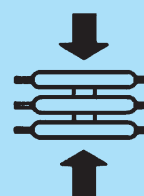
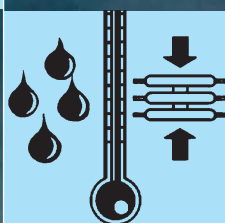
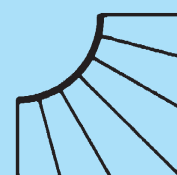
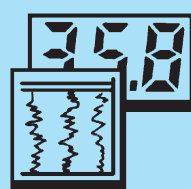
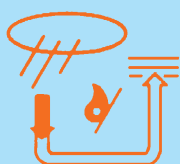
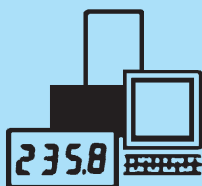
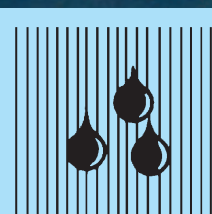


Precipitation



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Glossary

Precipitation	Any and all forms of water particles, liquid or solid, that fall from the atmosphere and reach the surface.
Dew Point	Indicates the temperature, where the saturation limit is reached - under cooling down of the air – and where dewing starts.
Evaporation	The loss of a certain water quantity, caused by a change of its aggregate state into gaseousness, under temperature influence.
Precipitation Quantity	The totality of the fallen liquid or solid precipitation. Indicated in mm, i.e. 1mm of precipitation = 1 litre per square meter .
Precipitation Meter	Generally for a precipitation collecting instrument, the collected quantity of which is measured by means of a measuring receptacle.
Precipitation Transmitter	Generally for a precipitation measuring instrument with electrical output. Here, an impulse is delivered for a defined precipitation quantity as output value.
Precipitation Recorder	Generally for a precipitation measuring instrument with mechanical recording of the collected precipitation quantity.
Snow Cross	Inset for precipitation meters. Avoids losses of snow in the precipitation funnel due to wind vorticities.
Rain	Water drops with a diameter of > 0,5 mm, falling down from the atmosphere
Drizzle	Water drops with a diameter of > 0,5 mm, falling down from the atmosphere.
Hail	Balls of ice with a diameter of approx. > 5 mm, falling down from the atmosphere.
Snow	Down-falling snow crystals, single or sticking together.
Precipitation Intensity	The fallen precipitation quantity within a certain time period (e.g. mm/min)
Droplet	A nozzle where the liquid precipitation is passed through, and dripped off in a defined drop size. This procedure achieves a high resolution for the precipitation measurement (e.g. 0,005 mm)
Tipping Bucket	The collected liquid precipitation is led into a tipping bucket which tips over at a certain weight. The tipping over corresponds to a defined precipitation quantity (e.g. ≥ 0,1 mm)
Evaporation Calculation	Mathematical calculation of the evaporation with different parameters :
<i>acc. to Haude</i>	Day's value of evaporation from temperature and rel. humidity
<i>acc. to Wendling</i>	Hourly value of evaporation from temperature, rel. humidity, wind speed and radiation
<i>acc. to Penman-Monteith</i>	Day's value of the reference evaporation from temperature, rel. humidity, wind speed and radiation
<i>acc. to Richter</i>	Day's value of evaporation above water from wind speed, water surface temperature, rel. air humidity and air temperature
Guidelines	VDI 3786, Part 7 Meteorological Measurements, Precipitation DIN 4049, Part 101 Hydrology, Terms for precipitation and snow



Precipitation Transmitter
with electrical output for automatic data acquisition.

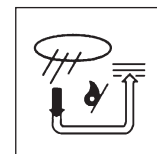
Rain Monitor
with electrical output for acquisition of precipitation periods or control of protecting devices.



Precipitation meter
for the mechanical acquisition of the precipitation for determining the water entry, e. g. in soil, artificial lakes, ponds etc.



Evaporation pan (Class A)
with a **evaporation transmitter**
for calculation of precipitation, e. g. in the agricultural field



Model Brief Description	Order No.	Technical data
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Mechanical Precipitation Meter

Precipitation Meter

acc. to Hellmann

This meter meets the requirements of the German Weather Bureau.

The precipitation is collected in a vessel and then measured in litres in the measuring cylinder.

Consist of :

- 1 upper part
- 1 lower part
- 1 collecting can
- 1 support
- 1 measuring cylinder

5.4000.00.000

Meas. cylinder

200 cm³ ± 10 mm
precipitation
0,1 mm precipitation
200 cm²
1,4 l
acc. to DIN 58666 C
stainless steel
Ø 190 x 450 mm
3,2 kg

Graduation
Collecting area
Collecting can
Model
Material
Dimension
Weight



Rain and Snow Meter

acc. to Hellmann

Described as above, with additional parts :

- 2 snow crosses
- 1 cover
- 1 upper part
- 1 lower part
- 1 collecting can

5.4001.00.000

Model

acc. to DIN 58666 D
as preceding
stainless steel
stainless steel
Al, anodized
PE
6,5 kg

Material case
Snow cross
Cover
Collecting can
Weight



Rain and Snow Meter

acc. to Hellmann
small-size model

Same measuring principle as with 5.4000.00.00, but smaller housing with smaller collecting area.

The precipitation is collected directly in the measuring receptacle.

5.4005.00.000

Meas. cylinder

250 cm³ ± 25 mm
precipitation
1 mm precipitation
100 cm²
Ø 120 x 255 mm
1,25 kg

Graduation
Collecting area
Dimensions
Weight



Accessories

Snow Cross

Is put into the collecting funnel of the precipitation meter or Rain and Snow meter in order to avoid losses caused by snow vortices.

