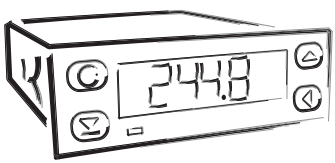
GUARANTEE 2 YEARS

OMM 650UC

6 DIGIT PROGRAMMABLE

IMPULSE COUNTER/FREQUENCYMETER
STOPWATCH/CLOCK



SAFETY INSTRUCTIONS

Please, read the enclosed safety instructions carefully and observe them!
These instruments should be safeguarded by isolated or common fuses (breakers)!
For safety information the EN 61 010-1 + A2 standard must be observed.
This instrument is not explosion-safe!

TECHNICAL DATA

Measuring instruments of the OMM 650 series conform to the European regulation 89/336/EWG and the Ordinance 168/1997 Coll.

They are up to the following European standards:
EN 55 022, class B
EN 61000-4-2, -4, -5, -6, -8, -9, -10, -11

The instruments are applicable for unlimited use in agricultural and industrial areas.

CONNECTION

Supply of energy from the main line has to be isolated from the measuring leads.

ORBIT MERRET, spol. s r.o.
Vodňanská 675/30
198 00 Prague 9
Czech Republic

Tel: +420 - 281 040 200
Fax: +420 - 281 040 299
e-mail: orbit@merret.cz
www.orbit.merret.cz

1. Contens **3**
2. Instrument description. **4**
3. Instrument connection **6**
4. Instrument setting **8**
Symbols used in the instructions. 10
Setting the DP and the (-) sing 10
Control keys functions. 11
Configuration of „User" menu items 11
5. Setting "LIGHT" menu
5.0 Description "LIGHT" menu 12
Input to menu 14
Selection of instrument measuring mode 14
Selection of digital input filter. 15
Selection of the type of input A 15
Setting the level of input A 16
Selection of the type of input C (Resetting) 16
Setting the level of input C (Resetting) 17
Setting calibration constant 17
Setting offset - PRESET 18
Setting the limits 20
Setting the menu type (LIGHT/PROFI). 22
Restoration of the manufacture setting 22
Setting new access password 23
Instrument identification 23
6. Setting "PROFI" menu
6.0 Description "PROFI" menu 24
6.1 "PROFI" menu - INPUTS
6.1.1 Counter resetting. 28
6.1.2 Instrument configuration 29
6.1.2a Selection of measuring mode. 29
6.1.2.b Selection of measuring time/time base 30
6.1.2.c Selection of input filter parameters. 30
6.1.2.d Selection of the type of input 31
6.1.2.d Setting input level 31
6.1.2.f Selection of display status backup. 32
6.1.2.g Setting time H 32
6.1.2.h Selection of stopwatch control/clock H 33
6.1.2.j Setting the display status backup H 34
6.1.3 Selection the external control input 35
6.1.4 Selection function of key „ENTER" 35
6.2 "PROFI" menu - CHANNELS
6.2.1 Setting calibration constant 36
6.2.2 Nastavení offsetu 36
6.2.3 Setting the digital filter 37
6.2.4 Setting the decimal point 35
6.3 "PROFI" menu - OUTPUTS
6.3.1 Configuration and setting the limits 36
6.3.2 Setting the display brightness. 37
6.4 "PROFI" menu - SERVICE
6.4.1 Selection of the type of programming menu 42
6.4.2 Restiration of the manufacture setting. 42
6.4.3 Setting new access password. 43
6.4.4 Instrument identification 43
7. Setting "USER" menu **44**
8. Error statements **46**
9. Instrument dimension and installation **48**
10. Technical data **50**
11. Certificate of guarantee **51**

2.1 Description

The OMM 650UC model is a universal 6 digit programmable panel impulse counter/frequency meter/repeat/stop-watch. The instrument is based on an 8-bit microprocessor, that secures high accuracy, stability and easy operation of the instrument.

Measuring modes

COUNTER	Single counter	C-F
FREQUENCY	Frequency	C-F
STOP-WATCH	Stop- Watch	H
CLOCK	Clock	H

Programmable display projection

Calibration	in „CM" may be set the calibration coefficient
Projection	-99999...999999 with fixed or floating DP in adjustable format 10/24/60
Time base	0,5/1/2/5/10/50 s

Digital filters

Input filter:	the instrument allows to filter the input signal and thus suppress undesirable interfering signals (e.g. relay back-swings). The set parameter indicates maximum possible measured frequency, that the instrument will process, 5/40/100/200 Hz
Exponential average	from 2...100 measurements
Radius of insensitiveness	adjustable in digits

Functions

Preset	initial non-zero value which is read always after instrument resetting
Rounding	setting the projection step for the display
OM Link	company interface for instrument operation, setting and update

External control

Hold	display/instrument/menu access locking
Lock	control keys lockin
Resetting	resetting/presetting counter

2.2 Operation

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument are realized in two adjusting modes:

LIGHT **Simple programming menu**
- contains only items necessary for instrument setting and is protected by an optional numeral code

PROFI **Complete programming menu**
- contains complete instrument menu and is protected by an optional numeral code

USER **User programmable menu**
- may contain arbitrary items selected from programmable menu (LIGHT/PROFI), which determines the authorization (see or change)
- access is without password

All programmable parameters are stored in the EEPROM memory
(they hold even after the instrument is switched off).

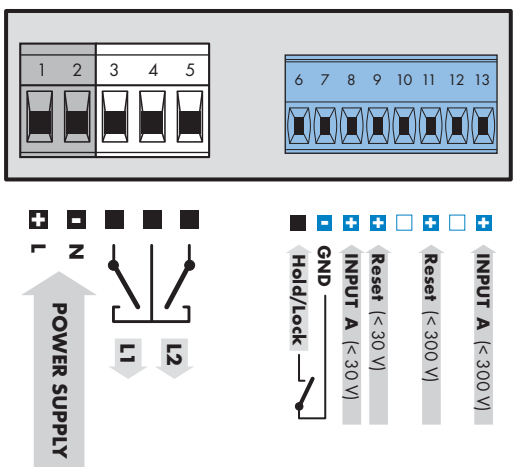
OMLINK Complete operation and setting of the instrument may be performed via communication interface OM Link, which is a standard equipment of every instrument.
The operation program is freely available (www.orbit.merret.cz) and the only requirement is the purchase of OML cable for connecting the instrument to PC. It is manufactured in version RS 232 and USB and is compatible with all ORBIT MERRET instruments.

The OM LINK program version „Standard" allows you to connect an unlimited number of instruments with the option of visualizatiion and storage in PC.

