# Accessories

**VärmeKabel Teknik**

# INDEX

## Product overview

Intel Atom/VIA solution, without fan, touch-screen, water-proof, LED background panel, utan fläkt, pekskärm, vattensäker, LED bakgrundspanel.

## PANEL PC information

LCD Panel................................................................ CPT
Resolution........................................... 800 x 480
Brightness (cd/m$^2$)...................................................250
Contrast Radius...................................................400 : 1
Backlight.................................................................. LED
Number of colours........................................... 262144
Touchscreen ...........4 wires / Resistive touchscreen
Assembly specification..................................VESA 75
Waterproof panel frame .......................................IP65
Accessories (Optional) ........Wall mounting kit/rack

**Touch Screen**

## Panel PC without fan

Dimensions ......................58 H x 189 W x 128 D mm
Weight.................................................1.2 kg (inkl. M/B)
Material.......................Frame in plastic + aluminium
Storage..........................................CF Card / 2.5" HDD
Operating humidity ....5 ~ 90% @ 39°C, non con-densing

## M/B Information (please see M/B specification)

| CPU Type | M/B Model | VGA | COM | LAN | USB | Audio | Display port | Operating temp. | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | CF kort | HDD |
| Intel Atom D525 1.8GHz | 31525CW | 1 | 1 | 2 | 2 | Ja | - | - | - |
| Intel Atom N270 1.6GHz | 31270C | - | 1 | 1 | 2 | Ja | - | 60° | 50° |

| More functions | | | |
|---|---|---|---|
| Aluminium/Stainless cover | 3G | Wi-Fi | GPS |
| DC +6V to +36V | Bluetooth | 1 ~ 4 Video-IN | Optional LAN | Speakers |

Above available function outside the the possibilites of the system, for more information contact us.

**Dimension**

189
153.6
17.68
92.64
128

58
48
115
14.5

**VESA 75 Mounting**
4-M4
75
15.5
75

3I270C
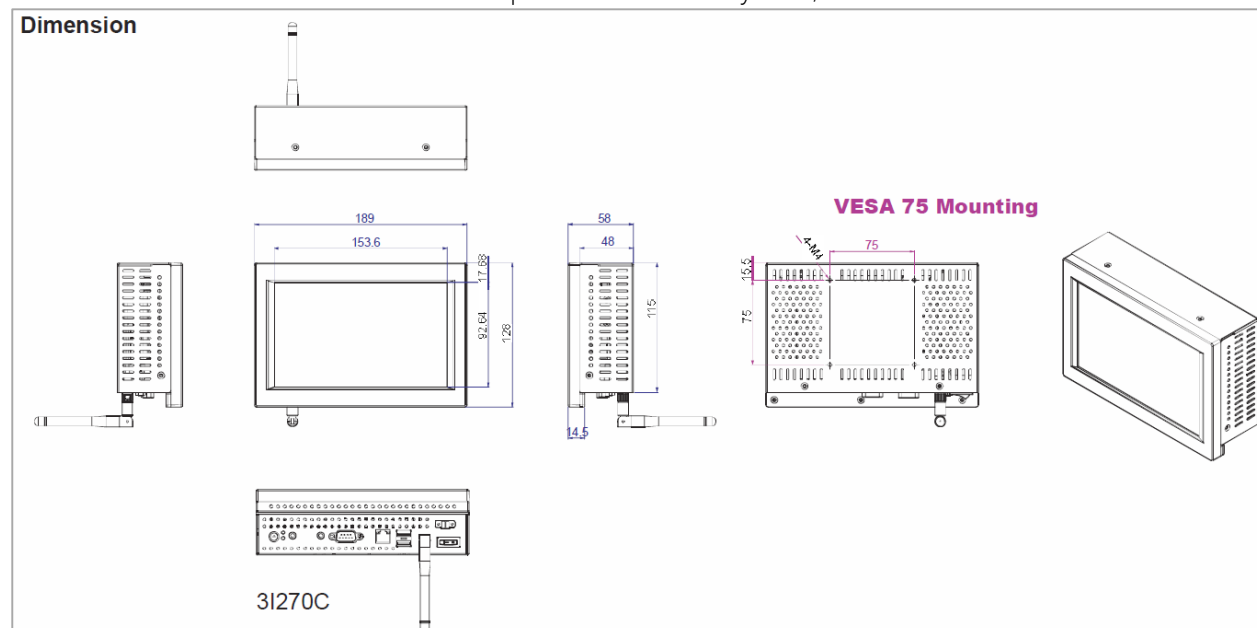
First and only weather station in its class to use frequency hopping spread spectrum radio technology to transmit weather data wirelessly up to 1000' (300 m).

Vantage Pro 2 weather stations are available in both wireless and cabled versions. All include the Davis innovative integrated sensor suite, which combines the rain collector, temperature and humidity sensors and anemometer all into one package - making setup easier than ever and improving performance and reliability.

## Contents of the Free Mini Installation Kit

- 1 x 1 metre (2.6ft) aluminium mast
- 1 x 6 inch stand-off bracket
- 2 x U-bolts and nuts (44mm)
- 4 x Exterior coach screw
- 4 x 10mm nylon wall plugs 2 x 6mm nylon wall plugs
- 10 x Cable ties 1 x Instruction manual

## Delivered With

Vantage Pro 2 console/receiver
Integrated sensor suite and mounting hardware
Integrated sensor suite includes:

• Rain collector
• Temperature and humidity sensors
• Anemometer - 40' (12m) anemometer cable
• Solar panel

## Technical Data

Sensor suite is solar powered

Electronic components are housed in a weather-resistant shelter

Console may be powered using the included AC-power adapter or with three C batteries (not included)

Wireless range is up to 1000' (300 m) outdoors - in line of sight

Typical range through walls under most conditions is 200' to 400' (60 to 120m)

Add wireless repeaters for distances up to 1.7 miles (2.7 km)



## Rain Collector

With it's self emptying tipping bucket is exceptionally accurate

You can read rainfall amount in 0.01" or 0.2mm increments

Designed to meet the guidelines of the World Meteorological Organization, the Davis aluminium plated tipping bucket is corrosion-resistant and laser calibrated for accuracy

## Anemometer

The anemometer includes both wind speed and direction sensors
Rugged components stand up to hurricane force winds, yet are sensitive to the lightest breeze
The anemometer is wind-tunnel tested to speeds in excess of 170 miles per hour (274 km/h)
Temperature and Humidity Sensors
These are located within the radiation shield
The shield protects the sensors from solar radiation and other sources of radiated and reflected heat

## Wireless Integrated Sensor Suite

The ISS runs on solar power
Lithium battery provides back-up at night and on wintry, cloudy days
(Solar panel is not included with cabled version)

## Beställningsinfo

Part.no.............................................................. 3950188

Denomination: ...... Weather station Vantage Pro 2

Environmental Technology, Inc.



