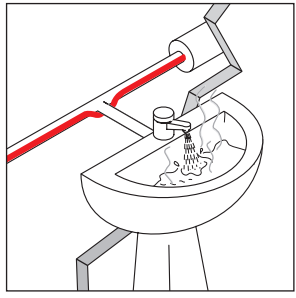


Raychem

Hot water temperature maintenance

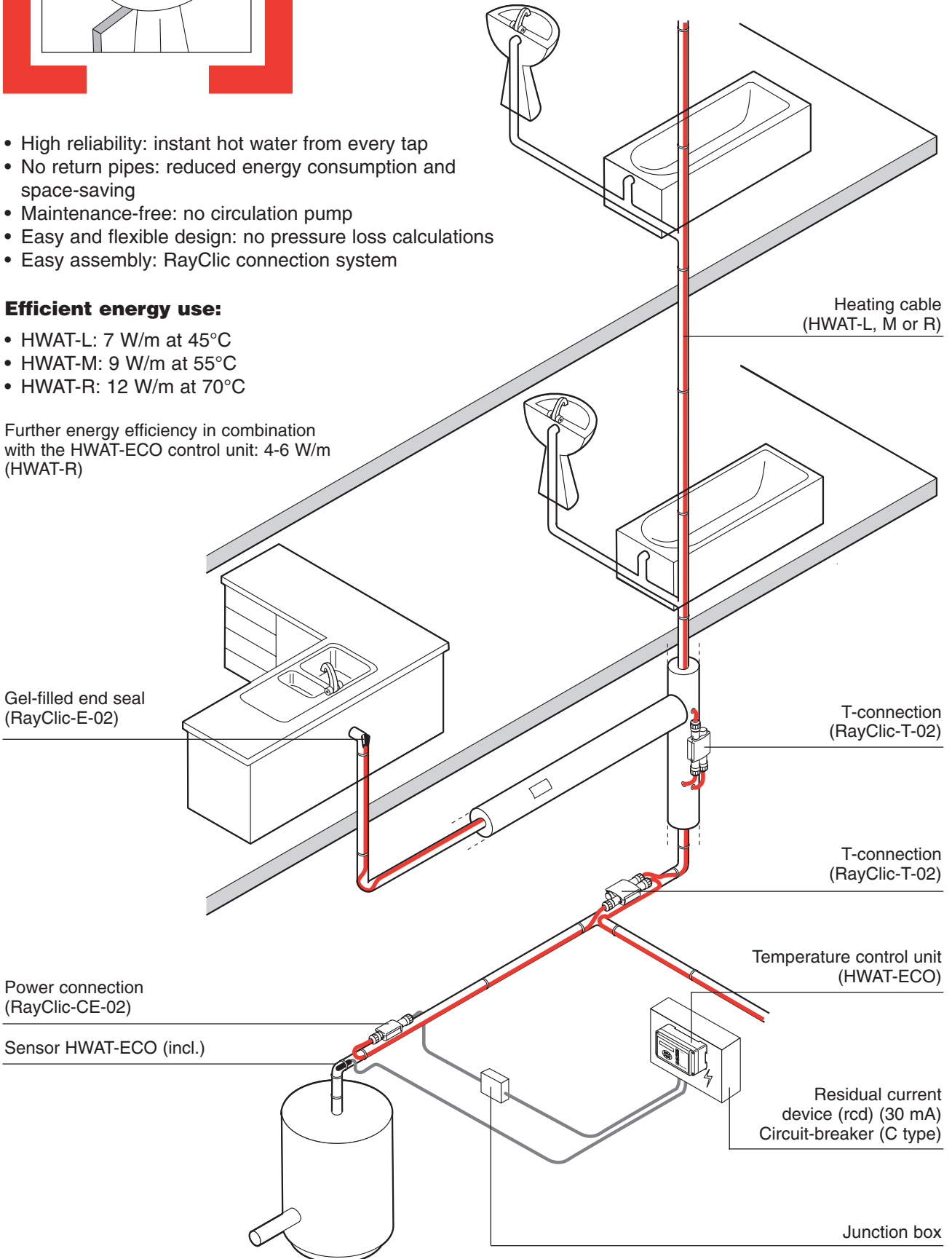


- High reliability: instant hot water from every tap
- No return pipes: reduced energy consumption and space-saving
- Maintenance-free: no circulation pump
- Easy and flexible design: no pressure loss calculations
- Easy assembly: RayClic connection system