502506

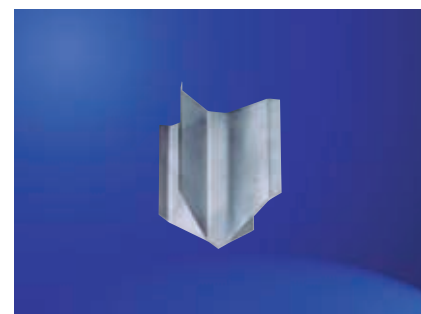
for
Material
Dimensions
Weight

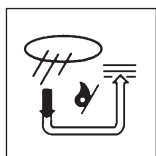
5.4000.. / 5.4001...
stainless steel
150 x 150 x 240mm
0,25 kg

502507

for
Material
Dimensions
Weight

5.4005.00.000
stainless steel
100 x 100 x 200 mm
0,15 kg





Precipitation

- 4 -



Model Brief Description	Order No.	Technical data	
Measuring Cylinder 10 for 5.4000... / 5.4001... acc. to DIN 58667 B	210248	Measuring range Graduation	0 ... 10 mm precipitation 0,1 mm precipitation
Measuring Cylinder 25 for 5.4005.00.000	210249	Measuring range Graduation	0 ... 25 mm precipitation 1 mm precipitation

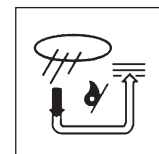
Mechanical Precipitation Recorder



Precipitation Recorder acc. to Hellmann	5.4010.xx.000 5.4011.xx.000 .10. .16.	Recording time 7 days 24 hours Heating Heating	Thrust 55 mm / day 16 mm / hour none 42 V AC / 250 VA
A standard mechanical precipitation measurement instrument employed in meteorology acc. to VDI 3786, p. 7. Except for the heating system, this instrument requires no additional auxiliary power. The instrument case is made of stainless steel.		Collecting area Collecting height Recording width Graduation Transport mech.	200 cm ² 1,0 m 80 mm ± 10 mm precip. 0,1 mm precipitation drum clockwork acc. to DIN 58658
		Collecting can Ambient temp.	2,75 l 0 ... + 60°C (w/o. heat.) - 20 ... + 60°C (w. heat.)
		Dimensions. Weight	Ø 370 x 1000 mm 13 kg

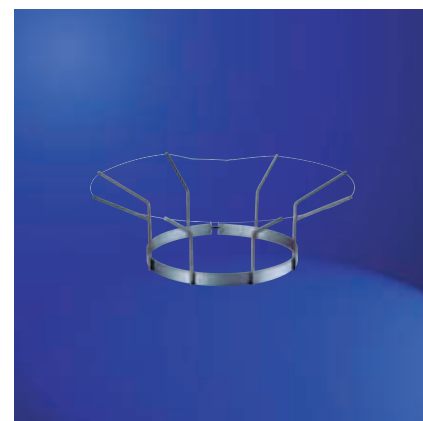


Precipitation Recorder acc. to Hellmann	5.4015.xx.000 5.4016.xx.000 .10. .16.	Thrust Thrust heating heating	10 mm / hour 20 mm / hour none 42 V AC / 250 VA
A standard mechanical precipitation measurement instrument employed in meteorology acc. to VDI 3786, page 7. Except for the heating system, this instrument requires no additional auxiliary power. The instrument case is of stainless steel.		Collecting area Collecting height Recording width Graduation Transport mech. Recording time Collecting can Dimensions. Weight	200 cm ² 1,0 m 80 mm ± 10 mm precip. 0,1 mm precipitation strip chart 31 days ca. 2,75 l Ø 485 x 1000 mm 21 kg



Model Brief Description	Order No.	Technical data
Accessories		
Recording chart (not depicted) For 5.4010... / 5.4011... (1 set = 100 pcs)	205243 205245	Recording time 7 days 24 hours
Recording Roll For 5.4015... / 5.4016...	205247 205248	Thrust 10 mm / hour 20 mm / hour
Felt pen (not depicted) For all Thies precipitation recorders	500847	Recording time 31 days Colour violet

Device to Refuse Birds Protection against bird droppings for the collecting funnels of the above precipitation recorders. Refuses birds on the edge of the collecting funnel	5.4010.00.010	Material Clamping diameter Dimensions Weight stainless steel Ø 160 Ø 360 x 100 mm 0,32 kg
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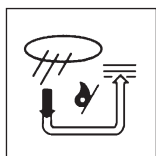
Power Supply Unit Power supply unit to provide power to the heating of the preceding precipitation recorder.	5.3288.20.000	Primary voltage Secondary voltage Fuse Type of protection Dimensions Weight 230 V / 50 Hz / 2 A 42 V / 300 VA / 8 A primary and secondary IP 65 125 x 157 x 125 mm 5,5 kg
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Precipitation Transmitter

Ombrometer The measuring receiver transmits the values measured for amount and intensity of precipitation. Depending on the maximum possible intensity, either drops are counted or the turnovers of a tipping bucket are counted or a combination of both these measuring principles is employed. The collecting funnel is of zinc-plate and the cover is made of stainless steel grey varnished. The heating system is regulated by a thermostat.	5.4031.xx.000 .11. .31. .51.	Meas. principle Dropper Tipping bucket Combination Collecting area Resolution Electr. output Heating Ambient temp. Operating voltage Housing Mounting Dimensions Weight Intensity max. 2 mm/min. max. 10 mm /min. 2 mm/min., 10 mm/min. 200 cm² 0,005 mm (dropper) 0,1 mm (tipping bucket) Imp. 5 V, 15 mA (TTL) 70 W; 24 V AC/DC -25 ... +60°C 8 ... 29 V AC / 60 mA or 10 ... 38 V DC / 50 mA stainless steel, varnished onto a mast Ø 50 mm Ø 225 x 480 mm 6,5 kg
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- 6 -

Precipitation



Model Brief
Description

Precipitation Transmitter with Reed-Contact

The measurement receiver transmits the amount and intensity of precipitation electrically. A tipping bucket, the turnovers of which are recorded by a Reed-contact, serves as the measured value transmitter. The heater is regulated electronically.

Order No.

5.4032.30.007
.008

Technical data

heating	none
heating	70 W ; 24 V AC/DC
Collecting area	200 cm ²
Resolution	0,1 mm precipitation
Intensity	max. 7 mm/min.
Meas. principle	tipping bucket
Electr. output	Reed contact
Contact load	max. 42 V DC max. 0,5 W
Ambient temp.	- 25 ... + 60°C w. heating 0 ... + 60°C w/o. heating
Housing	stainless steel
Mounting	onto a mast Ø 50 mm
Dimensions	Ø 186 x 445 mm
Weight	3,3 kg



Precipitation Transmitter

Measurement sensor for precipitation quantity and -intensity for the analogue transmission of measuring values.

The tips of a tipping bucket are detected by a Reed contact. The pulses induced are cumulated in the electronics and is output as analogue signals corresponding to the measuring range. The measuring range is codeable by a DIP-switch.