2.3 Options

Comparators are assigned to control two limit values with relay output. The limits have adjustable hysteresis as well as selectable delay of the switch-on. Reaching the preset limits is signalled by LED and simultaneously by the switch-on of the relevant relay.
Time backup by RTC is designed for measuring mode „CLOCK" and secures time measurement also when the instrument is switched off (without projection on display).

The instrument supply leads should not be in proximity of the incoming low-potential signals.
Contactors, motors with larger input power should not be in proximity of the instrument.
The leads into the instrument input (measured quantity) should be in sufficient distance from all power leads and appliances. Provided this cannot be secured it is necessary to use shielded leads with connection to ground (bracket E).
The instruments are tested in compliance with standards for use in industrial area, yet we recommend to abide by the above mentioned principles..



CONNECTION

	Description	Connector
Input A - 1	input signal < 43 V (absolut 60 V)	GND + Input A -1
Input A - 2	input signal < 300 V	GND + Input A - 2
Reset	input signal < 60 V	GND + Reset

Function	Description	Control
Hold	Instrument blocking (adjustable in the menu)	upon contact, (Nr. 6/7)
Lock	Keyboard locking	upon contact, (Nr. 6/7)

Table of the comparison levels

Input	Type of input	Max. input voltage (Level A, C)	Comarator levels	
			L > H	H > L
Input A-1 Reset	NPN, Contact	xxx	0,5 V	4,5 V
	PNP	9,7 V	0,5 V	4,5 V
	PNP	14,4 V	1,0 V	9,0 V
	PNP	19,2 V	1,5 V	13,3 V
	PNP	23,9 V	2,0 V	17,8 V
	PNP	28,7 V	2,5 V	22,1 V
	PNP	33,5 V	3,0 V	26,6 V
	PNP	38,3 V	3,4 V	31,0 V
	PNP	43,0 V	3,9 V	35,5 V
Input A-2	NPN, Contact	!!! do not connect !!!		
	PNP	84 V	4,9 V	39,8 V
	PNP	128 V	9,2 V	78,0 V
	PNP	170 V	13,6 V	117,8 V
	PNP	211 V	17,8 V	156,0 V
	PNP	253 V	22,3 V	195,8 V
	PNP	295 V	26,5 V	234,1 V
	PNP	301 V	30,9 V	273,9 V

Setting PROFI

- For expert users
- Complete instrument menu
- Access is password protected
- Possibility to arrange items of the „User“ menu
- Tree menu structure

Setting LIGHT

- For trained users
- Only items necessary for instrument setting
- Access is password protected
- Possibility to arrange items of the „User“ menu
- Linear menu structure

Setting USER

- For user operation
- Menu items are set by the user (Profi/Light) as per request
- Access is not password protected
- Optional menu structure either tree (PROFI) or linear (LIGHT)

4.1 Setting

The instrument is set and controlled by five control keys located on the front panel. All programmable settings of the instrument are performed in three adjusting modes:

LIGHT **Simple programming menu**
- contains solely items necessary for instrument setting and is protected by optional number code

PROFI **Complete programming menu**
- contains complete instrument menu and is protected by optional number code

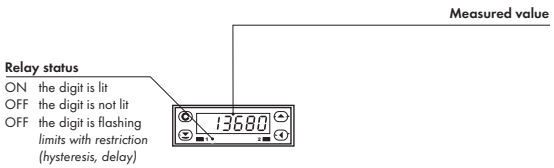
USER **User programming menu**
- may contain arbitrary items selected from the programming menu (LIGHT/PROFI), which determine the right (see or change)
- acces without password

All programmable parameters are stored in the EEPROM memory (they hold even after the instrument is switched off).

Complete instrument operation and setting may be performed via OM Link communication interface, which is a standard equipment of all instruments.

The operation program is freely accessible (www.orbit.merret.cz) and the only requirement is the purchase of OML cable to connect the instrument to PC.

Setting and controlling the instrument is performed by means of 4 control keys located on the front panel. With the aid of these keys it is possble to browse through the operation menu and to select and set required values.



Symbols used in the instructions

H Indicates the setting for given type of instrument

DEF values preset from manufacture

symbol indicates a flashing light (symbol)

inverted triangle indicates the item that can be placed in USER menu

broken line indicates a dynamic item, i.e. it is displayed only in particular selection/version


after pressing the key the set value will not be stored


after pressing the key the set value will be stored


30 continues on page 30

Setting the decimal point and the minus sign

DECIMAL POINT

Its selection in the menu, upon modification of the number to be adjusted it is performed by the control key ◀ with transition beyond the highest decade, when the decimal point starts flashing . Positioning is performed by ▲.

THE MINUS SIGN

Setting the minus sign is performed by the key ▲ on higher decade. When editing the item substraction must be made from the current number (e.g..: 013 > ▲, on class 100 > -87)

Controntrol keys functions

Key	Measurement	Menu	Setting numbers/Selection
C	access into USER menu	exit menu w/o saving	transition to next item w/o saving
◀		back to previous level	move to higher decade
▲		move to next item	move up
▼	counter resetting	confirm selection	setting/selection confirmation
▲ + ◀			numeric value is set to zero
C + ▼	access into LIGHT/PROFI menu		
C + ▲	direct access into PROFI menu - temporary (remains LIGHT)		
▼ + ▲		configuration of an item for USER menu	
▼ + ◀		determine the sequence of items in "USER - LIGHT" menu	

Setting items into „USER" menu

- in **LIGHT** or **PROFI** menu
- no items permitted in **USER** menu from manufacture
- on items marked by inverted triangle

nO	item will not be displayed in USER menu
YES	item will be displayed in USER menu with the option of setting
SHOu	item will be solely displayed in USER menu

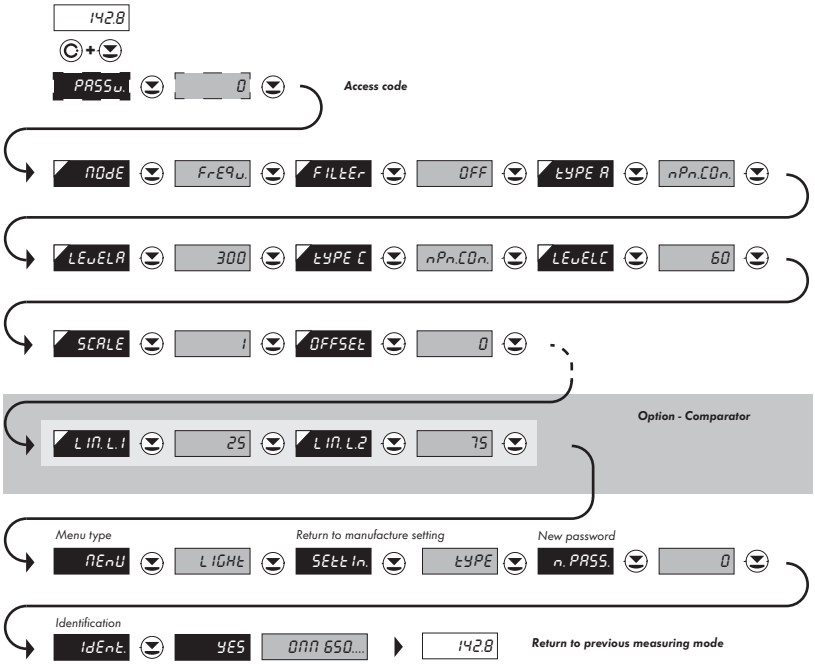
5.0 Setting "LIGHT"