Efficient energy use:

- HWAT-L: 7 W/m at 45°C
- HWAT-M: 9 W/m at 55°C
- HWAT-R: 12 W/m at 70°C

Further energy efficiency in combination with the HWAT-ECO control unit: 4-6 W/m (HWAT-R)

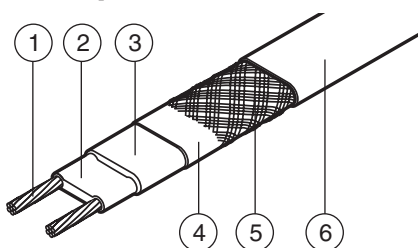


Design guide, control units and accessories

1. Application Optimum water temperature maintenance for single family houses, flats, offices, hotels, hospitals, convalescent homes, sports centres, ...

| Heating cable type | HWAT-L | HWAT-M | HWAT-R |
|---------------------------|----------------|----------------|---|
| Maintenance temperature | typically 45°C | typically 55°C | variable 50-70°C |
| Max. exposure temperature | 65°C | 65°C | 80°C |
| Outer jacket colour | yellow | orange | red |
| Control unit HWAT-ECO | – | compatible | essential |
| Timer QWT-04 | recommended | – | – |
| Legionella prevention | | | Possibility of thermal legionella prevention up to the drawoff points |

2. Composition of the HWAT-L/R/M heating cable



1. Copper conductor (1.2 mm²)
2. Self-regulating heat element
3. Insulation made of modified polyolefin
4. Aluminium laminated wrap
5. Protective tinned copper braid
6. Protective jacket made of modified polyolefin

Technical data: see page 59

3. Heating cable length

- The heating cable is installed in a straight line on the pipework
- The heating cable can be traced right up to the drawoff points

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
 = required heating cable length

4. Insulation thicknesses

| Pipe size (mm) | 15 | 22 | 28 | 35 | 42 | 54 |
|---------------------------|----|----|----|----|----|----|
| Insulation thickness (mm) | 20 | 20 | 25 | 30 | 40 | 50 |

Ambient temperature: 18°C
 Thermal conductivity $\lambda = 0.035 \text{ W/(m.K)}$
 For other thermal conductivity insulation materials, contact your Tyco Thermal Controls representative.

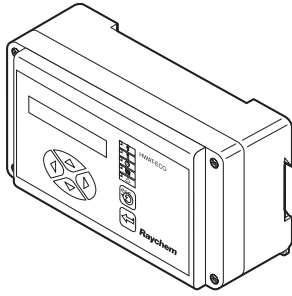
5. Electrical protection

- The total length of heating cable determines the number and size of the circuit breakers
- Residual current device (rcd): 30 mA required
- Power line for the heating cables according to local regulations
- The power connection must be carried out by an approved electrical installer

Circuit-breaker to BSEN 60898 (type C): the maximum length of the heating circuit is based on a minimum start-up temperature of +12°C, 230 VAC.

| | HWAT-L | HWAT-M | HWAT-R |
|------|--------|--------|--------|
| 10 A | 80 m | 50 m | 50 m |
| 13 A | 110 m | 65 m | 65 m |
| 16 A | 140 m | 80 m | 80 m |
| 20 A | 180 m | 100 m | 100 m |

6. Control units

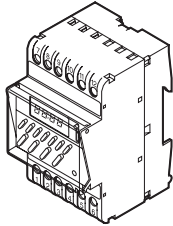


HWAT-ECO (Version 2)

Electronic temperature control unit with integrated clock

- Nine building-specific-programmes
- Boiler temperature monitoring
- Holiday button
- Password protection
- Easy user interface
- Compatible with HWAT-L/R/M heating cables
- BMS interface
- Alarm relay contacts

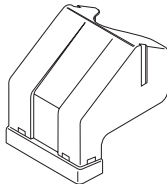
Technical data: see page 9



QWT-04

Pre-programmed, two-channel timer with 7-day programming.