## Features & Benefits

- Automatic snow and ice melting controller minimizes operating costs.

- Automatic voltage selection operates from 100VAC – 240 VAC

- Adjustable hold-on time and temperature set point provides flexibility for a wide range of applications.

- Rated for up to 3 amp inductive loads for pilot duty applications and resistive loads up to 16 Amps.

- Sno-TestTM automatic testing and manual heater cycle for system testing.

- Simple four-wire installation.

- C/UL/US-listed for temperature regulating equipment.

## Description

The Snow Switch Model LCD-8 confirgurable aerial snow melting controller makes automatic snow melting a cost effective alternative in even the smallest applications. Heaters operate at temperatures below the set point, 3.3°C default, only when required. The adjustable hold-on period, 3 hours default, continues heater operation after snow stops to ensure complete melting. The LCD-8 controller includes an internal magnetic reed switch used for manual heater cycling, as well as configuring the temperature set point and the hold-on-time.
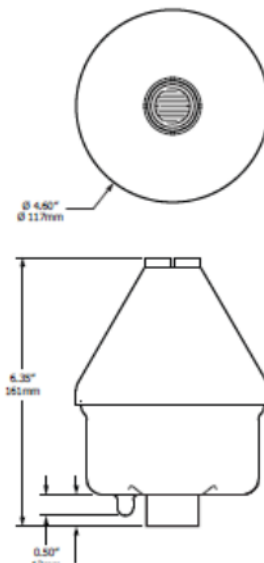
The LCD-8 controller operates from either an automatic selecting 100VAC – 240VAC or from 24VAC. These two voltage options combine with the configurable hold-on time and temperature set point to meet the need of a wide number of applications using just two part numbers.

It controls heater loads up to 16 amps resistive or 3 amps inductive. The operating temperaturer ange extends from –40°C to 60°C. The redesigned, patent pending, rugged polycarbonate enclosure provides excellent protection at temperature extremes, while allowing snow to shed to prevent iglooing over the moisture sensor.

The internal magnetic reed switch allows for both configuration and manual heater operation without the need for external switches – which are susceptible to damage – or the need to open the enclosure.

Verifying system functionality after installation or when troubleshooting used to require spray circuit cooler or ice for controller activation. The Sno-Test™ feature eliminates this need by performing a self-test after power application, and operating heaters in a unique pattern for a few seconds. Reading the test results takes only an AC voltmeter or clamp-on ammeter.

For complete information describing its application, installation and features contact us!

## Specifications

### General

| | |
|---|---|
| Area of use | Nonhazardous locations |
| Approval | |
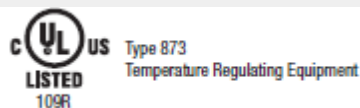


### Enclosure

| | |
|---|---|
| Protection | NEMA 3R |
| Cover attachment | Polycarbonate with machine screws |
| Entries | 1 x ¾" entry (bottom) |
| Material | Polycarbonate |
| Mounting | Pole mount |
| Dimensions | 117mm (Bredd) x 155mm (Höjd) |

### Control

| | |
|---|---|
| Supply voltage | ETI PN 24619: 100VAC – 240VAC; 50/60 Hz |
| | ETI PN 24781: 24VAC ; 50/60 Hz |
| Load | 16 A max. resistive load (3 A. inductive load) |
| Heater hold-on timer | 0, 1, 3 (default) or 5 hours; configured by magnetic reed switch |
| Set point temperature | OFF (moisture only), 2.2°C, 3.3°C (default), 4.4°C |
| | Configured by magnetic reed switch |

### Interface

| | |
|---|---|
| Status indicators | SUPPLY (green): Power on; will flash while in configuration mode |
| | HEAT (yellow): Heating cycle in progress |

### Wire and cable classes

| | |
|---|---|
| Power cable | 2 x 1,5 mm² |
| Heating cable | 2 x 5,2 mm ² |

### Environmental

| | |
|---|---|
| Operating temperature | -40°C to 40°C |
| Storage temperature | -55°C to 75°C |

| Order Number | Description |
|---|---|
| 24619 | LCD-8 Snow Switch, 100-240 VAC (FP 1) |
| 24781 | LCD-8, 24VAC |
| 18703 | Red connector lamps  (FP 4) |
| 24782 | lcd-8 Manual (FP 1) |

## Features & Advantages

- Minimum energy costs
- Automatic snow melting
- Snow melt only when necessary
- Sense both temperature and precipitation
- Performance optimized for hydronic applications
- Simple installation
- Reliable
- Low cost

LCD-1H & LCD- The LCD–1H & 3H Snow Switch saves energy by providing snow melting only when required during snowfall and for a time thereafter to ensure complete melting.

As heavy, wet spring and autumn snow often occurs above freezing, the LCD–1H & LCD–3H detects precipitation as snow at temperatures below 38°F (3.3°C). The LCD–1H's internal, isolated 3 amp relay contact remains closed for a 5-hour hold-on time after snowfall stops to ensure complete snow melting and pavement drying. The LCD–3H remains closed for 1-hour hold-on time.

The LCD–1H & 3H Snow Switch achieves high performance at low cost through microprocessor control. Members of the LCD product family have provided more than 70 million hours of reliable snow melting control.

For complete information describing application, installation and features, please contact us personally, +46-301-418 50.

### Installation

The LCD–1H Snow Switch housing has one 1/2" (16mm) NPT threaded opening. Choose an unobstructed elevated location exposed to snowfall. Rigidly mount in upright, plumb position as shown. Connect the black and white wires to the 24 VAC power supply. Yellow wires are from an isolated 3 Amp resistive/1 Amp inductive relay contact.