The heating is regulated electronically.

5.4033.30.xxx
.31.
.040
.041
.061

heating	70 W ; 24 V AC/DC
heating	none
Electr. output	0 ... 20 mA (< 500 Ω) 4 ... 20 mA (< 500 Ω) 0 ... 10 V
Meas. range 1	0 ... 10 mm (0,1)
Meas. range 2	0 ... 25 mm (0,1)
Meas. range 3	0 ... 20 mm (0,2)
Meas. range 4	0 ... 50 mm (0,2)
Collecting area	200 cm ²
Resolution	0,1 resp. 0,2 mm
Intensity	max. 7 mm/min.
Meas. principle	tipping bucket
Operating voltage	24 V AC/DC or 10...18 V DC w/o heating - 25...+ 60°C w. heating 0...+ 60 °C w/o heating
Ambient temp.	
Housing	stainless steel
Mounting	onto a mast Ø 50 mm
Dimensions	Ø 186 x 445 mm
Weight	3,3 kg



Precipitation Transmitter with Datalogger DL 1/N

The instruments serves for the measurement of the precipitation falling on the ground surface. The precipitation is detected through a tipping bucket forming and sending an electric pulse. This pulse is stored in the integrated data logger together with date and time. The stored data can be interrogated either directly via serial interface, or can be read-out through a memory card, and then processed with a PC-software. Instrument without heating, with battery operation.

5.4031.xx.010
.30.
.36.

Heating	none
Heating	42 V; 250 VA
Collecting area	200 cm ²
Collecting high	1,0 m
Resolution	0,1 mm precipitation
Intensity	max. 7 mm/min.
Operating voltage for datalogger	4 x 1,5 V Mignon cells and / or (extern) 7...20 V DC ; 6...12 V AC
Datalogger	
Storage interval	1...30 min ; 1...24 h or event depending RS 232 (9600 baud) or Memory card
Data output	
Memory capacity	9289 data sets
Display	LCD display
Collecting can	4,5 l
Dimensions	Ø 370 x 1000 mm
Weight	13 kg



Model Brief Description	Order No.	Technical data	
Precipitation Recorder LWA The measuring instrument is equipped with a float chamber, with mechanical chart recording, and with electric scanning of the tipping bucket. The double acquisition of measuring values – mechanical and electronic – provides a big security in the data acquisition. The model of the instrument is acc. to VDI 3786, p. 7. Delivery with device to refuse birds.	5.4045.31.002	Output Collecting area Collecting height Meas. System 1 Resolution Electr. output Meas. System 2 Recording Recording width Thrust Graduation Housing-Model Heating Operating voltage Ambient temp.. Collecting can Dimensions Weight	Recording, Pulse output 200 cm ² 1,0 m tipping bucket 0,1 mm precipitation 1 pulse / 0,1 mm precip. Float chamber Chart recorder, 31 days 80 mm / 10 mm precip. 10 mm/min. 0,1 mm acc. to Hellmann stainless steel 42 V AC / 290 VA 42 V AC - 25 ... + 60°C ca. 5,5 l Ø 485 x 1000 mm ca. 22 kg

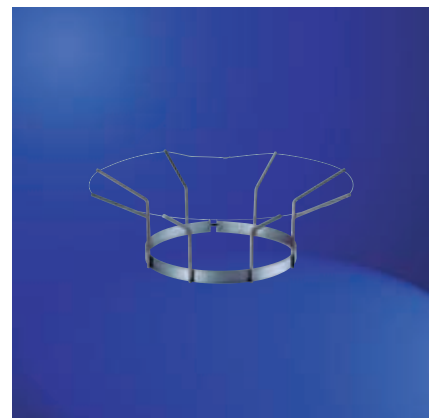


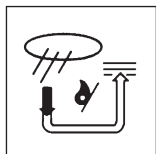
Precipitation Transmitter LWA with Datalogger The measuring instrument is equipped with a float chamber, with mechanical chart recording, and with electric scanning of the tipping bucket. The acquisition of the measuring values of the tipping bucket is stored in an integrated data logger together with the station name, date and time. The output is done via serial interface or, alternatively, in a memory card. The model is acc. to VDI- 3786, page. 7. Delivery with device to refuse birds.	5.4045.31.115	Collecting area Collecting high Meas. system 1 Resolution Meas. system 2 Graduation Recording Thrust Recording width Data logger Storage cycles Data output Memory capacity Display Operating voltage Housing-Model Heating voltage Operating voltage Ambient temp.. Collecting can Dimensions Weight	200 cm ² 1,0 m Tipping bucket 0,1 mm precipitation float chamber 0,1 mm precipitation Chart recorder, 31 days 10 mm/min. 80 mm / 10 mm precip. 1...30 min. ; 1...24 h or event depending RS 232 (9600 Baud) or Memory Card 9289 Data sets LCD Display Internal 4 Mignon cells acc. to Hellmann stainless steel 42 V AC / 290 VA 42 V AC -20 ... +60°C approx. 3 l Ø 485 x 1000 mm ca. 26 kg
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Accessories for Precipitation Transmitter

Device to Refuse Birds Protection against bird droppings for the collecting funnels of the above precipitation recorders. Refuses birds on the edge of the collecting funnel.	5.4031.11.010	Material Clamping diameter Dimensions Weight	stainless steel Ø 225 mm Ø 380 x 100 mm 0,41 kg
Device to Refuse Birds For Precipitation Transmitter (LWA , DL 1N).and Precipitation Recorder LWA.	5.4010.00.010	Material Clamping diameter Dimensions Weight	stainless steel Ø 186 mm Ø 360 x 100 mm 0,32 kg





Precipitation

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Model Brief Description

Stand

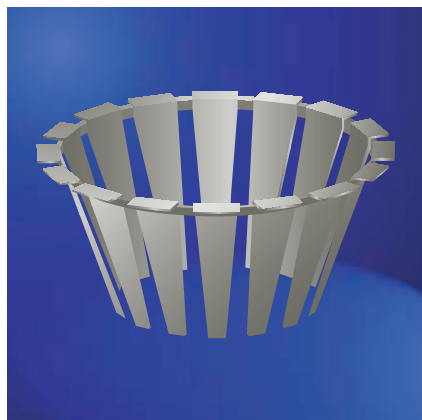
Used to mount the preceding Ombrometer, resp. Precipitation Transmitter. The collecting area can be elevated to a height of 1; 1,2 or 1,5 m. For installation of stand a base plate of 550 x 550 mm is necessary.