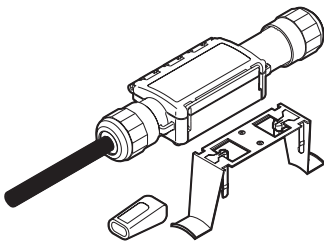
Technical data: see page 8



HARD-70

Terminal cover kit for QWT-04

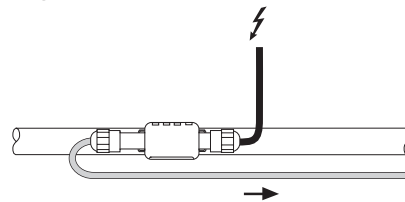
7. Accessories



RayClic-CE-02

Power connection with 1.5 m power cable

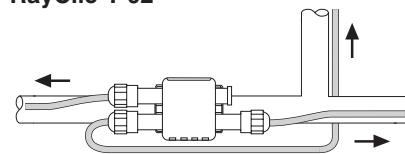
- End seal and support bracket
- IP 68 weather protection



RayClic-T-02

T-connection

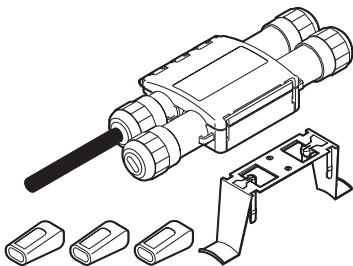
- Connection for 3 cables
- End seal and support bracket
- IP 68 weather protection

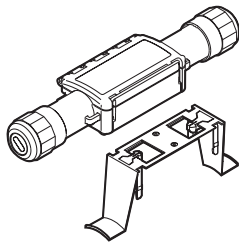


RayClic-PT-02

Power T-connection

- 3 connections with integral 1.5 m power cable
- 3 end seals and 1 support bracket
- IP 68 weather protection

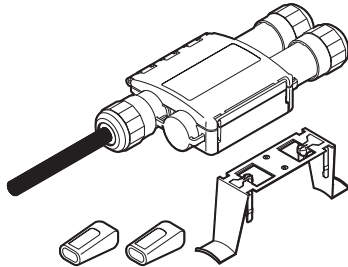
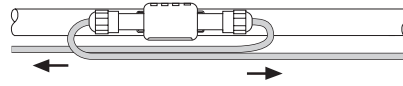




RayClic-S-02

Splice for joining 2 lengths of heating cable

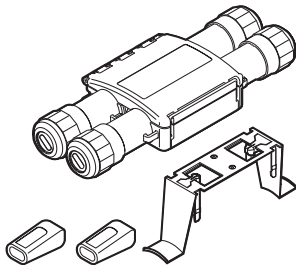
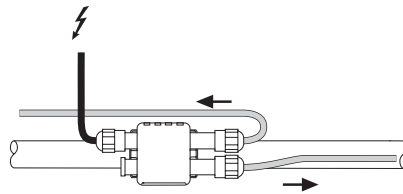
- Connection for 2 cables with 1 support bracket
- IP 68 weather protection



RayClic-PS-02

Powered splice

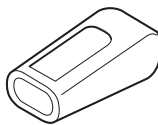
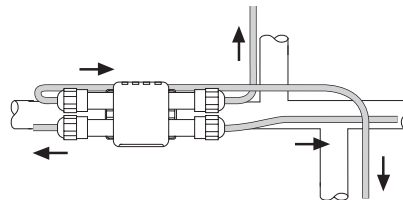
- Connection for 2 cables with integral 1.5 m power cable
- 2 end seals and 1 support bracket
- IP 68 weather protection



RayClic-X-02

4-way connection

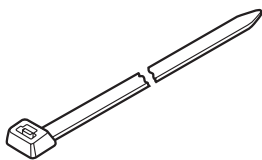
- Connection for 4 cables
- 2 end seals and 1 support bracket
- IP 68 weather protection