LIGHT **Simple programming menu**

- contains only items necessary for instrument setting and is protected by optional numeral code

- **For capable users**
- **Only items necessary for instrument setting**
- **Password protected access**
- **Possibility to arrange items of the „User" menu**
- **Linear menu structure**

Preset from manufacture	
Password	*"0"*
Menu	*LIGHT*
USR menu	*off*
Setting the items	DEF



!

Upon delay exceeding 60 s the programming mode is automatically discontinued and the instrument itself restores the measuring mode

PASSu. **Access into instrument menu**

DC PM DU OHM RTD T/C

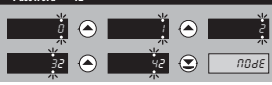
PAS = 0

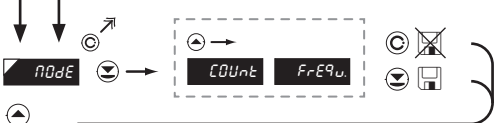
- access into menu is unrestricted, after releasing keys you automaticaly move to first item of the menu

PAS > 0

- access into menu is protected ny number code

"Password" = 42 *Example*





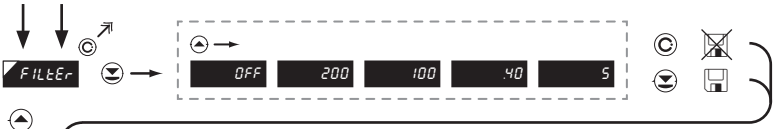
nOdE **Selection of the instrument measuring mode**

- basic selection of instrument type

DEF = FREQV.

MODE	Menu	Instrument mode
	COUNT.	Counter
	FREQU.	Frequencymeter

Selection of mode "COUNT." *Example*



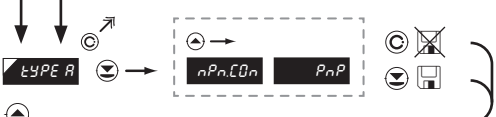
FILTER **Selection of digital filter**

- digital filter may supress undesirable disturbing pulses (e.g. relay backswings) on the input signal. Set parameter determines maximum possible frequency, which the instrument processes without limitation

DEF = OFF

Maximum input frequency 100 Hz > 100 *Example*

> ! *For contact input and known maximum input frequency we recommend using the filter*



TYPE A **Selection of input type**

- setting applies for Input A

DEF = NPN.CON.

TYPE	Menu	Input type
	NPN.CON	NPN or contact
	PNP	PNP

Selection of input type > NPN *Example*

> ! *Following this selection it is required to set input levels (Level A)*

LEvELA Setting input level for input A

- setting applies for Input A
- setting the level (only for type PNP) of input voltage, instrument subsequently automatically selects the divider and thus also the comparison levels

- range of setting 0...43 V (Input 1)
- range of setting 43...300 V (Input 2)
- table of comparison levels on page 7

Setting the level = 34 V *Example*

tYPE C Selection of input type

- setting applies for resetting input

DEF = NPN.CON.

TYPE	Menu	Input type
	NPN.CON	NPN or contact
	PNP	PNP

Selection of input type > NPN *Example*

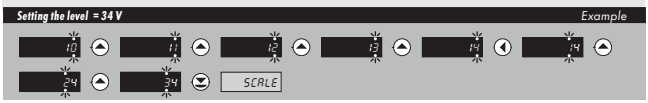
!

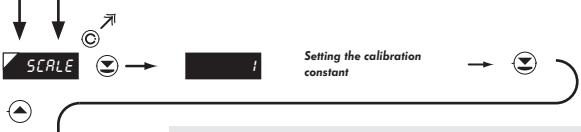
Following this selection it is required to set input levels (Level A)

LEvELC Setting input level for resetting input

- setting the level (only for type PNP) of input voltage, instrument subsequently automatically selects the divider and thus also the comparison levels

- range of setting 0...60 V
- table of comparison levels on page 7

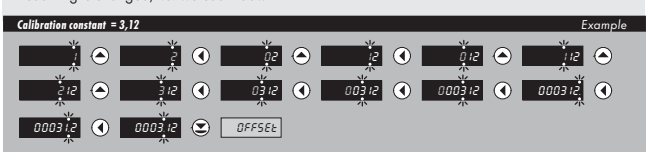


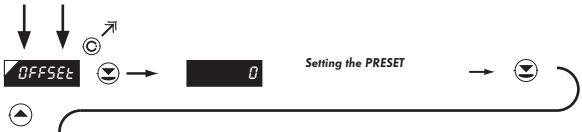


SCALE Setting the calibration constant

- calibration constant is for the conversion of input value to required display value
- by setting a minus value the direction of counting is changed, i.e. we count down

- range: -0,00001...999999
- DEF = 1





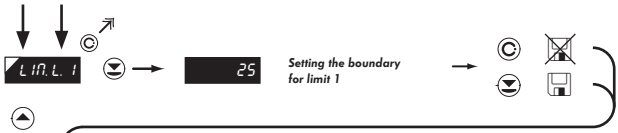
OFFSEt **Setting the additive constant „PRESET"**

- shift of the beginning of the measurement by a set value which will always be read upon instrument resetting
- range: -99999...999999

- **DEF** = 0

Setting „PRESET" = 24 *Example*

** subsequent item on the menu depends on instrument equipment*

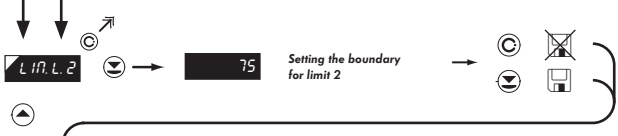


LIM.L.1 Setting the boundary for limit 1

- range of the setting is -99999...999999
- presetting "Hysteresis"=0 "Delay"=0
- contingent change of hysteresis or offset of the switch-on may be performed in the PROFI menu

DEF = 25

Setting limit 1 > L1 = 30 *Example*



LIM.L.2 Setting the boundary for limit 2

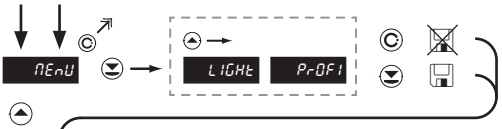
- range of the setting is -99999...999999
- presetting "Hysteresis"=0 "Delay"=0
- contingent change of hysteresis or offset of the switch-on may be performed in the PROFI menu

DEF = 75

Setting limit 2 > L2 = 230 *Example*

!