### Orderinfo

| Order no | Description |
|----------|-------------|
| 16793 | LCD-1H snow switch (5 hour hold-on timer)) |
| 19435 | LCD-3H snow switch (1 hour hold-on timer) |

## Beskrivning
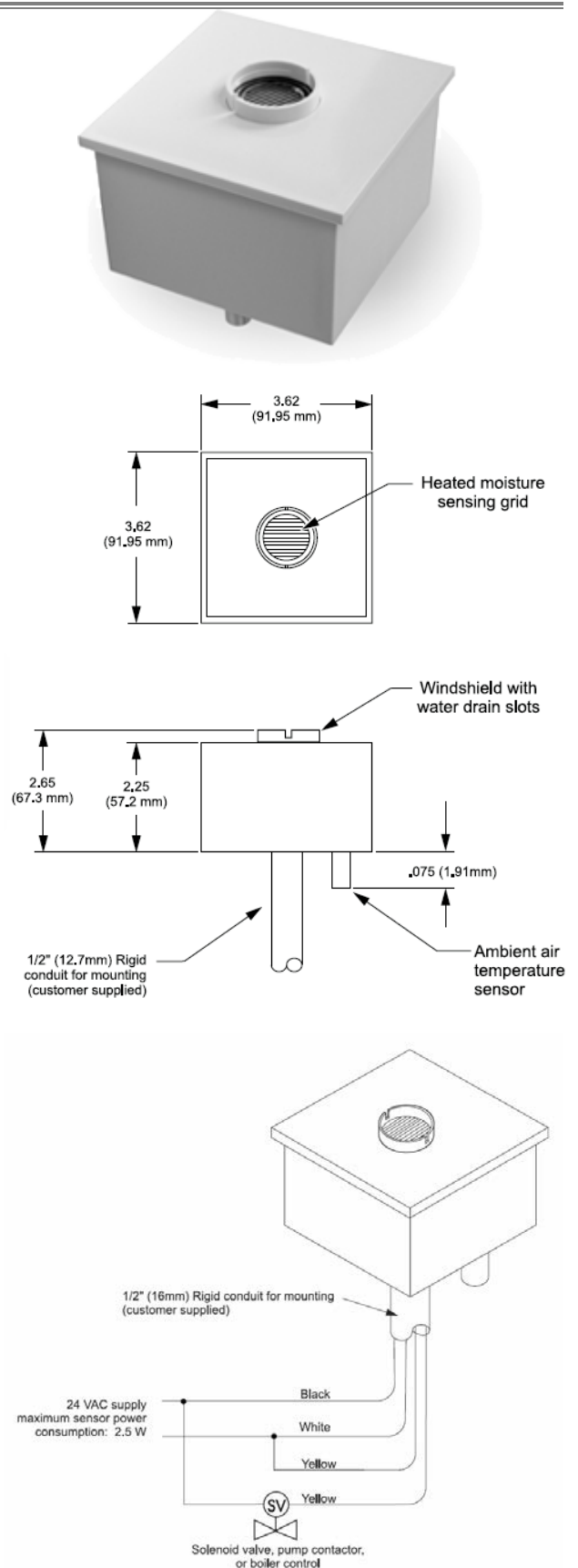
## Antenna for weather and wind

A robust and weatherproof antenna that work with current and future cellular, ISM band at 868 MHz and wifi. The antenna is robust yet discreet, and has a sleek design that makes snow and ice sticks to it so easily.

## Flexible mounting

The antenna provides flexible mounting on various materials and surfaces, it can be screwed onto a wall, attached to a cabinet or in a false ceiling. Installation is simple and only requires one to three holes drilled, one for an antenna cable and, depending on the surface, two holes for screw with a nut on the back, or tapping screws or screws and dowels.

We recommend these antennas in front of the so-called puck antennas because they offer a higher degree of amplification, in addition the installation is simple and requires no special tools.

## Prooved performance

The antenna have been delivered worldwide for many years and is a proven reliable product. Normally it comes with 1 meter cable and SMA connector but we can make other execution upon request.



## Technical data

Frequency range
............. 868/900/1800/1900/2100/2400/2600 MHz

Antenna gain:
868-968 MHz: ............................................... 2,15 dBi
1710-2170 MHz ............................................. 4,15 dBi
2400-2690 MHz ............................................ 3,15 dBi

Dimension: ...........................................136x48x42 mm

Temperature range: ................................-40 to 85°C

Contact: ...........................................................SMA male

Length of cable: ...........................................................1m

## Order info

Part.no ...............................................................................

Denomination: ...............................................................

# RF-ANTENNA

## Technical data

Frequency:................800/900/1800/1900/2100 MHz

Unit:........................................................M/M

Tolerance:.....................................x.xx±0...15

Surface roughness: .......................................S

.............................................................. ▽▽
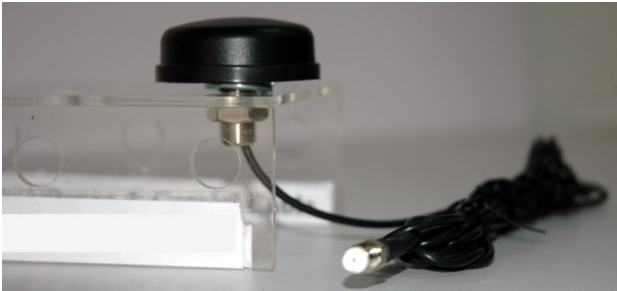
## Order info

