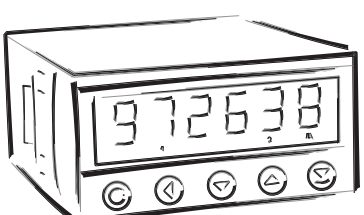
GUARANTEE
2
YEARS

OM 651UC

6 DIGIT PROGRAMMABLE

IMPULSE COUNTER
FREQUENCYMETER
STOP-WATCH/WATCH



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 OM 651 series conform to European regulation 89/336/EWG and Ordinance 168/1997 Coll.

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

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

CONNECTION

Power supply from the main line has to be isolated from the measuring leads.

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1. CONTENTS

2. INSTRUMENT DESCRIPTION

DESCRIPTION

The OM 651UC model is a universal 6 digit programmable panel impulse counter/frequency meter and stop--watch/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-channel counter	C-F
FREQUENCY	Frequency meter	C-F
STOPWATCH	Stopwatch	H
WATCH	Watch	H

Programmable display projection

Calibration	calibration coefficient may be set in „CM“
Projection	-99999...999999 with fixed DP, for measuring modes STOPWATCH/WATCH with option of setting in format 10/24/60
Time base:	0,5/1/2/5/10 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
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 control, setting and update

External control

Hold	display and outputs
Lock	control keys locking
Resetting	resetting to zero/presetting the counter

OPERATION

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

Configuration menu (hereinafter referred to as „CM“) is protected by an optional numeric code and containis complete instrument setting

User menu may contain arbitrary programming setting defined in CM with another selective restriction (see, change)

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

EXTENSION

Comparators are assigned to control two limit values with relay output. The limits have adjustable hysteresis within the full display range as well as selectable delay of the switch-on in the range 0...99,9 s. Reaching the preset limits is signalled by LED and by the switch-on of relevant relay.

Excitation is suitable for feeding sensors. It has a galvanic isolation with fixed value of 15 VDC.

Data outputs are for their rate and accuracy suitable for transmission of measured data for further projection or directly into the control systems. We offer isolated RS232 and RS485 with the ASCII protocol.

Analog outputs will find their place in applications where further evaluating or processing of measured data in external devices is required. We offer universal analog output with the option of selection of the output type - voltage/current. The analog output value corresponds with the displayed data and its type and range are selectable in the programming mode.

Time back-up by the RTC circuit is designed for the „WATCH“ measuring mode and secures time measurement even when the instrument is switched off (without projection on the display).

FIRMWARE *www.orbit.merret.cz/update*

Considering the continuous development and innovation of our products it is now possible to download the most recent program version for every instrument directly from web pages. To install the program, the HW programmer Flash Nec has to be used.

Prior performing the update it is possible to store all instrument settings and to restore all setting to initial status after the programming has been completed.

Number of the current program version in your instrument you can find in the „Configuration menu - service - identification“

! *The function for recording the new Firmware is supported in all instruments from version 060*

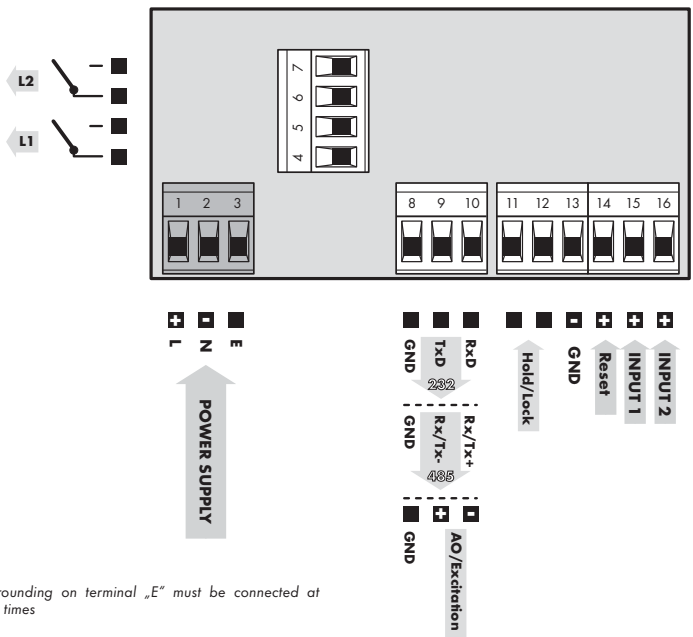
3. CONNECTION

The supply lead for feeding the instrument should not be in the proximity of low-potential input signals.