Items for "Limits" are accessible only if the instrument contains them.



MENU **Setting the menu type LIGHT/PROFI**

- LIGHT menu, a simple menu, which contains only items necessary for instrument setting
  > linear structure of the menu
- PROFI menu, a complete menu for entire instrument setting
  > tree structure of the menu

DEF = LIG

Menu LIGHT > MENU = LIGHT *Example*

LIGHT ⏬ rESTOr

rESTOr **Restoration of the instrument manufacture setting**

- in case of incorrect setting or calibration it is possible to return to manufacture setting. Prior execution of the changes you will be asked to confirm your selection (YES)
- reading the manufacture calibration and original setting of items in the menu

Restoration of manufacture setting > RESTOR *Example*

rESTOr ⏫ YES ⏬ n.PASS

n.PASS. Setting new access password

- access password for LIGHT/PROFI menu
- range of the numeral code 0...9999
- when setting password to "000" the access into LIGHT/PROFI menu is accessible without call for entering it
- in case of loss of password universal password "8177" may be used

DEF = 0

New password - 341 > n.PASS. = 341 *Example*

IdEnt. SW version of the instrument

- the display shows the type identification of the instrument, SW number, SW version and current input setting (Mode)
- if the SW version reads a letter on the first position, then it is a customer SW
- after the identification is completed the menu automatically quits the display and measuring mode is restored

Return to measuring mode

6.0 Setting "PROFI"

PROFI **Complete programming menu**

- contains complete instrument menu and is protected by optional number code
- designed for expert users
- preset from manufacture is menu **LIGHT**

- **For expert users**
- **Complete instrument menu**
- **Access is password protected**
- **Possibility to arrange items of the „User" menu**
- **Tree menu structure**

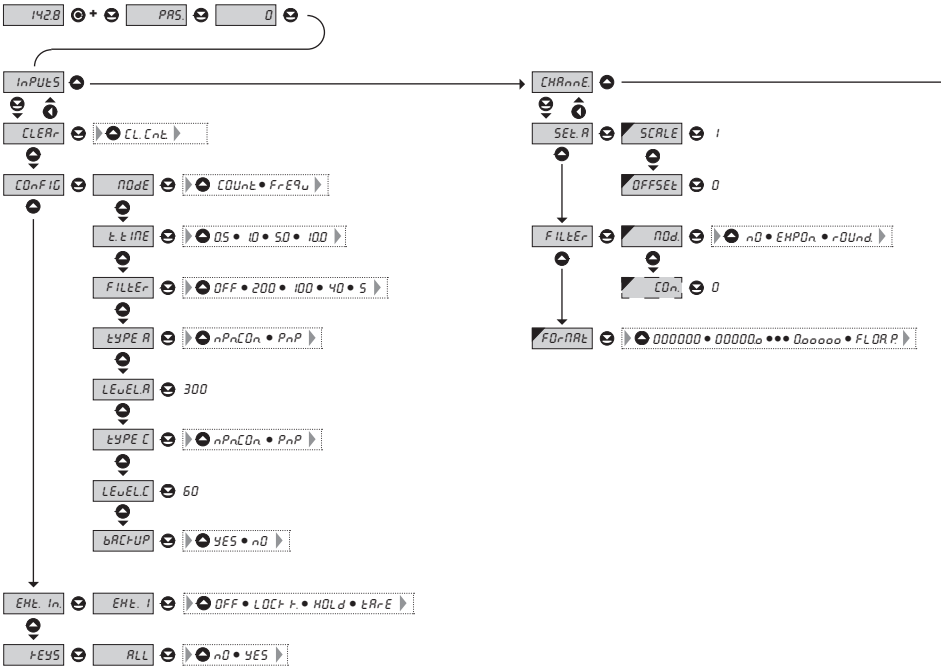
Switching over to "PROFI" menu

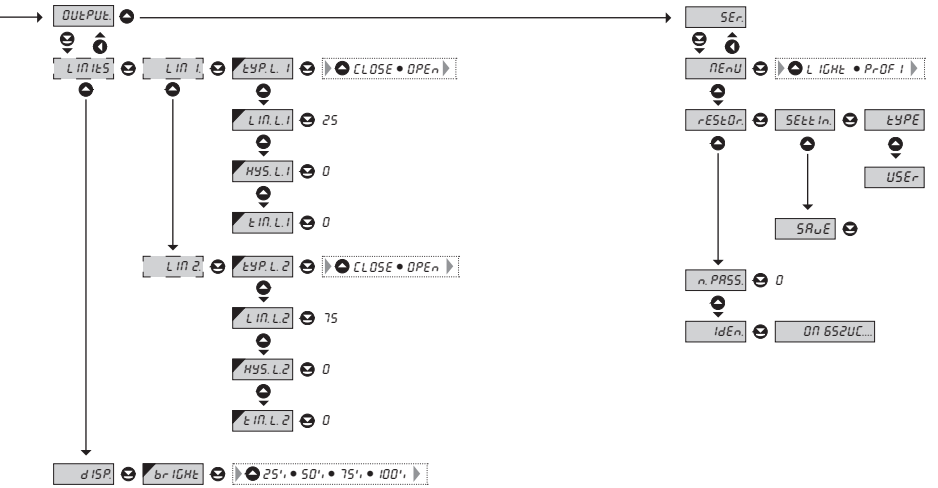
C + ▲

- temporary switch-over to **PROFI** menu, which is suitable to edit a few items
- after quitting **PROFI** menu the instrument automatically switches to **LIGHT** menu
- access is password protected (if it was not set under item N. PASS. =0)

C + ▼

- access into **LIGHT** menu and transition to item „MENU" with subsequent selection of „PROFI" and confirmation
- after re-entering the menu the **PROFI** type is active
- access is password protected (if it was not set under item N. PASS. =0)

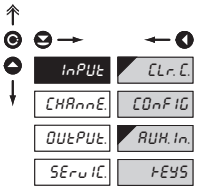

1428
PAS.
0
InPUtS
CLEAr
CL. Cnt
COnFIG
MOdE
COUnt • FrEQu
t.tIME
05 • 10 • 50 • 100
FILtEr
OFF • 200 • 100 • 40 • 5
tYPE A
nPnCOn • PnP
LEuELA
300
tYPE C
nPnCOn • PnP
LEuELC
60
bACKUP
YES • nO
EHt. In.
EHt. 1
OFF • LOCK K. • HOLd • tArE
KEYS
ALL
nO • YES
CHAnnE
SEt.A
SCALE
1
OFFSEt
0
FILtEr
MOd
nO • EHPOn • rOUnd
Con
0
FOrMAt
000000 • 00000o ••• Ooooo • FLOAP



!