Part.no ................................................. 3950144

Denomination .......................................... RF-Antenna
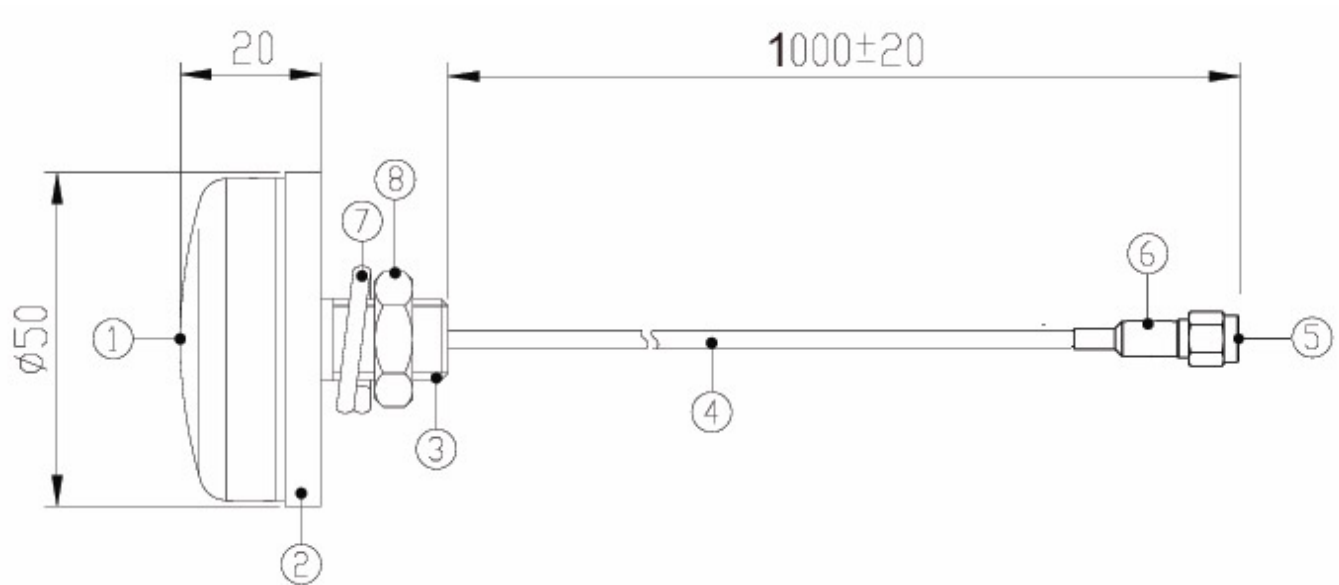


| NO. | NAME | FINISH | QTY |
|-----|------|--------|-----|
| 01 | Top cap | Black | 1 |
| 02 | Base | Black | 1 |
| 03 | Screw set | Nickel plating | 1 |
| 04 | RG-174 A/U cable | Black | 1 |
| 05 | SMA 180* Male | Nickel plating | 1 |
| 06 | Heat-shrink tube | Black | 1 |
| 07 | Washer | Nickel plating | 1 |
| 08 | Nut hexagonical | Nickel plating | 1 |

## Product information

H685 Mobile Router is designed to set up a 2G / 3G / 4G mobile and Wi-Fi network and share a mobile broadband connection. H685 Router enables users to quickly create a secure Wi-Fi (802.11 b / g / n) network and provide access to the Internet via a cellular network. By connecting to the mobile network; an Internet connection is established and shared virtually anywhere within a wireless broadband network.

## Typical topology



*Continued....*
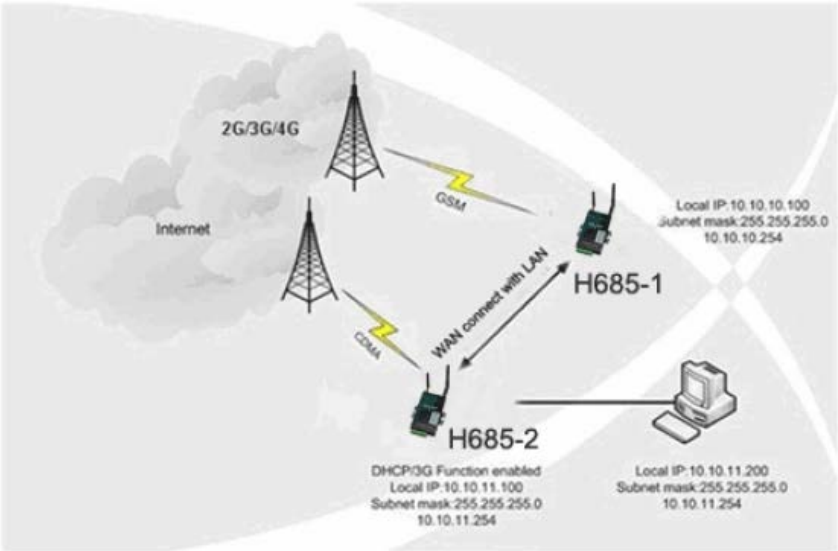
Dual H685 Typical Application Diagram

| Double H685 Application-/Combination examples | |
|---|---|
| H685-1 | H658-2 |
| Newtwork A | Network B |
| Network A | Network A |
| This means that H685-1 and H685-2 may be the same network, but may also be different network. <br> Network A can be any of  GSM / GPRS / EDGE / UMTS / HSDPA / HSUPA / HSPA / HSPA + / 4G LTE / CDMA1X / EVDO; <br> Network B can be any of GSM / GPRS / EDGE / UMTS / HSDPA / HSUPA / HSPA / HSPA + / 4G LTE / CDMA1X / EVDO; <br> Please inform us which network you want to use before ordering. | |

*Continued...*

## Specifications

### Wireless

**Compatible mobile network**

UMTS WCDMA (HSUPA/HSDPA/HSPA/HSPA+/DC-HSPA+

GSM EDGE/GPRS
CDMA1x
CDMA2000 EVDO Rev 0, Rev A, Rev B
TD-SCDMA/TD-LTE

**Mobile frequency**

UMTS/HSPA/HSUPA/HSPA/HSPA+/ DC-HSPA+ (WCDMA/FDD):
850/1900/2100 MHz, urval för 850/900/1900/2100Mhz/1700Mhz/AWS;

3G TD-SCDMA: 2010~2025MHz/1880~1920MHz

Quad-band EGSM 850/900/1800/1900;

CDMA1x/EVDO: 800/1900Mhz, option for 450Mhz;
4G FDD LTE:
Band 1--2100Mhz
Band 2--1900Mhz
Band 3--1800Mhz
Band 4—AWS(1700/2100Mhz)
Band 5--850Mhz
Band 7--2600MHz
Band 8--900Mhz
Band 12--700Mhz
Band 13--700(B13)Mhz
Band 17--700(B17)/AWS
Band 19—800Mhz
Band 20--DD800Mhz
Band 21
Band 25 –1900Mhz G Block
Band 31– 450Mhz
Andra FDD band...