Contactors, motors with larger input and other efficient elements should not be in the proximity of the instrument.

The lead into the instrument input (the 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 and connect correctly (only on one side) to ground terminal GND (No.13) .

The instruments are tested in compliance with standards for use in industrial area, yet, we recommend to abide by the above mentioned principles.



! *Grounding on terminal „E" must be connected at all times*

CONNECTION

	Description	wiring
Input 1	input signal < 60 V	GND + Input 1
Input 2	input signal < 300 V	GND + Input 2
Resetting	input signal < 60 V	GND + Resetting

Function	Description	Control
Hold	Instrument blocking (display and outputs)	upon contact, terminal (No. 11/12)
Lock	Keyboard locking	upon contact, terminal (No. 11/12)

3.1 CONFIGURATION OF JUMPERS

Setting the comparator levels

J1 - Input 1/2
J2 - Reset

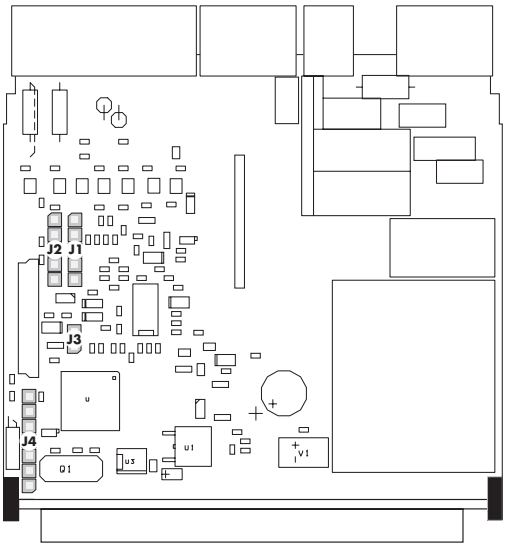
For settings see table

J3 - Battery

Connection battery for time backup

J4 - Programming conector

Service function



Jumpers J1, J2	Type of input	Input voltage	Comparator levels - Input 1*		Comparator levels - Input 2*	
			L > H	H > L	L > H	H > L
1 - 2	NPN, Contact	xxx	0,5 V	4,5 V	**Prohibited**	**Prohibited**
bez	TTL (PNP)	3 - 7,5 V	0,5 V	4,5 V	**Prohibited**	**Prohibited**
3 - 4	PNP	15 - 60 V	3,3 V	30 V	20 V	180 V
4 - 5	PNP	7,5 - 15 V	1,9 V	17 V	10 V	92 V
2 - 3	*!!! DO NOT CONNECT !!!*					

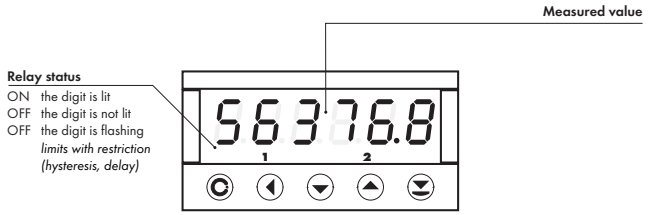
**values guaranteed in full temperature range of the instrument operation*

! *For each jumper setting disconnect the instrument from the net*

! *Relay parameters specified in the technical data apply for resistance load. Upon connection of the induction load we recommend to fit the leads to relay 1 A with a fuse for maximum load protection.*

4. INSTRUMENT SETTING

The instrument is set and controlled by 5 control keys located on the front panel. By means of these control keys it is possible to browse through the operting program, to select and set the required values.



CONFIGURATION MODE

- designated for professional service and maintenance
- complete instrument setting
- access is password protected
- authorization for "User mode"

USER MODE

- designated for instrument service
- may contain setting the limits, analog and data output and brightness, with restriction as per the setting in "Configuration mode"

SYMBOLS USED IN THE INSTRUCTIONS

DEF — Items indicated this way are preset from manufacture

C-F H — Indicates the setting for given type of instrument

CONTROL KEYS FUNCTIONS

MENU	ENTER	LEFT	DOWN	UP
Measuring mode				
menu access				
Moving around in the menu				
exit menu without saving	move to next level	back to previous level		move to next item
Setting/selecting - items				
cancel setting without saving	confirm selected item		move down	move up
Setting - numbers				
cancel setting without saving	confirm selected number	move to higher decade	change of current figure - down -	change of current figure - up -

SETTING THE DECIMAL POINT AND THE MINUS SIGN

DECIMAL POINT

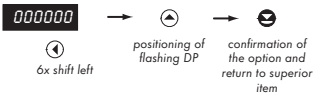
Upon modification of the edited number in the menu the decimal point is set by key ◀ with transition beyond the highest decade, when the decimal point starts flashing. Positioning is performed by ▲, and confirmation by ▼ with return into number editing.