RayClic-E-02

Gel-filled end seal

- For system extensions (to be ordered separately)
- IP 68 weather protection



KBL-10

Cable ties

- One pack of 100 required for approx. 30 m of pipework
- Length: 370 mm
- Temperature and UV resistant

Use ATE-180 on plastic pipes

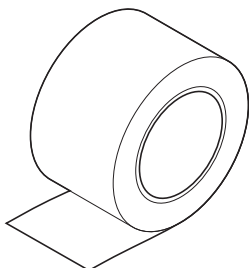


GT-66

Heat-resistant glass cloth tape

- Heat resistant up to 130°C
- 20 m roll for approx. 20 m of pipework

Use ATE-180 on plastic pipes

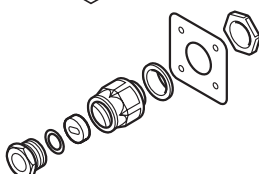


ATE-180

Aluminium adhesive tape

- Heat resistant up to 150°C
- 55 m roll for approx. 50 m of pipework

On plastic pipes: the heating cable must be covered with aluminium adhesive tape along its entire length



IEK-16-05

Insulation entry kit

- Insertion of heating cable in metal cladding
- Consists of: metal fasteners, PG 16 gland and joint seal



LAB-I-01

Electric traced label
 • To be placed at 5 m intervals on pipework surface

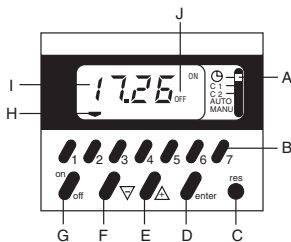
8. Supply voltage

The supply voltage lead to the heating circuits must be laid according to the local standards, codes and regulations.

| MCBs to BS EN 60898 Type C or D, or equivalent | Min. power cable diameter (mm ²) | Max. power cable length (m) HWAT-M | HWAT-R |
|--|--|------------------------------------|--------|
| 10 A | 3 x 1.5 | 200 | 80 |
| 16 A | 3 x 1.5 | 100 | 50 |
| 20 A | 3 x 2.5 | 130 | 70 |

QWT-04 timer

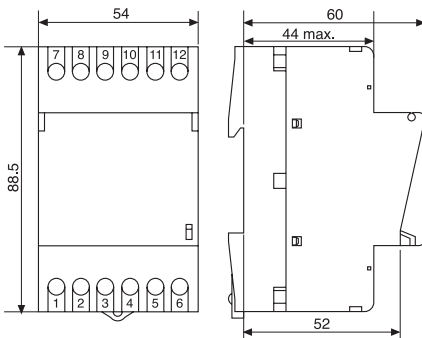
Module layout



- A.** Selection of the modes (sliding switch)
 ⌚ = Time setting
C1 = Programming channel 1
C2 = Programming channel 2
AUTO = running mode
MANU = permanent or timed manual overrides (1 hour to 27 days)

- B.** Day selection
C. Reset
D. Enter (confirm setting)
E. F. Scrolling hours and minutes
G. ON/OFF
H. Display of the days of the week
I. Time display
J. Status of channels 1 + 2
 Channel 1 left
 Channel 2 right

Technical data

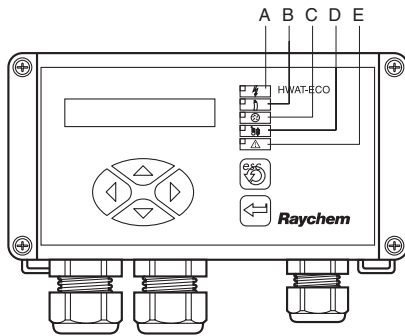





(Dimensions in mm)

| Reference number | Timer | QWT-04 |
|-----------------------------------|--------------------|---|
| | Terminal cover kit | HARD-70 |
| Operating voltage | | 110-240 VAC / +10% -15% / 50/60Hz |
| Programme | | Day/week |
| Switching intervals | | 140 per week 20 set points to share between the two channels (one set point can be allocated to one or several days without using more capacity) |
| Minimum programming step | | 1 minute |
| Channels | | 2 |
| Switch rating | | 1 potential-free selector per channel 16 A, 250 VAC |
| Battery back-up | | > 3 years through lithium battery |
| Power consumption | | < 1 VA |
| Accuracy | | ± 1 sec/day at 25°C |
| Operation and storage temperature | | -10°C to +50°C |
| Material | | ABS Cicolac and ABS PC Cicoloy |
| Ingress protection | | IP 40 |
| Weight | | 190 g |
| Mounting | | Mounted on DIN rail |
| Terminals | | Wire cross-section: 1 to 4 mm ² |