4G TDD LTE (TD-LTE):
Band 41 – 2500/2600Mhz
Band 40 -- 2300Mhz
Band 39 – 1900Mhz
Band 38 -- 2600Mhz
Andra TDD band...

*Continued...*

Note: There are many different bands and frequences for 4G LTE. Give detailed band and frequency before ordering.

**Broadband**
4G LTE:
FDD LTE: 100Mbps downlink, 50Mbps uplink;
TDD LTE: 150Mbps downlink, 50Mbps uplink;

DC-HSPA+: Downlink 42Mbps, Uplink 5.76Mbps;
HSPA+(H): Downlink 21Mbps, Uplink 5.76Mbps;
HSPA+(L): Downlink 14.4Mbps, Uplink 5.76Mbps;
HSUPA: Downlink 7.2Mbps, Uplink 5.76Mbps;
HSDPA: Downlink 7.2 Mbps, Uplink 384k bps;
WCDMA/UMTS: Downlink/Uplink 384 kbps;

EDGE: Downlink 384 kbps, Uplink 118 kbps;
GPRS: Downlink 108 kbps, Uplink 42.8 kbps;

CDMA1x: Downlink/Uplink 153.6kbps;
CDMA EVDO:

Rev B: 14.7Mbps downlink, 5.4Mbps uplink
Rev A: 3.1Mbps downlink, 2.4Mbps uplink
Rev O: 2.4Mbps downlink, 153.6kbps uplink

3G TD-SCDMA: 2.8Mbps

Note: The broadband is highest value. Actual value depends upon the network supplier.

**Network and band, locking function (optional)**
Default value is UNLOCKED, can be used to lock.

### Main functions and performance

**USB-entry** NO

**SMS and SMS / Voice Control and Alarm**
Send and receive SMS;
SMS / Voice Control and alarm. SMS or call to the router to get online, offline, restart, signal clay and status display; SMS is the default value, voice is optional.

**GPS (Optional):** GPS feature

### DTU (Optional)

With the DTU-function (Serial to Mobile Gateway function RS232 or RS485 port option).
Details:
Serial transmission: 300bps, 600bps, 1200bps, 2400bps, 4800bps, 9600bps, 19200bps, 38400bps, 57600bps, 115200 bps;
Seriell parity: none, even, odd;
Serial Data Bits: 7, 8;
Serial Stop Bits: 1, 2;
Serial flow control: none, hardware, software;
Location: Server (up to 4 server center, OEMs can be more), client;
Protocol: TCP, UDP;
Heart Beat: Yes;

### VPN

PPTP, L2TP, IPSec, GRE, Tunnel (PPTP Server, PPTP client, L2TP client, IPSec client, IPSec server)

### OpenWRT: Optional

### VRRP: Optional

### Router

Static router;
Optional for dynamic Router (BGP, BGPD, OSPF, Zebra, Rip);

### SNMP: Supports V1, V2, V3

### VLAN: Supports multi-LAN IP address, supports two IP addresses

### WI-FI (WLAN)

Optional, 802. 11b/g/n; 150Mbps default. 300Mbps optional.
Can be used as AP and client.
Frequences from 2.4 GHz to 2.483 GHz, APs, Routers and Gaweway Server use, wireless up to 254 PC users..

### Fail Over Redundancy

Automatic call-up, maintain the link open.

### Network-backup

LCP, ICMP control;
Build-in watch dog;
Mobile (2G/3G/4G), RJ45 WAN (xDSL, DHCP, Fast IP), WiFi client three-line redunance;
Two H685 dual sim same network (Network 1 + Network 1);
Two H685 dual sim Two network (Network 2+ Network 2);
Two H685 dual sim dual mode network (WCDMA+CDMA2000, WCDMA+LTE, CDMA2000+LTE);

Cold Backup is default. Hot Backup optional;
Cold Backup=WAN RJ45 and mobile WAN, not online at the same time. One online and the other standby, switch free..;
Hot Backup= WAN RJ45 and mobile WAN is online. Data enters the main line and switch to the other line. Alternating time for hot backup is shorter than Cold Backup.

### POE

POE for LAN/WAN RJ45 (used with POE adapter)

### Update of build-in software

Supports update of build-in software locally or remote (LAN, WiFi and OTA WAN)

### Syslog: Local and remote

### DDNS: Yes

### DHCP Server: Yes

### Others:

DNS Proxy;
Optimized EMC design;
Real-time clock (NTP, supports update with defined hours);
WAN/LAN/Memory statistics
Local/REmote profiles backup and receiving
**Administration system** Optional

## Protocol

### Protocol support

TCP, UDP, SMTP, POP, ICMP, FTP, PPP, PPP, PPPoE, DHCP, DDNS, DNS, WPS, DMZ, NAT, Xdsl, ntp, qOs, ect

# H685 MOBIL ROUTER

# H685 MOBIL ROUTER

## Safety

### Firewall

Supports 64/128 bits WEP, 802.1x, WPA, and WPA2
Supports WDS
Supports WPA1/2 – PSK
Supports WPA1/2 – 802.1x
Supports EAP – TLS, TTLS, LEAP, PEAP
TKIP, AES encryption
Supports access with username & password
Supports access to the control unit WAN/LAN interface
Supports access to the control units source, IP-adress.
Defense DOS attack, supports SYN flooding, IP surfing, ping of Death, fragile, teardrop, land etc.
Support PAP & CHAP
Supports IP filtering
Supports content filtering.
Supports NAT/NAPT/Port forwarding/DMZ

### Advanced firewall features

Stateful Packet Inspection (SPI)
VPN Pass-through

**Certificate:** REDIUS client

## Interface

### LAN/WAN

1X 10/100M LAN port (RJ45 interface)
1X 10/100M WAN port (RJ45 interface)
(WAN RJ45 can be converted to LAN RJ45 to get 2 LAN RJ45)
WAN ports supports mobile/static IP/DHCP/PPPoE
(on request, keep alive, schedule, manual)

### Antenna

2 antennas for Wi-Fi (removable, SMA interface * 1, Internal *1)
3 antennas for mobile and GPS (removable, 50Ω SMA female interface), Cellular support diversity receiving (MIMO) option

### Led

SYS*1, VPN*1, Cell Signal*1, Cell*1, WAN*1, LAN*1, WiFi*1

**Button:** Reset

**Console:** 1 console port

**Serial port:** RS232 or RS485 build-in terminal block interfcace

Is a solid, gear box heaters with high perfor-
mance, made to counter condensation in large
equipment, control cabinets and switchboards.