Decimal point for display projection is set in item „CHANNEL > FORMAT" by selection from preset values.

MINUS SIGN

Setting the minus sign is performed on the highest valid degree by key ▲/▼.

The minus sign is in numeric row (0, 1, 2, 3...9, –).

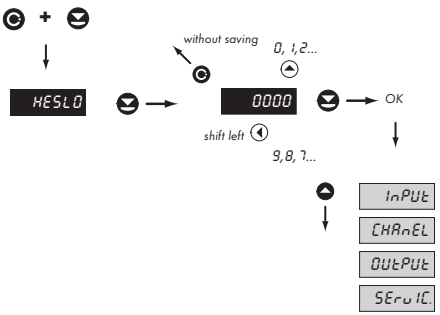


Setting

⇨ after transition beyond the highest decade ◀ the decimal point starts flashing

⇨ by pressing ▲ you will place the DP and confirmit by ▼

ACCESS INTO THE CONFIGURATION MODE



The code is always preset from manufacture to 0000. In case of loss of access password it is possible to use universal access code "8177"

4.1 MINIMUM INSTRUMENT SETTING

All settings are performed in the „Configuration menu"

❶ Selecting the measuring mode

MOdE **Setting the instrument measuring mode**

COUnt. Impulse counter

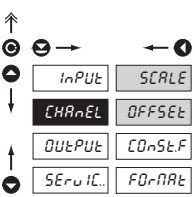
- *measures at Input 1 or 2*

FrEQu. Frequency meter

- *measures frequency at Input 1 or 2*

! *In "Mode 2" (stopwatch/watch) this item is not visible according to the order code*

❷ Setting display projection



rESEt **Setting basic channel parameters**

SCALE Calibration constant

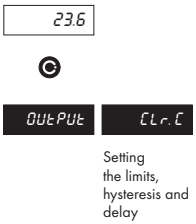
- *calibration constant is for the conversion of input value to required display value*
- *by setting the minus value the direction of counting changes, i.e. we count down*
- *range: -0,00001...999999*
- **DEF** = 1

OFFSEt Additive constant, PRESET"

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

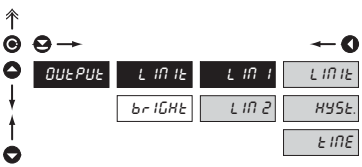
4.2 USER MENU

- designated for instrument service
- may contain setting the limits and brightness, with restriction as per the setting in "Configuration mode"



OUTPUT
Setting the instrument outputs

4.2.1 LIMITS - ENTERING VALUES



Adjustable authorization of access into items, see page 20

LIM - Entering limit values for status evaluations

LIMIT Setting limit for relay switch-on

- *in full display range*

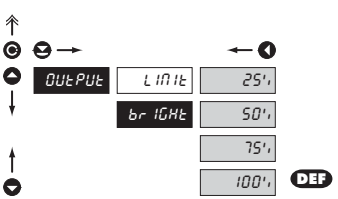
HYST. Setting hysteresis only in (+) values