Upon delay exceeding 60 s the programming mode is automatically discontinued and the instrument itself restores the measuring mode

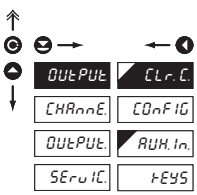
6.1 Setting "PROFI" - INPUT



The basic instrument parameters are set in this menu

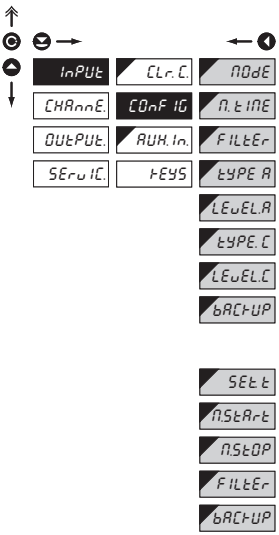
- CLr.C. Couter resetting
- COnFIG Selecting the measuring range and rate
- AUX.In. Setting the external input function
- tEYS Setting the ENTER key function

6.1.1 Counter reset



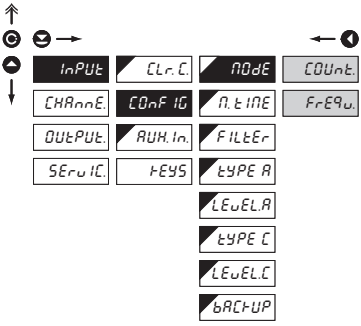
- CLr.C. **Counter reset**

6.1.2 Instrument configuration



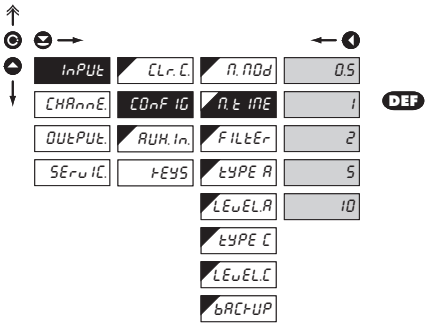
CONFIG	**Basic instrument configuration**
MOdE	Setting the instrument measuring mode
M.t IME	Setting the time of measurement - time base
FILtEr	Setting the input filter parameters
tYPE A-	Setting input type
LEuEL-	Setting input level
bACKUP	Setting the data backup
SEt t	Setting the current time
M.StArt	Setting the switch-on of the stop-watch/watch
M.StOP	Setting the resetting of the stop-watch/watch

6.1.2a Selection the measuring mode



MOdE	**Selection the measuring mode**
COUnt.	Single impulse counter
- measures at input A	
FrEQu.	Frequency meter
- measures at input A	

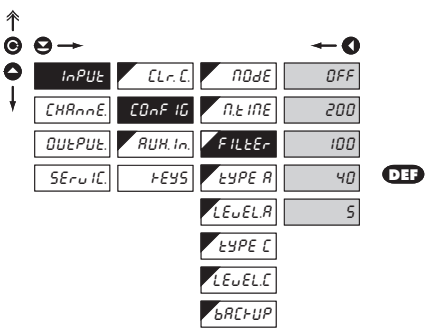
6.1.2b Selection the time of measurement/Time base



n.t IME **Selection the time of measurement - time base**

- if you set the time of measurement for example to 1 s, the measuring time is approximately from 1 s to 2 s (1 s + maximum one period of measured signal). If no impulse comes within 2 s , it is understood that the signal has zero frequency
- range of the setting of the time base is 50 ms to 50 s
- in the „RTC" regime with projection of date the set time determines the period of switching between time/date, min. is 5 s, the date is displayed for approximately 2,5 s

6.1.2c Selection the input filter parameters



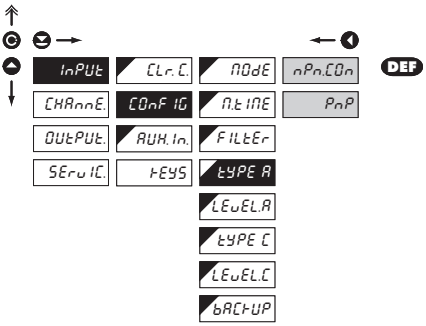
FILtEr **Selection the input filter parameters**

- through the digital filter we may suppress undesirable interfering impulses (e.g. relay back-swings) on the input signal. The set parameter indicates the maximum possible instrument frequency, which the instrument processes without restriction

!

When entering the contact and well known maximum input frequency we recommend to use the filter

6.1.2d Selection of input type



tYPE A **Selection of input type**

- setting applies for Input A

nPn.COn Type of input NPN and on contact

PnP Type of input PNP

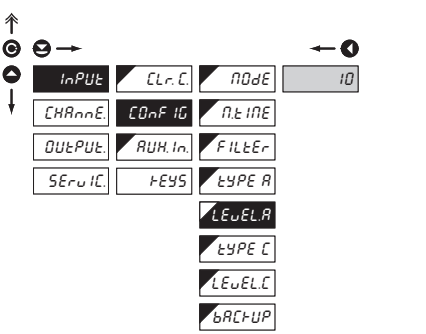
!

Following this selection it is required to set input levels (Level A)

!

Setting procedure is identical also for Input C (TYPE C)

6.1.2e Setting input level



LEvEL.A **Setting input level**

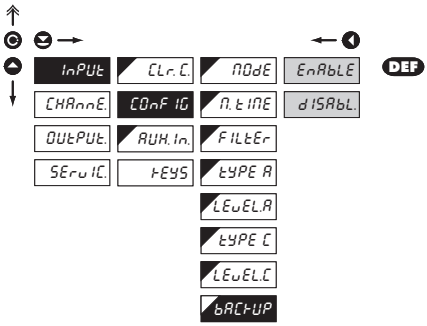
- setting applies for Input A
- setting the level (only for type PNP) of input voltage, instrument subsequently automatically selects the divider and thus also the comparison levels
- range of setting 0...43 V (Input 1)
- range of setting 43...300 V (Input 2)
- table of comparison levels on page 7

- range of setting 0...60 V (Level C)

!