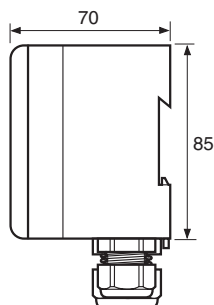
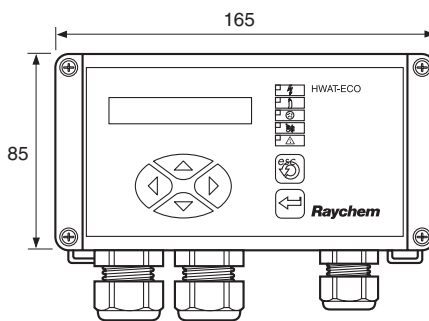
HWAT-ECO Temperature control unit (Version 2)

Module layout



- A** Power supply on (green LED)
 - B** Power to heater on (green LED)
 - C** Legionella prevention (green LED) - heating cable 100% powered - increased risk of scalding
 - D** Maintain temperature lowered following boiler temperature decrease (green LED) - boiler temperature is lower than expected.
 - E** Error (red LED)
-  Change menu selection or position cursor
 -  Escape, backspace or NO
 -  Confirm selection, new value or YES

Technical data



(Dimensions in mm)

| | |
|--|--|
| Product description | HWAT-ECO |
| Use | Only for HWAT-L/R/M heating cables |
| Selectable maintain temperature | 41°C to 65°C in max. 48 timer blocs per day |
| Operating voltage | 230 VAC (+10%, -10%), 50 Hz |
| Switching capacity | 20 A / AC 230V |
| Internal power consumption | 2,5 W |
| Circuit breaker | Max. 20 A, C-Characteristic |
| Power cable section entry | 1.5 - 4 mm ² for fixed wiring only |
| Auxiliary cable section entry | Up to 16 AWG (1.3 mm ²) |
| Weight | 880 g |
| Mounting options | Wall mount with 2 screws or DIN rail |
| Cable glands (entries) | 2 x M20 and 1 x PG13.5 with 3 inputs for external wires of 3-5 mm |
| Protection level | IP 54 |
| Ambient temperature | 0°C to 40°C |
| Housing material | ABS |
| Internal temperature alarm | 85°C |
| Master/slave cable | 2-wire twisted pair, max. 1.3 mm ² core and insulation of 500 V |
| Master/Slave | Master is selectable in the unit, up to 8 slaves can be connected |
| BMS interface | 0 - 10 VDC |
| Alarm relay contacts | Max. 24VDC or 24 VAC, 1 A voltage free |
| Boiler temperature sensor | NTC |
| Power correction factor | 60% to 140% (fine tuning of maintained temperature) |
| Clock back-up time | 8 hours ±10% |
| Clock accuracy | ±10 minutes per year |
| Real time clock | Automatic summer/winter time and leap year correction |
| Parameters stored in non-volatile memory | All parameters, except date and time |
| Approval | VDE according to EN 60730 |
| EMC | According to EN 50081-1/2 for emission and EN 50082-1/2 for immunity |

Raychem requires the use of a 30 mA residual current device and a C-Characteristic circuit breaker to provide maximum safety and protection from fire.

The unit complies with IEC1000-3-3 (flicker) if installed according to part 3 of VDE 0838. To avoid flicker install the unit in such a way that at the current value of the systems start-up temperature (max. 20 A per heating circuit) the voltage drop does not exceed 1% at the power supply of the lightning apparatus (normally subpanel).