- *in 1/10 of the display range*

TIME Setting delayed swith-on of the limit

- *in range 0...99,9 s*

4.2.2 SETTING THE DISPLAY BRIGHTNESS



bRIGHT Setting the display brightness

25' Brightness 25 %

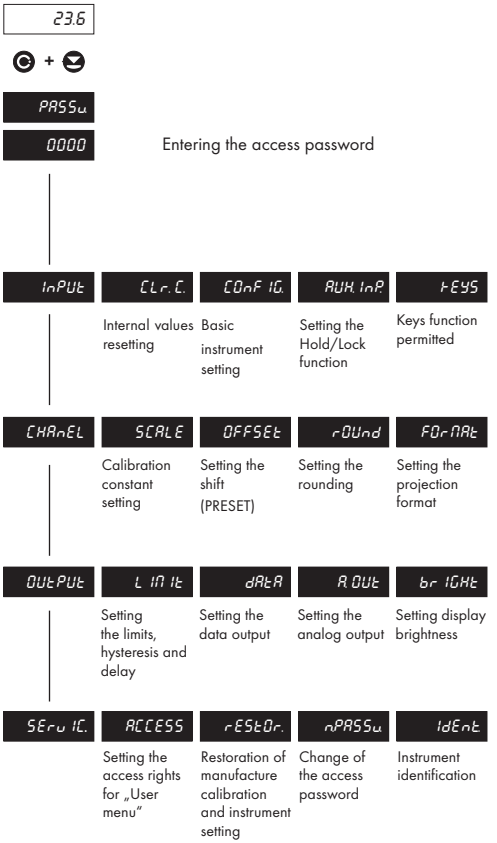
50' Brightness 50 %

75' Brightness 75 %

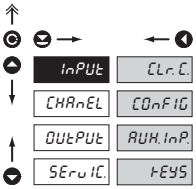
100' Brightness 100 %

4.3 CONFIGURATION MENU

- designated for professional service and maintenance
- complete instrument setting
- access is password protected
- authorization for "User mode"



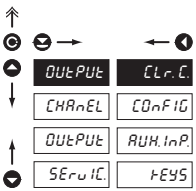
4.3.1 CONFIGURATION MODE - INPUTS



Here the basic instrument parameters are set

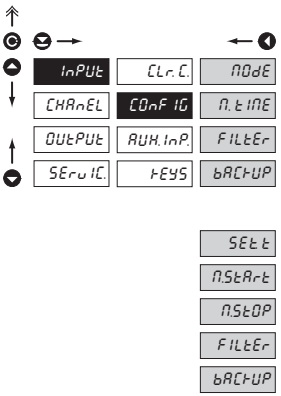
- CLr.C. — Resetting the counter to zero
- CONFIG — Basic instrument setting
- AUX.InP. — Setting the „Hold" or „Lock" functions
- tEYS — Povolení nulování tlačítkem „Enter"

4.3.1.1 RESETING THE COUNTER



CLr.C. **Resetting the counter**

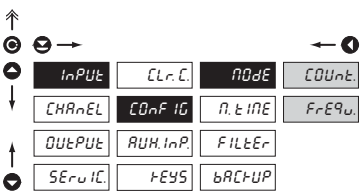
4.3.1.2 INSTRUMENT CONFIGURATION



CONF IG **Basic instrument setting**

- **MOdE** Setting the instrument measuring mode
- **n.tIME** Setting the time base
- **FILtEr** Setting the input filtration constants
- **bACKUP** Setting the data/time backup
- **SEt.t.** Time setting
- **n.StArt** Setting the stapwatch control
- **n.StOP** Setting the stopwatch resetting

4.3.1.2.1 SETTING THE MEASURING MODE

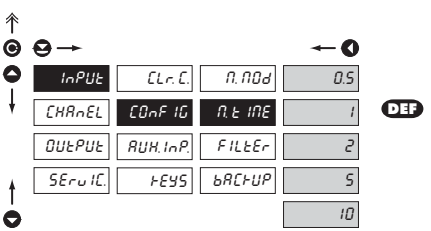


MOdE **Setting the instrument measuring mode**

- **COUnt.** Frequency meter counter
  - *at the input 1 or 2*
- **FrEQu.** Frequency meter
  - *measures frequency on Input 1 or 2*

! *In "Mode 2" (stopwatch/watch) this item is not visible according to the order code*

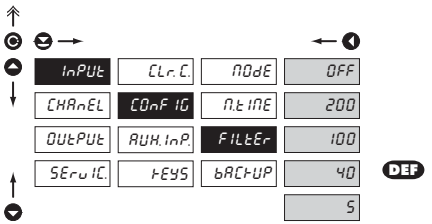
4.3.1.2.2 SETTING THE MEASURING TIME/TIME BASE



n.t IME **Setting the measuring time - 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 0,5 s to 10 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*