An aluminum housing and a large number of
profiles provides optimal heat transfer.

The unit is controlled via an internal thermostat
- Starts at ca 28 ° C (the unit's own tempera-
  ture)
- Closes at approx. 68 ° C (the unit's own tem-
  perature) (can be altered at factory)

Cord crip from Metall

## Technical data

Performance (P1) ................................. 110 – 250 Watt

Connection...Silicone cable 3 x 0.75mm² (UL/CSA:
........................................ 3x1mm²) or plug connection

Voltage ..................................................... 220-240 VAC
...................................................... 110 – 265 V AC/DC
.............................................................. 12 – 60 V AC/DC

Dimension ........................................ 203 x 80 x 55mm
Mounting ................. snap fittings for top rail 35mm
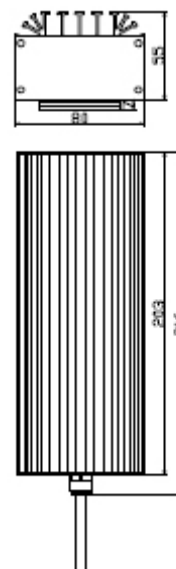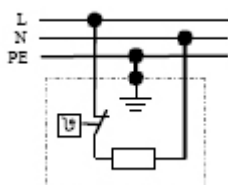
The small thermostats are particularly suitable for the use in switchgear cabinets and/or into other closed housings.

Type "THK", used for the control of cooling, exhaust or as signal generators.

Type "THH", finds employment as control for heaters or for switchting signal devised.

## Technical data

Voltage....................................................24...240 V AC

Setting range..................................................... 0-60°C
.......................... (other settings possible: -20...40°C)

Enclosure ................................. IP30 Plastic UL94 V-0

Contact.............................................TH-K: Open -NC
.........................................................TH-H: Closed-NO
.............................................................................Bimetal

EMC............................................................EN55014-1-2
...........................................................................EN61000-3-2
...........................................................................EN61000-3-3

Max. Switching capacity ................. 10A (1) AC 250V
......................................................................... 12-24 V DC
.............................................................................. max. 5A

Mounting.................................................Snap contact

Dimensions......................................... 60 x 32 x 43mm

Weight...................................................................... 44g

The Hygrostat "HY/WE" is an electromechanical regulator for relative humidity. The hygrostat does not require any power supply. The switch contact can be directly used for control of electric loads.

The switch point setting (10% to 80 % rH) is done by a rotary switch.

At the end position, the switch is always closed or open, independent of the air humidity value.

## Technical data

Voltage ..................................................... 24...240V AC

Setting range 10 – 80% Rel. Atmospheric humidity

Mounting ............. Snap contact for DIN-Rail 35mm

Switching current ............................... Humidity: 2,2 A
.................................................................. Dehumidity: 5A

Enclosure ............................... IP30 Plastic UL94 V-O

Contact ......................................... change-over switch

Dimension ......................................... 60 x 95 x 45mm

Radio interference ................................ N (VDE 0875)
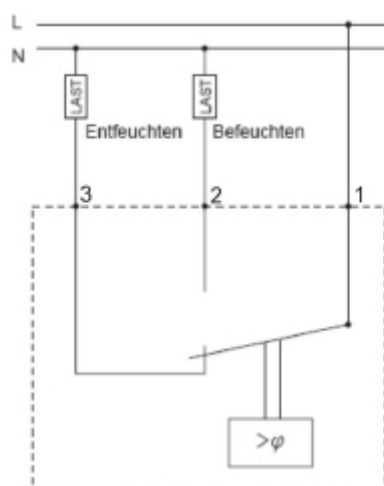
- Quickly connected
- Available with or without fuse
- Clip fixing

The DIN-rail mounted electrical socket can be quickly fitted and connected in enclosures allowing the use of auxiliary products such as hand l amps, measuring devices, soldering irons etc. The unit is available with and without fuse and in all major world socket standards.

## Technical data

Connection:...............................3x pressure lamps for ..........................stranded and rigid wire 0.5-2.5mm²
Mounting:............clip for 35mm DIN-rail, EN50022
Casing:............................ plastic UL94 V-0, light grey
Dimensions:........................................ 92 x 62 x 48mm
Weight:......................................................approx. 0.2kg
Fitting position: ..................................................variable
Operating/Storage temp: ...................... -40 to 60°C
Prot.type/prot.class:..........................IP 20/I (earthed)
Approvals:-/- (USA/canada only: UL File E222026).

| Socket | Operating voltage max | With fuse/ Art.no/nom current | Wo fuse Art.no/nom. Current |
|---|---|---|---|
| Germany | AC 250V | 03500.0-00/6.3A | 03500.0-01/16A |
| France | AC 250V | 03501.0-00/6.3A | 03501.0-01/16A |
| Switzerland | AC 250V | 03502.0-00/6.3A | 03502.0-01/10A |
| GB/Ireland | AC 250V | 03503.0-00/6.3A | 03503.0-01/13A |
| USA/Canada | AC 125V | 03504.0-00/6.3A | 03504.0-01/15A |
| Italy | AC 250V | 03505.0-00/6.3A | 03505.0-01/16A |