Order No.

9.4031.35.xxx
.36.xxx
.065
.085
.115

Technical data

Material	steel, zinc plated stainless steel
Collecting height	1,0 m 1,2 m 1,5 m
Total length	0,60 m, 0,8 m resp. 1,15 m
Tube diameter	48,3 mm
Mounting distance.	450 mm
Weight	ca. 6,5 kg., 7,5 kg., 8,5 kg



Wind Protection Element

Used to collect non-turbulent precipitation in wind conditions. Suitable for the preceding Ombrometer and Precipitation Transmitter.
Is to mount at the Stand,
(see Order.-no. 9.4031.35....).

5.4032.00.000

Material	stainless steel
Diameter	max. 1,0 m
Length of Vanes	520 mm
Weight	18 kg



Power Supply Unit

Provides power, for Ombrometer and precipitation transmitter. The primary and secondary voltages have separate fuses. Synthetic case.

9.3388.00.000

Primary voltage	230 V / 50 Hz
Secondary voltage	26 V AC / 3,46 A 24 V AC / 0,5 A 12 V DC / 0,3 A
Protection	IP 65
Dimensions	125 x 125 x 125 mm
Weight	2,5 kg



Power Supply Unit

Provides power, for the heating of the preceding Precipitation Transmitter LWA. The primary and secondary voltages have separate fuses. Synthetic case.

5.3288.20.000

Primary voltage	230 V / 50 Hz
Secondary voltage	42 V AC / 300 VA
Protection	IP 65
Dimensions	125 x 175 x 125 mm
Weight	5,5 kg



Model Brief Description

Power Supply Unit compact

Used for the power supply of the Ombrometers and precipitation transmitters. The primary and secondary voltages are protected by fuses.
A terminal strip is integrated additionally for the connection and distribution of the measuring cables.

Order No.

9.3389.00.000

Technical data

Primary voltage 230 V / 50/60 Hz / 0,48 A
Secondary voltage 2 x 24 V AC / 20 VA
1 x 24 V AC / 5 VA
1 x 24 V AC / 70 VA
1 x 24 V DC / 2 VA
Clamp distributor 20 pole
Housing synthetic
Protection IP 65 for housing
Dimensions 190 x 280 x 130 mm
Weight 4,2 kg



Measuring Transducer

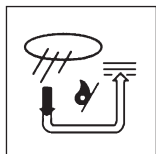
Measuring Transducer NS

The impulses from the Ombrometer or Precipitation Transmitters are totalled in accordance with the coded measuring range and converted into a current and/or voltage signal. The output is pending proportionally, and constantly to the precipitation pulses. After reaching the final value of the measuring range the measuring transducer is reset automatically. The function of a reset can also be triggered externally. The wall mounting case is designed for mounting to a plane wall, the PC-board for insertion in a 19" board rack.

5.4037.xx.xxx
.00.
.10.
.040
.041
.040
.061
.080
.081
.100
.101

Model Wall case
PC board
Electr. output 0 ... 20 mA (600 W)
4 ... 20 mA (600 W)
0 ... 1 V (max. 10 mA)
0 ... 10 V (max. 10 mA)
0 ... 20 mA/0 ... 1 V
0 ... 20 mA/0 ... 10 V
4 ... 20 mA/0 ... 1 V
4 ... 20 mA/0 ... 10 V
Measuring range 10; 20; 40; 50; 80; 100
(adjustable) 160 mm precipitation
Input 5 V - pulse
Operating voltage 230 V / 50 Hz
Ambient temp.. 0 ... 40 °C
Protection IP 65 for wall case
Dimensions wall case 200 x 120 x 75 mm
pc-board 170 x 100 x 30 mm
Weight 0,65 kg resp. 0,25 kg
Other operating voltage on request.





Precipitation

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Model Brief
Description

Order No.

Technical data

Precipitation Monitoring

Precipitation Monitor

5.4103.00.000

This instrument is designed to optically detect precipitation and signal the start and end of precipitation by a contact closure, when 2 or 4 events (drops, hail, snow etc.) are passed the optically detecting zone in 50 seconds.
An integral heating system ensures ice and snow free operation in winter.
Complete with a mast fixing that can also be utilised for wall mounting.

Measured value	Precipitation yes/no
Switched on	without delay
Condition	2 ... 15 events in 50 s adjustable
Event sequence	< 50 s
Sensor area	25 cm ²
Size of drop	≥ 0,2 mm
Contact	1 change over
Contact load	230 V AC / 4 A
Operating voltage	24 V AC/DC ± 15%
Heating current	max. 1 A
Ambient temp..	- 25 ... + 55 °C
Protection	IP 65
Dimensions	130 x 140 x 40 mm
Weight	0,4 kg

Rain Monitor

5.4105.00.000

This instrument is designed to detect precipitation and signal the start and end of precipitation by a contact closure
An integral heating system ensures ice and snow free operation in winter.
Complete with a mast fixing that can also be utilised for wall mounting.

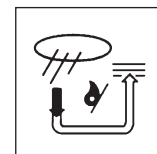
Measuring value	Precipitation yes/no
Switch-on delay	none
Switch-off delay	5,5 min.
Sensor area	40 cm ²
Contact	1 change over
Contact load	max. 42 V DC, max 1 A ; max. 4,5 W
Operating voltage	24 V AC/DC; max. 4 W
Ambient temp.	- 30 ... + 50°C
Protection	IP 65
Cable	3 m ; LiYY 5 x 0,25 mm ²
Dimensions	76,5 x 54 x 18 mm
Weight	0,5 kg

Power Supply Unit

9.3388.00.002

Provides power to the preceding Precipitation Monitor. The primary and secondary voltages have separate fuses.
Synthetic case.

Primary voltage	230 V / 50 Hz
Secondary voltage	24 V AC / 20 AV
Protection	IP 65
Dimensions	107 x 125 x 100 mm
Weight	1,2 kg



Model Brief
Description

Order No.

Technical data

Datalogger System

Datalogger DL 1/N

The Datalogger is used to store and record the pulse from a precipitation Transmitter with a Reed-contact. The precipitation is measured by a tipping bucket with a Reed-contact output. These impulse (0,1 mm/pulse) are stored in the memory together with the date and time. The date, time, name of the station and the store interval is set by two buttons. The stored data can be accessed either direct over the serial interface or it can be read with a Memory (Smart) card. The Datalogger is battery driven and therefore mains independent.