4.3.1.2.3 SETTING THE INPUT FILTER PARAMETERS

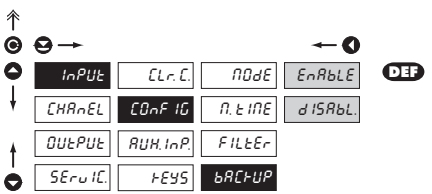


FILtEr **Setting the digital input filter**

- *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 using the filter

4.3.1.2.4 SETTING THE DISPLAY STATUS BACKUP



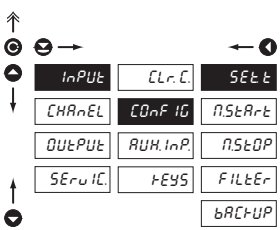
bACKUP **Setting the display status backup**

- *setting restoration of value on the display after power outage or instrument switchoff*

EnAbLE After switch-on instrument reads the display status from its memory

dISAbL. After switch-on instrument becomes reset to zero

4.3.1.2.5 TIME SETTING H

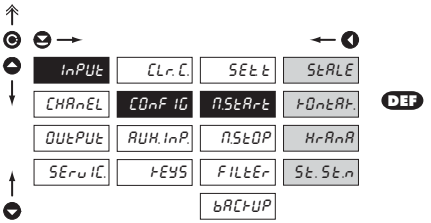


SEtt **Time setting**

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

4.3.1.2.6 SETTING THE STOP-WATCH/WATCH CONTROL

H



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

StALE Stop-watch/watch is running, if the instrument is on

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

HrAnA Stop-watch/watch is controlled by signal edge

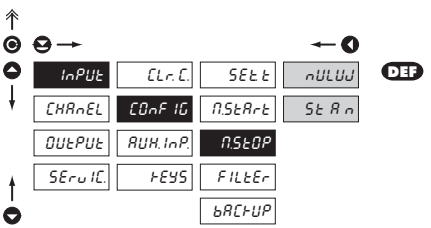
- *time is triggered by the edge (passage of the signal across the comparator level) and stopped by the next edge*

St.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 edge*

4.3.1.2.7 SETTING THE STOP-WATCH/WATCH CONTROL - RESETTING

H



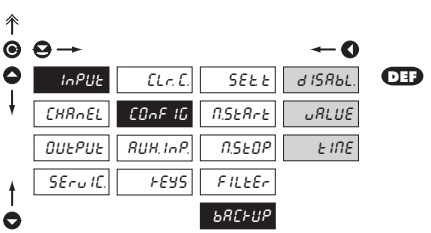
n.StOP **Setting the stop-watch resetting to zero**

nULLJJ Stop-watch/watch is reset to zero by input „Zeroizing"

St A n. Stop-watch/watch is stopped and reset to zero by input „Zeroizing"

4.3.1.2.8 SETTING THE DISPLAY STATUS BACKUP

H



bACkUP **Setting the display status backup**

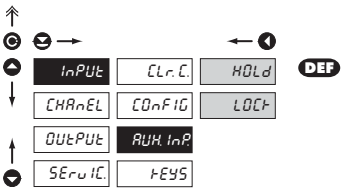
- *setting restoration of value on the display after power outage or instrument switchoff*

d ISAbL. After switch-on instrument becomes reset to zero

uALUE After switch-on instrument reads the display status from its memory

t IME Instrument reads „running" time from RTC

4.3.1.3 SETTING THE AUXILIARY INPUT



AUX. inP **Setting the auxiliary input**

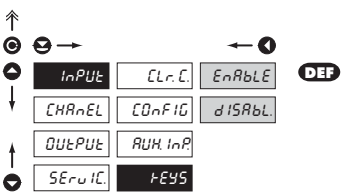
HOLd The auxiliary input controls the „HOLD" function

- *the input controls the HOLD function , display and outputs*

LOCK Auxiliary input controls the „LOCK" function

- *the input controls the blocking of the keys on the front panel*

4.3.1.4 PERMISSION TO RESET BY THE ENTER KEY

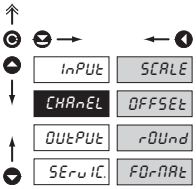


tEYS **Permission to reset by the „ENTER" key**

EnAbLE Resetting to zero by the ENTER keyis permitted

dISAbL. Resetting to zero by the ENTER key is prohibited

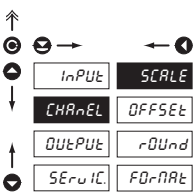
4.3.2 CONFIGURATION MODE - CHANNELS



Here the basic parameters of the instrument input values are set

SCALE	Calibration constant
n.PS.	Additive constant PRESET
rOUnd	Setting the data rounding
FOrMAt	Setting the projection format