[1] Fuse Ø 5 x 20mm

| Tyskland | Frankrike | Schweiz | UK | USA/Ka- |
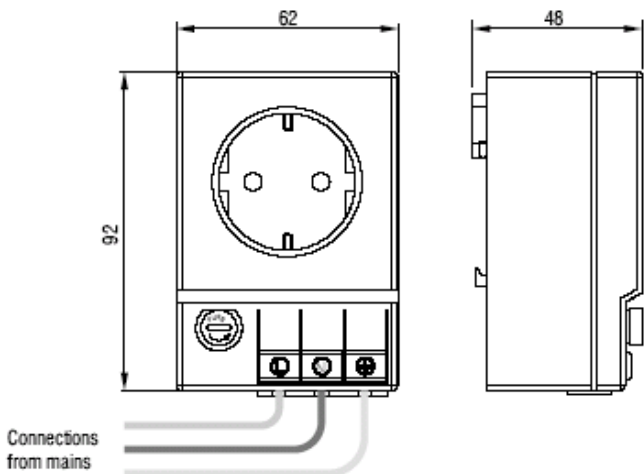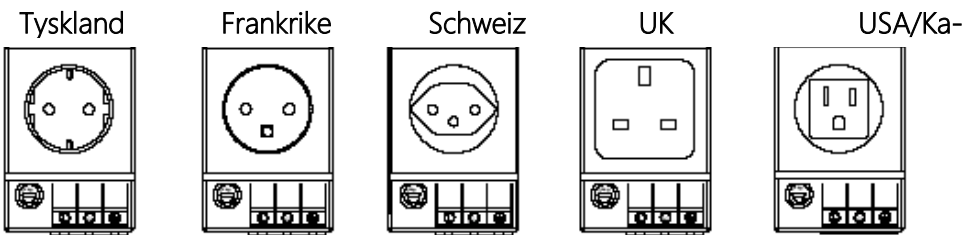
- Can be used i n every part of the world thanks to its wide input-voltage range and to it having been tested and assessed by international agencies (EN/CE/UL)

- Stable and short-circuit proof output with adjustable output voltage

- Over-voltage protection, primary and secondary

- DIN-rail mounting is as easy as could be

- Compact dimensions and low weight

- Wide temperaturer ange, with over-temperature protection

- Very good price/performance relation

- A good choice for power distribution applications in building automation and for switch-cabinet installations in automation engineering

## Technical data

Brief description Single-phase power unit 24 V/1A

**Input**

Input voltage range ........................... 85 – 264 V AC
................................................................ 120 -370 V DC
Input current ............................................ 0,88 A/115 V
......................................................................0,48 A/230 V

**Output**

Rated output voltage ......................... 24 V DC ± 1%
Output voltage setting range ......21,6 V DC ... 26,4 VDC
Rated output current .....................................1,5 A DC

**General data**

Temperature
range........ -20...+60°C from 50°C derating -2% /K
Over-temperature protection.................................. -
efficiency .........................................83 % at 100% load
Safety ....................UL60950-1, EN60950-1, EN50178
............................... (See special technical data sheet)
EMC........................See special technical data sheet
Dimensions (W x H x D).......78 x 93 (103) x 56 mm
Weight....................................................................235 g

## Uppbyggnad



## Dimensions
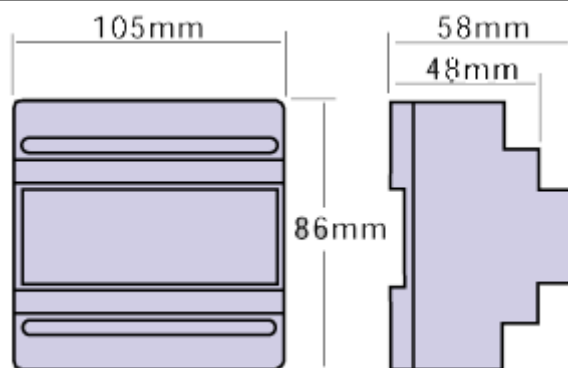
- Only 45mm wide
- Input: 120/230 VAC
- Internal fuse
- Mains buffering 40ms
- Overtemperature protection
- Overvoltage protection primary and seondary
- Can be operated in any assembly position

### Input

Input voltage range.................AC 180 – 264 V, 50/60 Hz
.........................Mechanical switchover to AC 90-132 V >
Efficiency.........................................................> 87%
Input current -......................$\leq$ 25 $A_{peak}$ typ – in cold state
limit...........................................$\leq$ 50 $A_{peak}$ typ – in hot state
Internal fuse .........................................6.3 AT 250V

### Output

V0 Tolerance ........................................ +3% /-0%
Operation indicator .............................green LED
Ripple........................................... < 30mV vid 0°C
Noise voltage .........................................< 120 mV
Temperfature coefficient.....................0.025%/K
On/Off...................................no V0  overshoot (soft-start)
Start-up delay .............................................< 30ms
Strength against reverse-voltage...................... < 35 VDC
Parallel connection ............................................. no

### Regulation

Line regulation...................< 0.2% for V0 at $Vi_{min}$ - $Vi_{max}$
Load regulation .................. < 0.5% for V0 at I0 0 – 100%
Response time................................... < 1ms at lo 20- 80%

### Protection and controlling

Overvoltage protection........................105 – 125 % $Ua_{max}$
Current limitation ...............................105 – 140% i
Overtemperature protection ......................Switches off if
................................ inside temperature becomes to high,
......................................................................automatic restart.
Mains buffering............................................> 30ms

### EMC

Mains feed back .....EN 61000-3-2 Class A external PFA
Flicker.............................................EN 61000-3-3
Interference suppression/.........EN61000-6-2 Intensity 4
Interference emission..EN61000-4-2 Noice level 10V/m
.......................................................EN61000-4-3 Intensity 4
.......................................................EN61000-4-4 Intensity 4
.......................................................EN61000-4-5 Intensity 4
..............................................EN61000-4-6 Noice level  10V
...............................................................................EN61000-4-11
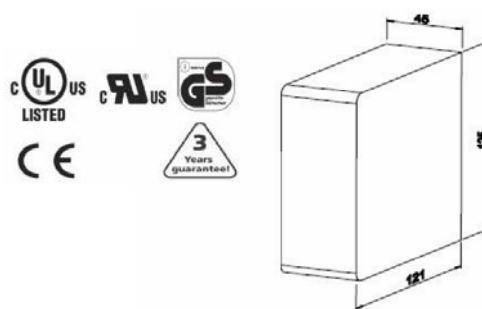


Dimensions (LxWxH): 121 x 45 x 125 mm

*The distance between the surrounding components and the air admission and air exit holes should be at least 20mm. Please ensure that exhaust air is not immediately sucked in again.*

Interference emission............................ EN61000-6-3
.......................................................... EN55022 Class B
.................................Emission depends on mounting

### Safety

................. IEC 60950, EN 60950, VDE 0805 Safety class1
.........................UL508-listed/ UL 60950/CSA 22-2-60950,
.................................................SELV according to EN 60950

Ensure fire protection by means of the surrounding housing system.

