1 m per connection
- + 1 m in the soil (frost line)
- = required heating cable length

4. Control unit HTS-D



- Thermostat
- 2 independant switching points
- Max. switching current: 16 A –230 Vac
- Temperature adjustment range: -15°C to +15°C
- · Outdoor installation
- Economical for circuit lengths up to 30 m
- For lengths over 30 m use the EMDR-1-01 control unit

- Reliable protection against winter damage
- No danger of ice dams in gutters or icicle formation
- · Keeps path free for melting snow and ice
- · Protects buildings and people
- Maintenance-free
- · Efficient energy use



Technical data	FroStop Green 30 m	FroStop Black 30 m
Power output (W/m at 5°C on pipe)	10	18
Supply voltage	230 Vac	230 Vac
Minimum installation temp.	−20°C	−20°C
Minimum bending radius	13 mm	13 mm
Maximum circuit length @16 A	100 m	80 m
Electrical protection at 0°C start up	16 A	16 A
Max. exposure temp.: continuous	+65°C	+65°C
Max. exposure temp.: intermittent (800 h)	+85°C	+85°C

5. Electrical protection

- The total length of heating cable determines the number and size of the fuses
- · Residual current device (rcd): 30 mA required
- · Installation according to local regulations
- The mains connections must be carried out by an approved electrical installer
- Use C type circuit-breakers

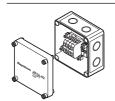
Max. length of the heating circuit is based on a minimum start-up temperature of 0° C, 230 V ac.

	FroStop Black	FroStop Green
10 A	50 m	60 m
13 A	65 m	80 m
16 A	80 m	100 m

6. Accessories

Power connection	1 JB16-02 + 1 CE16-05 + 1 JB-SB-08
Splice	1 JB16-02 + 2 CE16-05 + 1 JB-SB-08
Powered splice	1 JB16-02 + 2 CE16-05 + 1 JB-SB-08
T-connection	1 JB16-02 + 3 CE16-05 + 1 JB-SB-08
Powered T-connection	1 JB16-02 + 3 CE16-05 + 1 JB-SB-08
Four way connection	1 JB16-02 + 4 CE16-05 + 1 JB-SB-08

Notes: Each FroStop box contains one CE16-05 kit. FroStop cables can't be used with RayClic connectors. A JB-SB-08 support bracket is not required for installation in gutters.



JB16-02

Temperature-resistant junction box for power connection or T-connections



JB-SB-08

Single-leg support bracket for junction and connection boxes



CE16-05

Connection and end seal kit

- Heat-shrink technique
- PG 16 glands
- Each FroStop 30 m pack contains one CE16-05 kit.



GM-RAKE

- Fixing bracket/edge protection for drainpipes
- Spacer for use in wide channels or gutters where more than one run of cable is required (a spacer is placed every 100 cm)
- VA steel with UV-resistant cable ties

Easy-to-use packaging

The FroStop cables are delivered on a 30 m spool. The FroStop box contains:

- 30 m self-regulating heating cable FroStop Green or FroStop Black
- One CE16-05 heat-shrink connection and end seal kit
- · One roll of glass-cloth tape
- Five 'electric traced' labels to be placed at 5 m intervals on thermal insulation
- One installation instruction



Ordering description

FroStop Black	PACK-FROSTOP-B-30
FroStop Green	PACK-FROSTOP-G-30

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