4.3.2.1 SETTING THE CALIBRATION CONSTANT

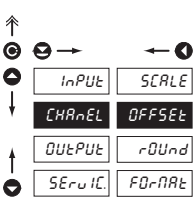


SCALE **Setting the calibration constant**

- *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

4.3.2.2 OFFSET SETTING

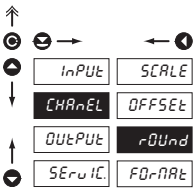


OFFSEt **Setting the additive constant „PRESET“**

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

- DEF = 0

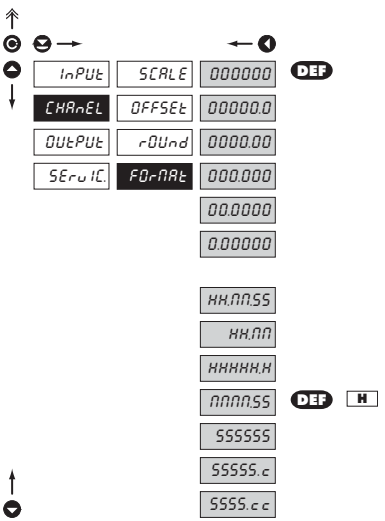
4.3.2.3 MEASURED VALUE ROUNDING



rOUnd **Measured value rounding**

- *it is set by an optional number which determines the projection step (e.g. step 2,5 - 0, 2.5, 5, 7.5, etc.)*

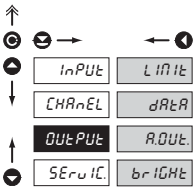
4.3.2.4 PROJECTION FORMAT



FOrMAt **Setting the projection format**

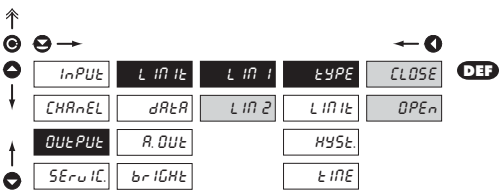
- *the instrument enables projection of a number with decimal positioning of the decimal point*
- *for projection of time there are also other forms of projection*

4.3.3 CONFIGURATION MODE - OUTPUT



LIMItA	Setting the functions and type of limits switch-on
dAtA	Setting the type and parameters of data output
A. OUt.	Setting the type and parameters of analog output
brIGHt	Setting the display brightness

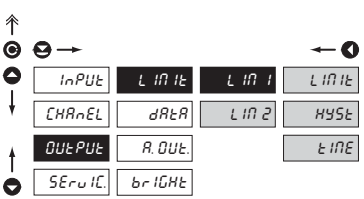
4.3.3.1.1 LIMITS - SETTING THE RELAY MODE



tYPE **Setting the relay switching mode**

CLOSE	The relay switches on when the condition is met
OPEn	The relay switches off when the condition is met

4.3.3.1.2 LIMITS - SETTING THE BOUNDARIES



LIN - **Setting the values for limits evaluation**

LIMIt	Setting limit for relay switch on

- *in full display range*

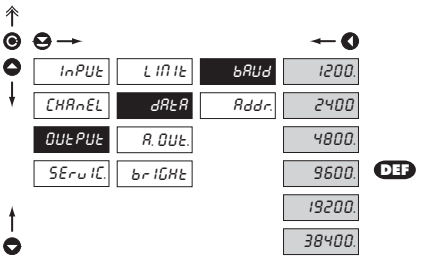
HYSt	Setting hysteresis only in (+) values

- *in 1/10 of the display range*

tIME	Setting the delay of the limit switch-on

- *in range 0...99,9 s*

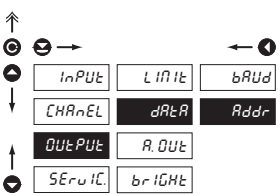
4.3.3.2.1 DATA OUTPUT - SETTING THE TRANSMISSION RATE



bAUd **Setting the rate of data output (baud)**

1200	Rate - 1 200 Baud
2400	Rate - 2 400 Baud
4800	Rate - 4 800 Baud
9600	Rate - 9 600 Baud
19200	Rate - 19 200 Baud
38400	Rate - 38 400 Baud