### Operating data

Temperature range......................................-25°C to 70°C,
..................................... integral fan, air intake bottom up.
Derate ...............................2.5%/K at +80°C (see drawing)
Weight .............................................................................0.6kg

### Mekanichal

Connection........... Mains power intake: 3-pole terminal,
............................................................ connectable RM 7.62

Charging socket: 4-pole terminal, connectable RM 5.08

Mounting: ....All systems can be fixed on a symmetrical DIN-rail according to 50022 with a diameter of 1 to 2.5 mm or be screwed directly on to the wall. Kindly note installation conditions.

Technical data

Standards.............................................................................AS/NZS 61009-1

Magnetic tripping characteristics .........................................................B, C

Residual tripping characteristics ..........................................................A, AC

Rated current (A) .........................................................6, 10, 16, 25, 32, 40

Rated residual current..............................................10mA, 30mA, 100mA

Calibration temperature .........................................................................30°C

Rated voltage 1 P.....................................................................................240V

Frequency .................................................................................................50/60

Max. Service voltage................................................................................ 264

Tripping duration.................................................................Instaneous 0.1s

Power supply ........................................................................ Top or bottom

Selectivity class ........................................................................................... 3

Residual making and breaking capacity........................................... 2000A

Short circuit capacity ................................................................................ 6000A

Isolation application (IEC 60947-2)..........................................................Ja

Insulation resistance (Mohm) ..............................................................1,000

Insulation voltage (V).................................................................................500

Dielectric rigidy (V) ...............................................................................2,500

Vibration resistance.................................................................................. 1.5g

Endurance (operations) electrical ....................................................>6,000

Mechanical ...........................................................................................>20,000

Protection degree outside ......................................................................IP20

Inside enclosure ........................................................................................IP40

Self-extinguishing degree (UL 94) ...........................................................V2

Tropicalisation (IEC 60068-2) ........................................... +55°C/95% RH

Operating temperature ................................................................-5/+55°C

Storage temperature...................................................................-25/+70°C

Terminal capacity (top & bottom) min / max.............................1-16mm

Terminal torque (top/bottom) .....................................................................3

Busbar systems..........................................................................................Yes

Accessories.................................................................................................. No

Dimensions (mm) ...............................................................H72 x L81 x B18

Weight (g)...................................................................................................105
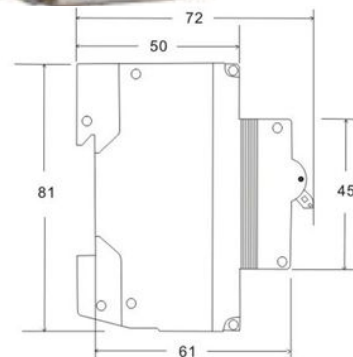
## Range of application

Extension cable.
Fabricate: Velox
Delivery: ready-made lengths of 5-10-25-50-100m.

## Technical data:

Conductor: ....................... +Pol NiCr 1.00mm² (32x0,20mmØ)

........................................................... -Pol Ni 1,00mm² (32x0.20 mmØ)

Outer insulation: ....................... PVC, Wdd.-0,40mm

Colour code: .................................... + green, - white

Sheath: ..................................... PUR, Wdd. – 0.80mm

Colour: ................................................................ Green

Outer Ø: ............................................................. 5.4mm

Rated voltage ............................................. max. 600V

Testvoltage ....................................................... 2000 V

Temperature range: .............................. 5°C - +70°C

Tolerance: .... acc. IEC 584, Sheet 3, Kl 1 ±60μV(±1,5 K)

## Order information

Part.no: ............................................................ 3950110X
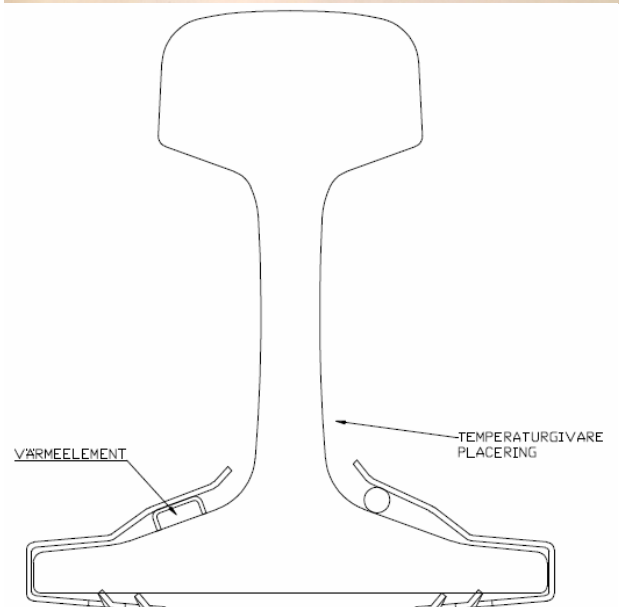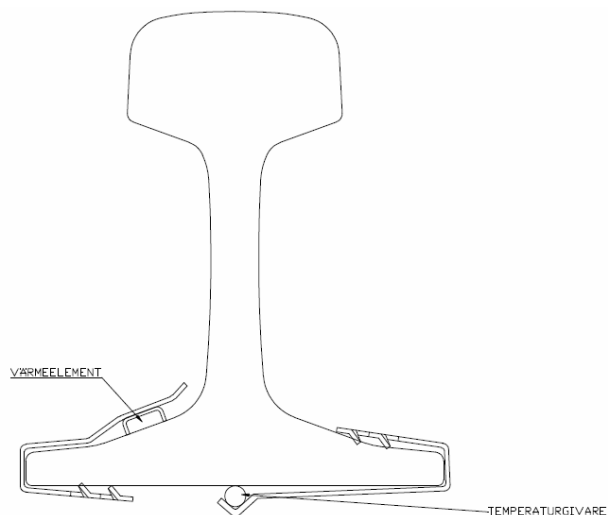
Description: ......................... Thermoelement Type K

## Uppbyggnad



Temperaturgivare Ø 8mm

# Notes

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