Program

The HWAT-ECO has 9 different building specific time/temperature programs. These programs are based on our long experience for optimum comfort and energy saving. For user specific changes in the programming, the Edit timer program can be used.

| Program name | Building type |
|---------------------|---|
| Program 0 | Constant temperature ($\pm 55^{\circ}\text{C}$) |
| Program 1 | Apartment block |
| Program 2 | Family home |
| Program 3 | Prison / Barracks |
| Program 4 | Hospital |
| Program 5 | Nursing home |
| Program 6 | Hotel |
| Program 7 | Sports centre / Swimming pool |
| Program 8 | Convalescent home |

In addition user specific programs can be created

Temperature can vary in 1/2 h block to any desired temperature between:
OFF, economic t° , maintain t° and legionella prevention (100% powered, increased risk for scalding)

SELVREGULERENDE VARMEKABEL

Tyco Thermal HWAT – Bibeholdelse av varmt tappevann



Bruksområde

HWAT benyttes til bibeholdelse av varmt tappevann innendørs. Hurtigkoblinger kan brukes.

Konstruksjon

| | |
|------------|-------------------|
| Leder | Flertrådet Cu |
| Isolasjon | Al laminert lag |
| Ytre kappe | Polyolefin |
| Skjerm | Fortinnet flettet |

Elektriske egenskaper

| | |
|--------|------------------|
| HWAT-L | 7 W/m ved 45 °C |
| HWAT-M | 9 W/m ved 55 °C |
| HWAT-R | 12 W/m ved 70 °C |

Maksimal kontinuerlig ekponeringstemp.

| | |
|--------|-------|
| HWAT-L | 65 °C |
| HWAT-M | 65 °C |
| HWAT-R | 80 °C |

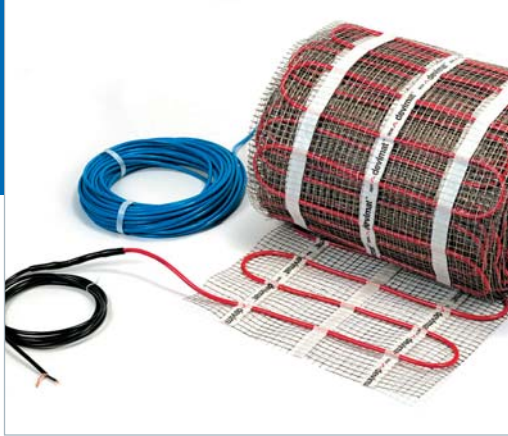
Maks kretslengde (20 A)

| | |
|--------|-------|
| HWAT-L | 180 m |
| HWAT-M | 100 m |
| HWAT-R | 100 m |

| Elnr. | Type | Dimensjon Leder x mm ² | Farge | Ytre diam. mm | Vekt Kg/km | Pakning m | EAN-nummer |
|--------------------------------------|---------------------------------|--------------------------------------|--------|------------------|---------------|--------------|------------|
| 1038208 | HWAT-GUL 45°C | | Gul | | | 200 | |
| 1038209 | HWAT-ORANGE 55°C | | Orange | | | 200 | |
| 1038210 | HWAT-RØD 65°C | | Rød | | | 200 | |
| Tilbehør | | | | | | | |
| 1038375 | CE16-05 tilkobl. endeavslutning | | | | | 1 | |
| 1038384 | CCE-03-CR skjøt endeavslutning | | | | | 1 | |
| Rayclic hurtigkoblinger kan benyttes | | | | | | | |

SERIERESISTIV VARMEMATTER

Devimat DTIF 70/100/150 W/m² Varmekabelmatte



Bruksområde

For lavtbyggende gulv på alle underlag, våte og tørre rom. Gulvet må primes før utlegging. Devimat må støpes inn i fiberarmerte masser eller fleksibelt flislim.