5.1755.10.000

Channel
Measuring input
Storage interval

1
Reed contact pulse
1 ... 30 min., 1 ... 24 Std.
or event depending

Storage capacity

64 kB (Ring memory)
32 days at 5 min.-interval
resp. 9289 data sets

Data output

RS 232, 9600 Baud

Display

or memory card
date, time, battery-
condition, monthly sum,
station name, storage
interval

Clock

Real time clock

Operating voltage

4,2 ... 6,5 V
(4 x 1,5 V Mignon cells)
and / or (extern)
7...20 V DC ; 6...12 V AC

Ambient temp.

- 10 ... + 60 °C

Protection

IP 64, with prot. roof

Dimensions

160 x 160 x 90 mm

Weight

1,3 kg



Protection Roof

For the protection of the Datalogger DL 1/N from direct rain. Complete with mast clamp 1 1/2".

5.1755.14.000

Material
Dimensions
Weight

Aluminium, varnished
160 x 215 x 240 mm
1,3 kg



Read-Out Unit

for Memory Cards

To read and transfer the stored data on the memory (smart) card of the Datalogger DL 1/N direct into a PC. Includes the software for the transfer of the data in ASCII files and to tabulate the values on the screen.

9.1701.10.000

Input
Printer interface
Power supply
Data cable
Housing
Protection
Dimensions Weight

Memory Card
Centronics
from PC
1 m long (to PC)
synthetic
IP 21
120 x 122 x 55 mm
0,28 kg



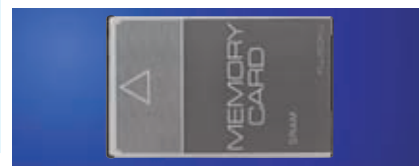
Memory Card

Portable memory medium for the stored data of the Datalogger DL 1/N.

9.2000.00.004

Type of memory
Memory capacity
Storage temp.
Ambient temp..
Dimensions
Weight

RAM with Li-Battery
256 k byte
-20 ... +60°C
-10 ... +55°C
86 x 54 x 3 mm
ca. 30 g



Modem

To read out the data from measuring systems with Datalogger via serial interface. Delivery with power pack, V.24 cable, phone connecting cable, software and hand books.

210530

Type
Serial connecting
Model
Operating voltage
Dimensions
Weight

ELSA MicroLink
V.24 / RS232 C
synthetic housing
9 V AC by power pack
110 x 35 x 135 mm
ca. 1 kg



PC - Cable 2m

For connection from a PC (Laptop) to the Datalogger DL 1/N for direct data read out.

9.1700.20.910

Cable length
Weight

2 m
0,6 kg



Evaporation

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Evaporation Meter

acc. to Pichè

This is a measuring tube with a scale, which is closed on both ends.
The lower end is closed with the blotting paper.

Blotting Paper

(1 set = 100 papers)

Model Brief
Description

Order No.

Technical data

6.1425.00.000
.001

with blotting paper
with blotting paper
Measuring range 0 ... 30 ml
Graduation 0,1 ml
Volume 36 ml
Total length 325 mm
Weight 0,1 kg

205270
205271

Diameter 55 mm
33 mm



Evaporation Pan

"Class A"

A stainless steel pan to hold the water for evaporation.

6.1428.10.000

Diameter 1206,5 mm = 47,5"
Height 254 mm = 10"
Material stainless steel
Weight 26 kg



Smoothing Pipe

with suspension measuring rod

A measuring instrument to determine the water level in a Evaporation pan.
A pointed rod in a smoothing pipe scans the water level by a micro meter.

6.1428.11.000

Measuring range 0 ... 100 mm
Graduation 0,05 mm
Height of level 177,8 mm = 7"
Material stainless steel
Dimensions Ø 200 x 300 mm
Weight 2,4 kg



Model Brief Description

Min.-Max.-Floating Thermometer

This thermometer is used to measure the temperature of the water to be evaporated on the surface. This allows comparison of the ambient conditioned with existing measurements. Two floats keep the thermometer just below the surface.

Min.-Max.-Immersion Thermometer

This thermometer is used to measure the temperature on the bottom of the evaporation pan. This allows comparison of the ambient temperature with existing measurements.

Ultrasonic Evaporation Transmitter

For the automatic measurement of the evaporation height with the aid of an ultrasonic sensor. Referring to a reference height the down-going water-level is measured continuously, and is output as current or voltage. The evaporation transmitter is temperature-compensated.

Ultrasonic Evaporation Transmitter

For the automatic measurement of the evaporation height with the aid of an ultrasonic sensor. Referring to a reference height the down-going water-level is measured continuously, and is output as serial interface. It is possible to connect it directly to a THIES-Datalogger DL 15- for example. The evaporation transmitter is temperature compensated. The measuring value is shown in a display.

Order No.

Technical data

6.1428.13.000	Range of indication	- 30 ... + 50°C
	Accuracy	± 0,5 K
	Graduation	1°C
	Measurement fluid	mercury
	Material	Al, anodised
	Dimensions	145 x 310 x 55 mm
	Weight	0,36 kg

6.1428.14.000	Range of indication	-30 ... +50°C
	Accuracy	± 0,5 K
	Graduation	1°C
	Measurement fluid	mercury
	Material	AL, anodised
	Dimensions	60 x 220 x 45 mm
	Weight	0,26 kg

6.1432.10.xxx .040 .041 .073	Electr. output	0 ... 20 mA 4 ... 20 mA 0 ... 5 V
	Measuring range	0 ... 100 mm
	Accuracy	± 1,5 % of mr. (0...50 °C)
	Operating voltage	14 ... 18 V DC (15 V DC) approx. 70 ... 90 mA
	Ambient temp.	- 20 ... + 50 °C
	Cable	5 m , LiYCY 4 x 0,25 mm²
	Dimensions	Ø 100 x 400 mm
	Weight	3,5 kg

6.1432.20.400	Measuring range	0 ... 100 mm
	Accuracy	± 3 % v. Mb. (-10...+50 °C)
	Resolution	0,1 mm
	Measuring interval	255 s measuring mode 1 s test mode
	Electr. output	interface serial synchronous
	Amplitude	0 ... 5 V
	Data protocol	12 Data bits and 12 Control bits
	Operating voltage	10 ... 15 V DC Option 8 ... 12 V DC
	Current load	approx.. 60 mA active approx. 0,6 mA stand by
	Ambient temp.	- 20...+ 60 °C
	Cable	5 m , LiYCY 4 x 0,25 mm²
	Dimensions	Ø 100 x 420 mm
	Weight	3,5 kg





Precipitation Evaporation

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Model Brief
Description

Order No.