Setting procedure is identical also for Input C (LEVEL C)

6.1.2f Selection the display status back-up



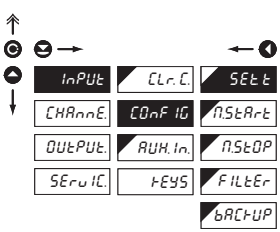
bACKUP **Selection the display status backup**

- setting the renewal of the displayed value after power supply failure or switch-off of the instrument

EnAbLE The instrument will read the display status from memory

dISAbL. The instrument will reset itself to zero after switch-on

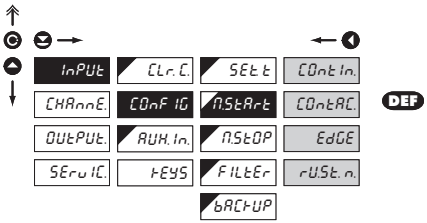
6.1.2g Time setting H



SEt t **Time setting**

- the time setting menu is accessible only in the stop-watch/watch regime

6.1.2h Selection the stop-watch control



n.StArt **Selection the stop-watch control**

- the time setting menu is accessible only in the stop-watch/watch regime

CONt In. Stop-watch/watch is running, if the instrument is on

CONtAC. Stop-watch/watch is running at switched-on contact

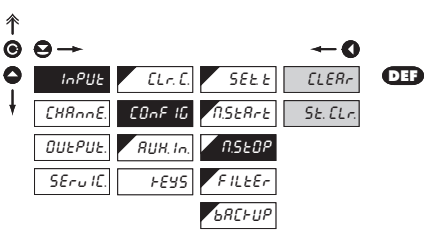
EdGE Stop-watch/watch is controlled by signal edge

- time is triggered by the edge (passage of the signal across the comparator level) and stopped by the next edge

rU. St.n. Stop-watch/watch is controlled and reset to zero by signal edge

- the time is triggered by the edge (passage of the signal across the comparator level) and stopped and reset to zero by the next edgehranou

6.1.2i Selection the stop-watch resetting



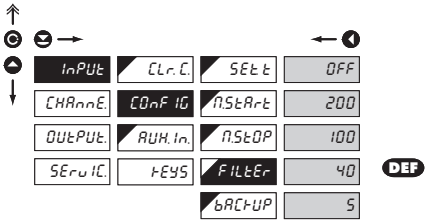
n.StOP **Selection the stop-watch resetting to zero**

- the time setting menu is accessible only in the stop-watch/watch regime

CLEAr Stop-watch/watch is reset to zero by input „Reset"

St. CLr. Stop-watch/watch is stopped and reset to zero by input „Reset"

6.1.2j Selection the input filter parameters H



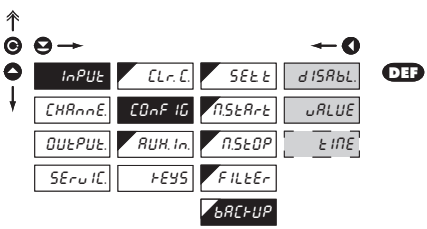
FILtEr **Selection the input filter parameters**

- through the digital filter we may suppress undesirable interfering impulses (e.g. relay back-swings) on the input signal. The set parameter indicates the maximum possible instrument frequency, which the instrument processes without restriction

!

When entering the contact and well known maximum input frequency we recommend to use the filter

6.1.2k Selection the display status back-up H



bACKUP **Selection the display status backup**

- the time setting menu is accessible only in the stop-watch/watch regime
- setting the renewal of the displayed value after power supply failure or switch-off the instrument

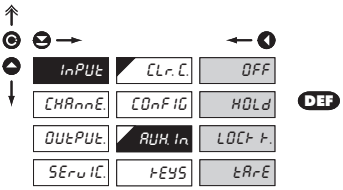
EnAbLE The instrument will read the display status from memory

dISAbL. The instrument will reset itself to zero after switch-on

tIME Instrument reads the „running" time from RTC

- the item menu is accessible only with option „Time backup"

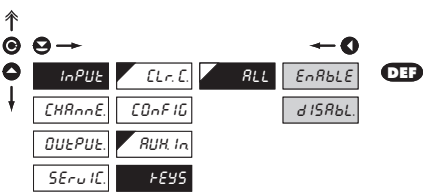
6.1.3 External input function selection



AUX.In. External input function selection

- OFF — Input is off
- HOLd — HOLD, stop measuring of the entire instrument
- LOCk K. — Locking keys on the instrument
  - the input controls the blocking of the keys on the front panel
- tArE — TARE - Tare activation

6.1.4 Permission to reset by the enter key

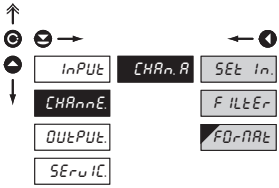


ALL Permission to reset by the „ENTER" key

- function the „ENTER" key

- EnAbLE — Resetting to zero by the ENTER keyis permitted
- dISAbL. — Resetting to zero by the ENTER key is prohibited

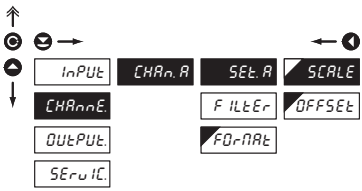
6.2 Setting "PROFI" - CHANNEL



In this menu the instrument input parameters are set

- SEt. In. — Setting display projection
- FILtEr — Setting the digital filters
- FOrMAt — Setting the decimal point

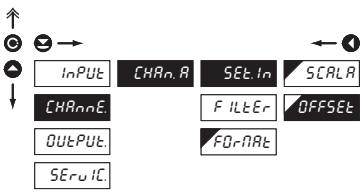
6.2.1a Setting the calibartion constant



SCALE **Setting the calibration constant**

- calibration constant is for the conversion of input value to required display value
- by setting a minus value the direction of counting is changed, i.e. we count down
- range: -0,00001...999999
- DEF = 1

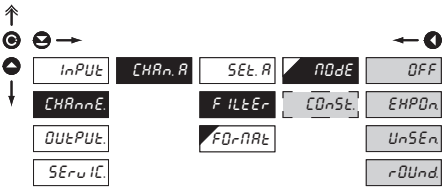
6.2.1b Offset setting



OFFSEt **Setting the additive constant „PRESET"**

- shift of the beginning of the measurement by a set value which will always be read upon instrument resetting
- range: -99999...999999
- DEF = 0

6.2.2 Setting the digital filters



MOdE **Setting the digital filters**

CONSt. Setting the constant

- this menu item is always displayed after selection of a particular type of filter

OFF Filters is off

EXPOn. Selection of exponential filter

- the value is calculated from a number of measurements selected in „CON"
- range 2...100