Konstruksjon

| | |
|------------|---------------|
| Leder | Motstandstråd |
| Isolasjon | Teflon |
| Skjerm | Cu |
| Ytre kappe | PVC rød |

Elektriske egenskaper

| | |
|----------|----------------------|
| Spenning | 230 V |
| DTIF-70 | 70 W/m ² |
| DTIF-100 | 100 W/m ² |
| DTIF-150 | 150 W/m ² |

| Elnr. | Type | Matte B x L m | Min. romareal m ² | Effekt W | Vekt Kg/stk | Ytre diam. mm | EAN-nummer |
|------------------------|----------|---------------------|------------------------------------|-------------|----------------|------------------|------------|
| Devimat 70 W/m | | | | | | | |
| 10 353 50 | DTIF-70 | 0,5x6,0 | 3,00 | 210 | 2,1 | 3,0 | |
| 10 353 52 | DTIF-70 | 0,5x10,0 | 5,00 | 350 | 3,0 | 3,0 | |
| 10 353 54 | DTIF-70 | 0,5x14,0 | 7,00 | 490 | 4,0 | 3,0 | |
| 10 353 56 | DTIF-70 | 0,5x17,5 | 8,75 | 615 | 5,0 | 3,0 | |
| 10 353 58 | DTIF-70 | 0,5x23,5 | 11,75 | 825 | 6,3 | 3,0 | |
| Devimat 100 W/m | | | | | | | |
| 10 353 02 | DTIF-100 | 0,5x2,0 | 1,0 | 100 | | 3,0 | |
| 10 353 04 | DTIF-100 | 0,5x3,0 | 1,5 | 150 | | 3,0 | |
| 10 353 06 | DTIF-100 | 0,5x4,0 | 2,0 | 200 | 1,4 | 3,0 | |
| 10 353 08 | DTIF-100 | 0,5x5,0 | 2,5 | 250 | 1,8 | 3,0 | |
| 10 353 10 | DTIF-100 | 0,5x6,0 | 3,0 | 300 | 2,0 | 3,0 | |
| 10 353 12 | DTIF-100 | 0,5x7,0 | 3,5 | 350 | 2,2 | 3,0 | |
| 10 353 14 | DTIF-100 | 0,5x8,0 | 4,0 | 400 | 2,5 | 3,0 | |
| 10 353 16 | DTIF-100 | 0,5x10,0 | 5,0 | 500 | 3,0 | 3,0 | |
| 10 353 18 | DTIF-100 | 0,5x12,0 | 6,0 | 600 | 3,8 | 3,0 | |
| 10 353 19 | DTIF-100 | 0,5x14,0 | 7,0 | 700 | 4,3 | 3,0 | |
| 10 353 20 | DTIF-100 | 0,5x16,0 | 8,0 | 800 | 4,6 | 3,0 | |
| 10 353 21 | DTIF-100 | 0,5x18,0 | 9,0 | 900 | 5,0 | 3,0 | |
| 10 353 22 | DTIF-100 | 0,5x20,0 | 10,0 | 1000 | | 3,0 | |
| 10 353 23 | DTIF-100 | 0,5x24,0 | 12,0 | 1200 | 6,3 | 3,0 | |
| Devimat 150 W/m | | | | | | | |
| 10 353 30 | DTIF-150 | 0,5x2,0 | 2,0 | 150 | | | |
| 10 353 33 | DTIF-150 | 0,5x3,0 | 3,0 | 225 | | | |
| 10 353 34 | DTIF-150 | 0,5x4,0 | 4,0 | 300 | 1,0 | 3,0 | |
| 10 353 36 | DTIF-150 | 0,5x5,0 | 5,0 | 375 | 1,8 | 3,0 | |
| 10 353 38 | DTIF-150 | 0,5x6,0 | 6,0 | 450 | 2,1 | 3,0 | |
| 10 353 40 | DTIF-150 | 0,5x7,0 | 7,0 | 525 | 2,3 | 3,0 | |
| 10 353 42 | DTIF-150 | 0,5x8,0 | 8,0 | 600 | 2,8 | 3,0 | |
| 10 353 44 | DTIF-150 | 0,5x10,0 | 10,0 | 750 | 3,2 | 3,0 | |
| 10 353 46 | DTIF-150 | 0,5x12,0 | 12,0 | 900 | 3,5 | 3,0 | |
| 10 353 47 | DTIF-150 | 0,5x14,0 | 14,0 | 1050 | 6,9 | 3,0 | |
| 10 353 48 | DTIF-150 | 0,5x16,0 | 16,0 | 1200 | | 3,0 | |

Devireg™ 530-serien

Termostatserie som gir bedre driftsøkonomi, sikkerhet og komfort.