Technical data

Software

PC Program KOMDL

The program serves for the communication of a PC with the Thies dataloggers DL1/N., DL 15, and TDL 14 via serial interface. It facilitates the interrogation of the instantaneous and the stored measuring values as well as the setting of special station parameters. The acquired data of the datalogger can be stored continuously in ASCII-format in different data files. The program is operated via pull-down-menu by keyboard or mouse.

9.1700.90.000

Data Storing

In a selectable time interval, separated for mean- and extreme values in day's files or in one file.

System Minimum

IBM-PC XT/AT
MS DOS 3.0 and above
> 384 kByte working memory
serial interface
COM 1 or COM 2

Precipitation Evaporation



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Model Brief
Description

Order No.

Technical data

Mevis T light, Vers. 1.5

9.1795.35.000

For Windows 3.1 / 95 / 98 and use with Memory Card.

Mevis T light, Vers. 1.6

9.1795.40.000

For Windows 3.1 / 95 / 98 / NT

MEVIS T light is a software for information, data acquisition and data processing for meteorological and environmental data, acquired by the THIES dataloggers DL 15, TDL 14, DL 1/N or DL 1/LWA. The data acquired by max. 5 dataloggers are read-out with MEVIS-light and documented. The reading-out of the data to the PC is effected in 3 different ways: via MODEM to a COM-interface, via MEMORY-CARD and read-out unit to a LPT-interface. The documented data can be used in 3 different ways: various graphical presentations, presentations in tabular form, exporting of data for the processing with application programs of the customer.

Graphical Presentation:

Graphic 4-in-4

- for max 4 meas. channels in 4 x/t -diagrams

Graphic 4-in-1

- for max 4 meas. channels in 1 x/t -diagrams

Day's values 4-in-4

- for max 4 meas. channels in 4 diagrams as day's stage mean value

Day's values 4-in-1

- for max 4 meas. channels in 1 diagram as day's stage mean value

Presentation in tabular Form:

4 Channel-List

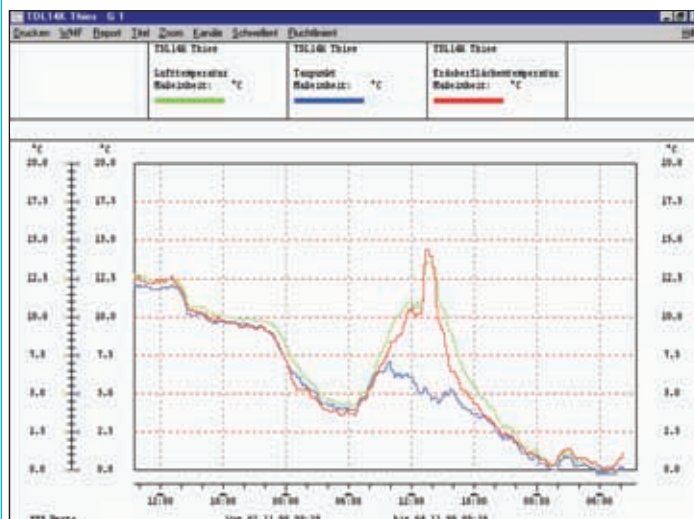
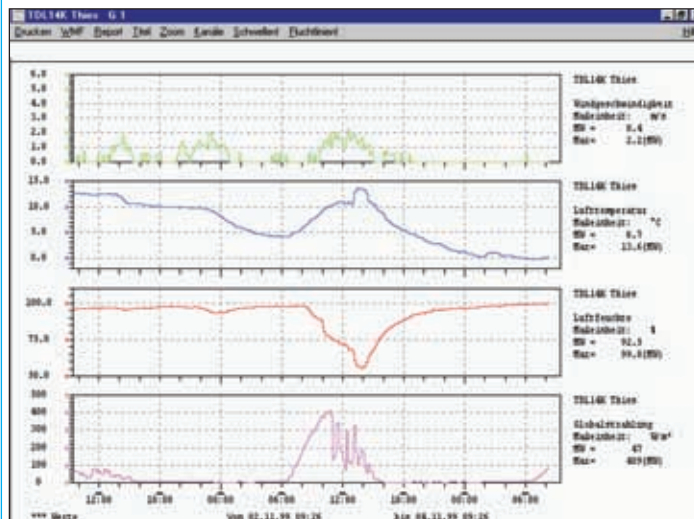
- 4 channels (also from different stations) are listed

Station list

- all channels of one station are listed

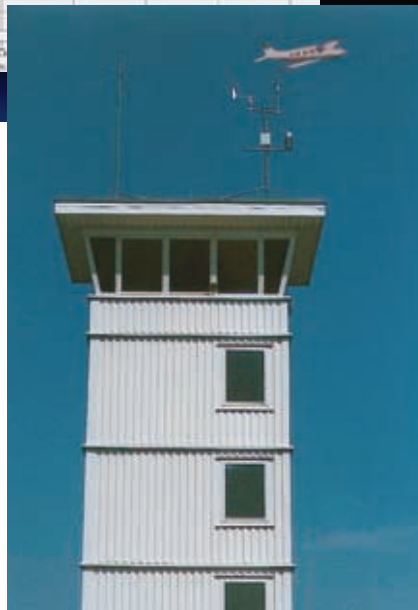
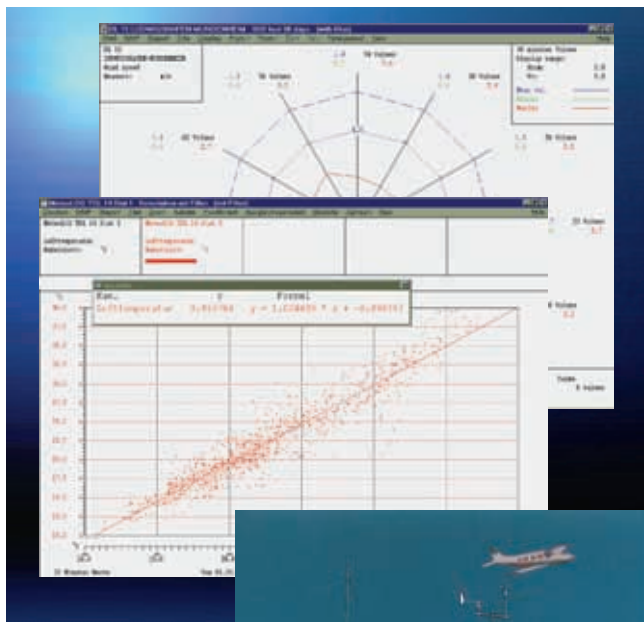
MEVIS T-light minimum system requirements:

- IBM-compatible starting from PC/AT 386 (better Pentium)
- Windows starting from version 3.1 with MS-DOS starting from version 4.0 or Windows 9x or Windows NT 4.0
- Hard disc min. 3 MB free capacity
- SVGA Graphic Adapter
- Monitor with 800 x 600 Resolution
- Windows-compatible Mouse



Quelle	Zeit	Lufttemperatur	Niederschlag	Verdunstung MEVIS	ETa
		Meinwert: °C	Meinwert: mm	Meinwert: mm	Meinwert: mm
27.10.99	24:00	11.5	0.0	0.02	0.054
28.10.99	24:00	9.8	0.1	0.94	0.495
29.10.99	24:00	10.9	0.0	1.12	0.504
30.10.99	24:00	12.0	0.0	1.33	1.22
31.10.99	24:00	11.6	3.8	1.22	0.940
01.11.99	24:00	10.7	0.0	1.40	1.11
02.11.99	24:00	12.2	10.7	0.38	0.481
03.11.99	24:00	6.8	0.0	1.07	0.364
04.11.99	24:00	2.6	0.0	0.56	0.345
05.11.99	24:00	4.5	0.0	0.43	0.064
06.11.99	24:00	8.9	0.1	1.15	0.609
07.11.99	24:00	4.9	3.5	0.64	0.440
08.11.99	24:00	4.9	4.9	0.34	0.405
09.11.99	24:00	5.9	0.0	0.39	0.438
10.11.99	24:00	4.1	2.1	0.27	0.442
11.11.99	24:00	4.2	2.9	0.47	0.421
12.11.99	24:00	2.8	0.0	0.02	0.140
13.11.99	24:00	1.2	0.0	0.29	0.253
14.11.99	24:00	3.4	1.7	0.34	0.428
15.11.99	24:00	-1.3	0.0	0.45	0.0103
16.11.99	24:00	-3.0	0.0	0.44	0.0823
17.11.99	24:00	0.4	0.3	0.27	0.355
18.11.99	24:00	0.3	3.1	0.23	0.311
19.11.99	24:00	-0.2	1.6	0.39	0.143
20.11.99	24:00	-1.0	0.1	0.17	0.307
21.11.99	24:00	-1.9	0.0	0.20	0.266
22.11.99	24:00	-1.2	2.5	0.15	0.315
23.11.99	24:00	1.2	2.4	0.14	

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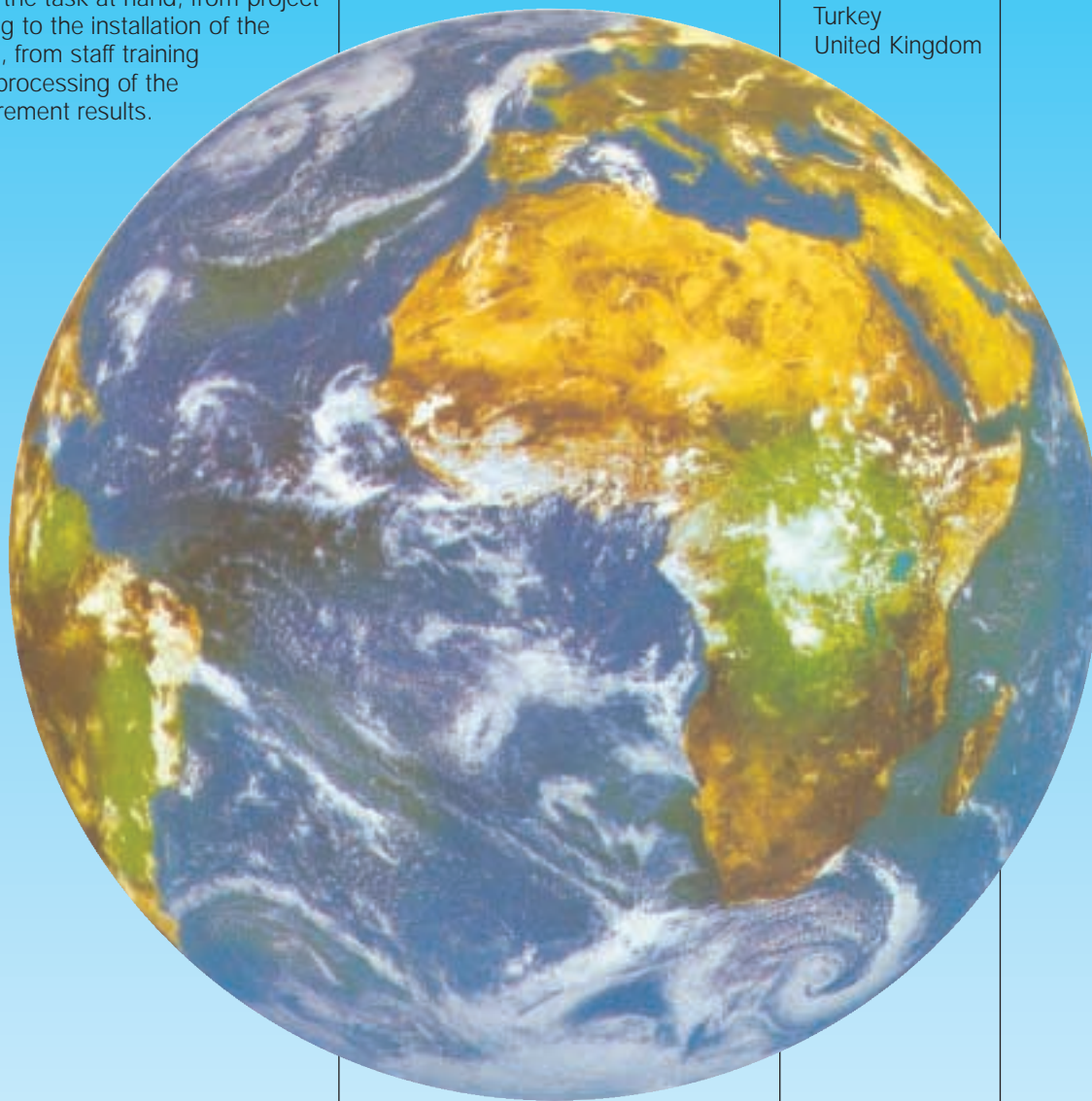
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July 2003**Precipitation Instrument Prices**