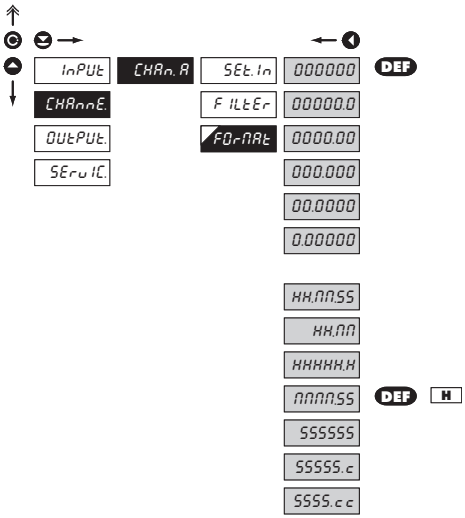
UnSEn. Setting the band of insensitiveness

- this filter allows to stabilize the resultant value. The previous value is taken as the measuring result, if the measured value is not larger than the previous + P or smaller then the previous - P. The value „±P" defines the band of insensitiveness in which the measured value can be changed without the change having any impact on the result - change of data onthe display
- range 0,00001...100 000

rOUnd. Selection of value round-up

- it is set by ...arbitrary number, which determines the projection step (e.g.: "Con"=2,5 > display 0, 2.5, 5,...)

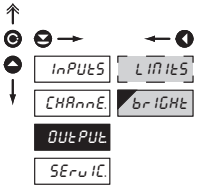
6.2.3 Setting the decimal point



FOrMAt Setting the decimal point

- the instrument enables projection of a number with decimal positioning of the decimal point
- for projection of time there are also other forms of projection

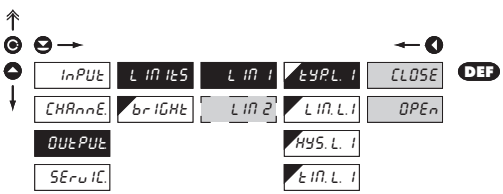
6.3 Setting „PROFI“ - OUTPUTS



It is possible to set the parameters of the instrument output signals in this menu

- LIMItS — Setting the type and the switching of limits
- brIGHt — Setting the display brightness

6.3.1a Limits - relay functions

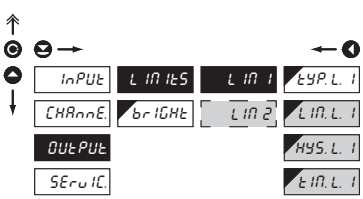


- tYP.L.1 — **Setting the type of relay function**
  - CLOSE — Relay switches on when the condition is met
  - OPEn — Relay switches off when the condition is met

?

The process of setting the Limit 2 is identical with the setting for Limit 1

6.3.1b Limits - boundaries

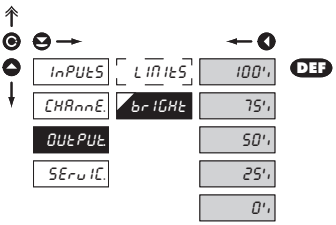


?

The process of setting the Limit 2 is identical with the setting for Limit 1

- LIM.L. 1 — Setting the boundary for relay switch-on
  - within the full display range
- HYS.L 1 — Setting hysteresis
  - within the full display range
  - indicates the range around the limit (inboth directions, LIM. ±1/2 HYS.)
- tIM.L 1 — Setting the offset of the relay switch-on
  - within the range 0...99,9 s

6.3.2 Display brightness



brIGHt **Setting the display brightness**

- by selecting the display brightness we may react properly to light conditions in place of location of the instrument
- brightness in the programming menu is always 100 %

0' Display is switched off

- display switches off after approx. 10 s and swichen on after pressing any key

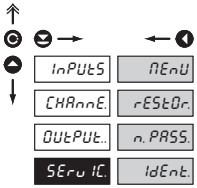
25' Display brightness - 25 %

50' Display brightness - 50 %

75' Display brightness - 75 %

100' Display brightness - 100 %

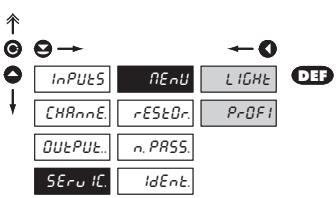
6.4 Setting "PROFI" - SERVICE



The instrument's service functions are set in this menu

- MEnU — Selection of menu type LIGHT/PROFI
- rESEt. — Restoration of the manufacture setting and instrument calibration
- n. PASS. — Setting new access password
- IdEnt. — IInstrument identification

6.4.1 Selection of the type of programming menu



MEnU — Selection of menu type LiGHT/PROFI

- allows to set the menu complexity as per user needs and abilities

LIGHt — Active LIGHT menu

- simple programming menu, contains only items necessary for instrument configuraction and setting
- linear menu structure > items in succession

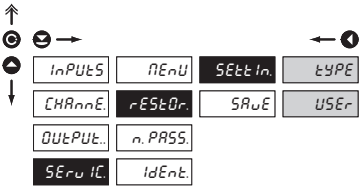
PrOFI — Active PROFI menu

- complete programming menu for expert users
- tree menu

!

Change of setting is valid upon next access into menu

6.4.2 Restoration of the manufacture setting



SEtt In. **Return to manufacture setting of the instrument**

tYPE Return to manufacture setting of the instrument

- reading the primary setting of items in menu (DEF)

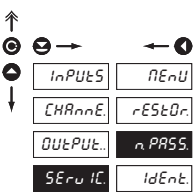
USEr Restore user setting of the instrument

- reading user setting of the instrument, i.e.setting stored under SERVIC./RESTOR/ SAVE

SAvE Save user setting of the instrument

- saving the setting allows the operator its future contingent restoration

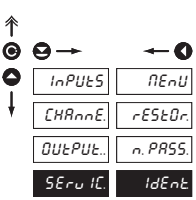
6.4.3 Setting new access password



n. PASS. **Setting new password for access into the LIGHT and PROFI menu**

- this option allows to change the numeral code, which protects the access into the LIGHT and PROFI Menu.
- numeral code range is 0...9999
- universal password in case of loss „8177"

6.4.4 Instrument identification



IdEnt. **Projection of instrument SW version**

- the display shows the type identification of the instrument, SW number, SW version and current input setting (Mode)
- if the SW version reads a letter on the first position, then it is a customer SW
- after the identification is completed the menu automatically quits the display and measuring mode is restored

7.0 "USER" menu configuration

- **USER** menu is designed for users who need to change only several items of the setting without the option to change the basic instrument setting (e.g. repeated change of limit setting)
- there are no default items from manufacture in **USER** menu
- menu configuration possible on items indicated by inverse triangle L 1
- setting may be performed in **LIGHT** or **PROFI** menu, with the **USER** menu then overtaking the given menu structure