Devireg™ 530-serien består av enkle men effektive innendørs termostater. Devireg™ 530-serien sikrer god komfort og presis styring av gulvvarme og komfortvarme i alle typer rom og for alle typer gulv. (Støp, flislim, tregulv etc.)

Tre termostater dekker alle behov

Devireg™ 530 serien består av tre termostater med dekker ulike behov avhengig av om man skal styre romtemperaturen, gulvtemperaturen eller en kombinasjon av disse.

Alle termostater i Devireg™ serien er IP 31 klassifisert og derfor også godt egnet for montering i våtrom. Som en ekstra fordel kan Devireg™ 532 låses på en maks. gulvtemperatur som gjør den godt egnet for styring av gulvvarme under tregulv hvor temperaturen aldri skal overstige 27° C.

65 prosent lavere standby forbruk

Som med alle DEVI produktene er det fokusert på løsninger med lavt energiforbruk. DEVI har lyktes i å utvikle en termostat med 65 prosent lavere standby forbruk. En Devireg™ 530 bruker kun 6,13 kWh årlig i standby.

I tillegg har Devireg™ 530 termostatserien en 15A relè som gjør det mulig å regulere gulvvarmen på arealer opp til 34,5 m² med 100 WATT per m².

Høy sikkerhet

Devireg™ 530 serien er utstyrt med en to-polet sikkerhetsbryter som kan slå termostaten helt av. Samtidig sørger DEVI's nye feilovervåkingssystem for at gulvvarmen øyeblikkelig slås av ved kortslutninger eller eventuelle følerfeil. Slik unngår man at gulvet blir for varmt. Feil indikeres også i LED dioden i front.



Devireg™ 530
Komfortvarme
(gulvføler)



Devireg™ 531
Romtemperatur
(romføler)



Devireg™ 532
Komfortoppvarming av
tregulv (innebygget
romføler og gulvføler)

| El.nr. | Type |
|-----------|--|
| 54 026 60 | Devireg 530 med gulvføler |
| 54 026 61 | Devireg 531 med innebygget romføler |
| 54 026 62 | Devireg 532 med innebygget romføler og gulvføler |

Produktegens

To-polet sikkerhetsbryter

Lav standby forbruk

Feilovervåkingssystem
Termostaten har feilovervåkingssystem som sørger for at gulvvarmen øyeblikkelig slås av ved kortslutninger eller følerfeil. Feil indikeres også i LED dioden i front.

IP 31

15 A

Tekniske data:

Driftsspenning:

Effektforbruk:

Relè:

- Resistiv belastning

- Induktiv belastning

Følertype:

Følerverdier:

- 0 C

- 20 C

- 50 C

Hysteresise/kopl.diff:

Temperatur-område:

- 530:

- 531:

- 532:

Maks. gulvtemp. innstilling:

Omgivelsestemperatur:

Frostsikring:

LED indikator:

Ikke lys:

Rødt lys:

Grønt lys:

Grønt blinkende lys:

IP Klasse:

[Gulvvarme](#)
[Is og snøsmelting](#)
[Diverse](#)
Hvorfor elektrisk gulvvarme?
Varmekabel i støp
Varmekabel i tregulv
Lavtbyggende gulvvarme
Bakke anlegg
Tak anlegg
Håndklettørkere
Speilvarme
Deviflex DTIP-8
Deviflex DTIE-10 og DTIE-17
Devimat DTIF-70, 100, 150
Deviflex DSIA metervare
Deviflex DSIA-25
Devimat DSIA-300
Selvbegrensende VK
Selvbegrensende kabel Plug In
Deviflex DTIV-9
Devicell DRY
Devifoil varmemefolie
Devireg 527
Devireg 316
Devireg 330
Devireg 530 serien
Devireg 535
Devireg 550
Devireg 610
Devireg 850
Devirail
DEVI Speilvarme
Devitronic avfuktningselementer
WEB HOME
DEVI info
[Kontakt oss](#)
Historen om DEVI
Besøk fabrikken
DEVI