Part #	Description	\$Cdn	\$US
5.1755.10.000	DATALOGGER DL 1/N	\$2,761	\$2,071
5.1755.14.000	PROTECTION ROOF	\$173	\$130
5.3288.20.000	POWER SUPPLY UNIT	\$492	\$369
5.4000.00.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$395	\$296
5.4001.00.000	RAIN- AND SNOW METER n./ acc. to HELLMANN	\$876	\$657
5.4005.00.000	RAIN- AND SNOW METER n./ acc. to HELLMANN	\$130	\$97
5.4010.00.010	BIRD PROTECTION	\$291	\$218
5.4010.10.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$3,114	\$2,336
5.4010.16.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$3,706	\$2,779
5.4011.10.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$3,114	\$2,336
5.4011.16.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$3,706	\$2,779
5.4015.10.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$5,014	\$3,760
5.4015.16.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$5,720	\$4,290
5.4016.10.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$5,014	\$3,760
5.4016.16.000	PRECIPITATION TRANSMITTER n./acc. to HELLMANN	\$5,720	\$4,290
5.4031.11.000	OMBROMETER	\$4,805	\$3,604
5.4031.11.010	BIRD PROTECTION	\$364	\$273
5.4031.30.010	PRECIPITATION TRANSMITTER	\$6,970	\$5,227
5.4031.31.000	OMBROMETER	\$5,573	\$4,180
5.4031.36.010	PRECIPITATION TRANSMITTER	\$8,296	\$6,222
5.4031.51.000	OMBROMETER	\$8,006	\$6,004
5.4032.00.000	WIND PROTECTION	\$2,250	\$1,687
5.4032.30.007	PRECIPITATION TRANSMITTER	\$2,430	\$1,823
5.4032.30.008	PRECIPITATION TRANSMITTER	\$2,907	\$2,180
5.4032.30.009	PRECIPITATION TRANSMITTER	\$2,907	\$2,180
5.4033.30.040	PRECIPITATION TRANSMITTER	\$3,724	\$2,793
5.4033.30.041	PRECIPITATION TRANSMITTER	\$3,724	\$2,793
5.4033.30.061	PRECIPITATION TRANSMITTER	\$3,724	\$2,793
5.4037.00.040	TRANSDUCER NS	\$803	\$602
5.4037.00.060	TRANSDUCER NS	\$963	\$722
5.4037.10.040	TRANSDUCER NS	\$888	\$666
5.4037.10.060	TRANSDUCER NS	\$888	\$666
5.4045.31.002	PRECIPITATION MEASURING INSTRUMENT LWA	\$9,766	\$7,325
5.4103.10.000	PRECIPITATION MONITOR	\$721	\$541
5.4105.00.000	RAIN MONITOR	\$276	\$207
6.1425.00.000	EVAPORATION METER n./acc. to PICHE	\$119	\$89
6.1428.10.000	EVAPORATION PAN "CLASS A"	\$2,342	\$1,757
6.1428.11.000	SMOOTHING PIPE WITH SUSPENSION ROD	\$1,873	\$1,405
6.1428.13.000	MAX.-MIN. FLOATING THERMOMETER	\$542	\$406
6.1428.14.000	MAX. -MIN. IMMERSION THERMOMETER	\$344	\$258
6.1432.10.040	ULTRASONIC EVAPORATION TRANSMITTER	\$3,885	\$2,914
6.1432.10.041	ULTRASONIC EVAPORATION TRANSMITTER	\$3,885	\$2,914
6.1432.20.400	ULTRASONIC EVAPORATION TRANSMITTER	\$4,575	\$3,431
9.3388.00.002	POWER SUPPLY UNIT	\$163	\$122
9.3388.00.000	POWER SUPPLY UNIT	\$409	\$307
4.3179.02.090	MAST GIRDER LDN 90	\$1,209	\$907

July 2003

Precipitation Instrument Prices



Part #	Description	\$Cdn	\$US
9.3389.10.000	POWER SUPPLY UNIT - COMPACT	\$439	\$329
9.4031.35.065	STAND ZINC PLATED	\$464	\$348
9.4031.36.065	STAND STAINLESS STEEL	\$537	\$403
9.1700.20.910	PC-CABLE - 2 m	\$35	\$26
9.1700.90.000	PC-PROGRAMM "KOM-DL 15"	\$512	\$384
9.1701.10.000	READ-OUT UNIT	\$1,023	\$767
9.1795.40.000	PC-PROGRAMM "MEVIS T- 1.6 LIGHT" NT	\$1,307	\$980
9.2000.00.002	MEMORY - CARD 64 KB	\$281	\$211
210530	MODEM	\$527	\$395
502506	SNOWCROSS F. 5.4000. / 5.4001.	\$52	\$39
502507	SNOWCROSS F. 5.4005.	\$52	\$39
ACCESSORIES FOR RECORDING INSTRUMENTS			
		\$0	\$0
205243	REC.CHARTS 7 DAYS PRECIPIT. RECOR. (100 SHEETS)	\$44	\$33
205245	REC.CHARTS 1 DAY PRECIPIT. RECOR. (100 SHEETS)	\$44	\$33
205247	RECORDING ROLL 10 mm THRUST (MIN 12 ROLLS)	\$13	\$9
205248	RECORDING ROLL 20 mm THRUST (MIN 12 ROLLS)	\$13	\$9
205270	BLOTTING PAPER 55 mm F. 6.1425.00.000 (100 SHEETS)	\$21	\$16
205271	BLOTTING PAPER 33 mm F. 6.1425.00.000 (100 SHEETS)	\$21	\$16
500847	SPARE FELT PEN (Min QTY 6 PCS)	\$10	\$8