- **For user operation**
- **Menu items are set by the user (Profi/Light) as per request**
- **Access is not password protected**

Setting

nO item will not be displayed in USER menu

YES item will be displayed in USER menu with the chance of editing

SHOu item will be solely displayed in USER menu

ERROR	CAUSE	ELIMINATION
E. d. Un	Number is too small (large negative) to be displayed	change DP setting, channel constant
E. d. Ou	Number is too large to be displayed	change DP setting, channel constant
E. t Un	Number is outside the table range	increase the table values, change input setting (channel constant)
E. t Ou	Number is outside the table range	increase the table values, change input setting (channel constant)
E. 1. Un	Input quantity is smaller than permitted input quantity range	change input signal value or input (range) setting
E. 1. Ou	Input quantity is larger than permitted input quantity range	change input signal value or input (range) setting
E. Hu	A part of the instrument does not work properly	send the instrument for repair
E. EE	Data in EEPROM corrupted	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
E. dAtA	Data in EEPROM outside the range	perform restoration of manufacture setting, upon repeated error statement send instrument for repair
E. CLr	Memory was empty (presetting carried out)	upon repeated error statement send instrument for repair, possible failure in calibration

INPUT

Type:	upon contact, TTL, NPN/PNP
Measurements:	1x counter/freq./repeat/phase UP or DOWN 1x stop-watch/watch - measuring range is adjustable
Frequency input:	0,1...50 kHz

PROJECTION

Display:	999999, intensive red or green 7-segment LED, digit height 9,1 mm
Projection:	-99999...999999
Decimal point:	adjustable - in programming mode
Brightness:	adjustable - in programming mode

INSTRUMENT ACCURACY

Temperature coef.:	50 ppm/°C
Accuracy:	±0,05 % from range (frequency)
Time base:	0,5/1/5/10/50 s
Calibrat. coefficient:	±0,00001....99999
Filtration constant:	allows to set maximum valid frequency, which is processed (OFF/10...2 000 Hz)
Type of filter:	sampling
PRESET:	-99999...999999
Functions:	Tare - display resetting Hold - stop measuring (upon contact) Lock - control keys locking
OM Link:	Company communication interface for instrument operation, setting and update
Watch-dog:	reset after 25 ms
Calibration:	at 25°C and 40 % r.h

COMPARATOR

Type:	digital, adjustable in the menu
Limits:	-99999...999999
Hysteresis:	0...99999
Delay:	0...99,9 s
Outputs:	2x relays with switch-on contact (Form A) (48 VAC/30 VDC, 3 A)*
Relay:	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

POWER SUPPLY

Options:	10...30 V AC/DC, isolated 80...250 V AC/DC, isolated

MECHANIC PROPERTIES

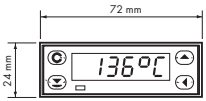
Material:	Noryl GFN2 SE1, incombustible UL 94 V-I
Dimensions:	72 x 24 x 106 mm
Panel cut-out:	68 x 22,5 mm

OPERATING CONDITIONS

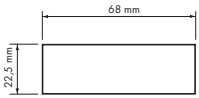
Connection:	connector terminal board, conductor cross-section <1,5 mm^2 /<2,5 mm^2
Stabilisation period:	within 15 minutes after switch-on
Working temp.:	0°...60°C
Storage temp.:	-10°...85°C
Cover:	IP42 (front panel only)
Construction:	safety class I
Overvoltage category:	EN 61010-1, A2
Insulation resistance:	for pollution degree II, measurement category III Instrument power supply, input (300 V)
EMC:	EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11; EN 550222, A1, A2

** values apply for resistance load*

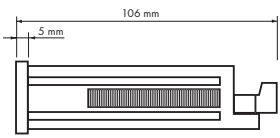
Front view



Panel cut



Side view



Panel thickness: 0,5...20 mm

Product	**OMM 650UC**
Type	. . . . .
Manufacturing No.	. . . . .
Date of sale	. . . . .

GUARANTEE

A guarantee period of 24 months from the date of sale to the user applies to this instrument.
Defects occuring during this period due to manufacture error or due to material faults shall be eliminated free of charge.

For quality, function and construction of the instrument the guarantee shall apply provided that the instrument was connected and used in compliance with the instructions for use.

The guarantee shall not apply to defects caused by:

- mechanic damage
- transportation
- intervention of unqualified person incl. the user
- unavoidable event
- other unprofessional interventions

The manufacturer performs guarantee and post.guarantee repairs unless provided for otherwise.

Y E A R S

Stamp, signature

DECLARATION OF CONFORMITY

Company: **ORBIT MERRET, spol. s r.o.**
Klánova 81/141, 142 00 Prague 4, Czech Republic, IDNo: 00551309

Manufactured: **ORBIT MERRET, spol. s r.o.**
Vodňanská 675/30, 198 00 Prague 9, Czech Republic

declares at its full responsibility that the product presented hereunder meets all technical requirements, is safe for use when utilised under the terms and conditions determined by ORBIT MERRET, spol.s r.o. and that our company has taken all measures to ensure conformity of all products of the type listed hereunder, which are being brought out to the market, with technical documentation and requirements of the appurtenant statutory orders.

Product: 6 -digit programmable panel instrument

Type: **OMM 650**

Version: UC

Conformity is assessed pursuant to the following standards:

Electrical safety:	EN 61010-1	
EMC:	EN 50131-1, chapter 14 and chapter 15	
	EN 50130-4, chapter 7	EN 61000-4-11
	EN 50130-4, chapter 8	EN 61000-4-11
	EN 50130-4, chapter 9	EN 61000-4-2
	EN 50130-4, chapter 10	EN 61000-4-3
	EN 50130-4, chapter 11	EN 61000-4-6
	EN 50130-4, chapter 12	EN 61000-4-4
	EN 50130-4, chapter 13	EN 61000-4-5
	EN 50130-5, chapter 20	
	prEN 50131-2-1, par. 9.3.1	
	EN 61000-4-8	
	EN 61000-4-9	
	EN 61000-3-2 ed. 2:2001	
	EN 61000-3-3: 1997, Cor. 1:1998, Z1:2002	
	EN 55022, chapter 5 and chapter 6	
and government ordinance:		
Electrical safety:	No. 168/1997 Sb.	
EMC:	No. 169/1997 Sb.	

The evidence are the protocols of authorized and accredited organization:

VTÚE Praha, experimental laboratory No. 1158, accredited by ČIA
VTÚPV Vyškov, experimental laboratory No. 1103, accredited by ČIA

Place and date of issue: Prague, 1. September 2006

Miroslav Hackl
Company representative

Mode of asses. of conformity: §12, par. 4 b, d of Act No. 22/1997 Sb.