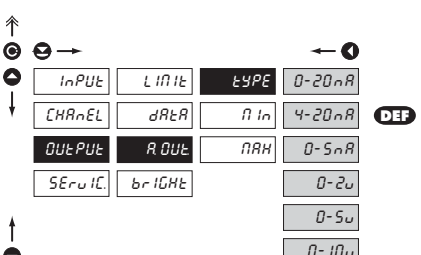
4.3.3.2.2 DATA OUTPUT - SETTING THE INSTRUMENT ADDRESS



Addr **Setting the instrument address**

- *setting in the range of 0...31*
- *manufacture setting 00* **DEF**

4.3.3.3.1 ANALOG OUTPUT - SETTING THE TYPE

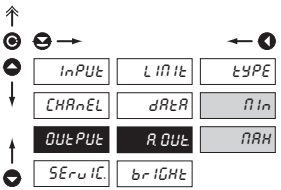


tYPE **Setting the type of analog output**

- *current and voltage outputs are galvanically separated*

0-20mA	Output: 0...20 mA
4-20mA	Output: 4...20 mA
0-5mA	Output: 0...5 mA
0-2 v	Output: 0...2 V
0-5 v	Output: 0...5 V
0-10 v	Output: 0...10 V

4.3.3.3.2 ANALOG OUTPUT - SETTING THE RANGE



A.OUT **Setting the range of the analog output**

- *analog output is isolated and its value corresponds with the displayed data. It is fully programmable, i.e. it enables to assign the AO limit points to two arbitrary points from the entire measuring range*

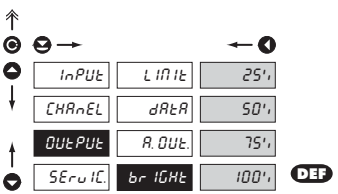
MIN. Assigning the display value to the beginning of the range of the analog output

- *range of the setting is* -99 999...999 999

MAX Assigning the display value to the end of the range of the analog output

- *range of the setting is* -99 999...999 999

4.3.3.3.3 SETTING THE DISPLAY BRIGHTNESS



BRIGHT **Setting the display brightness**

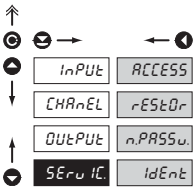
25% Brightness 25 %

50% Brightness 50 %

75% Brightness 75 %

100% Brightness 100 %

4.3.4 CONFIGURATION MODE - SERVICE



ACCESS	Setting the access rights for „User mode“
rESEt	Return to manufacture calibration or setting
n.PASSu.	Change of the access password
IdEnt	Instrument identification

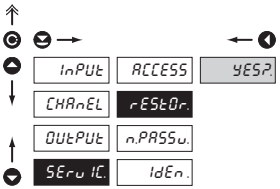
4.3.4.1 SETTING THE ACCESS RIGHTS FOR „USER MODE“ - LIMITS

LIM -	**Nastavení přístupových práv do Limit v „UM“**
LIMIt	Authorization for item „LIMIT“, setting the limit
HYSt	Authorization for item „HYST.“, setting hysteresis
tIME	Authorization for item „TIME.“, setting the switch-on delay

In all items the following parameters may be selected

dISAbL	The item is not projected in the „UM
SHOu	The item is projected in the „UM“ but cannot be changed
Edit	The item has full access in the „UM“ incl.editing

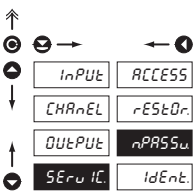
4.3.4.2 RETURN TO MANUFACTURE CALIBRATION/SETTING



rESEOr. Return to manufacture calibration and instrument 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 choice „Yes?"*

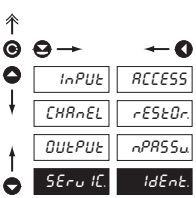
4.3.4.3 SETTING NEW ACCESS PASSWORD



nPASSu Setting new access password for „Configuration menu"

- *this selection allows to change the numeric code which blocks the access into the „Configuration mode" of the instrument. Range of the numeric code is 0...9999*

4.3.4.4 INSTRUMENT IDENTIFICATION



IdEnt Projection of the instrument version

- *the display shows the type identification of the instrument with the inspection number*
- *name of the instrument - measuring mode - version SW + hour SW - date (DD/MM/YY)*

5. DATA PROTOCOL

The instruments communicate via serial line RS232 or RS485. For communication they use the ASCII protocol. The communication is running in the following format:

ASCII: 8 bit, no parity, one stop bit

Transmission rate is adjustable in the instrument menu and depends on the used control processor. The instrument address is set in the instrument menu in the range of 0...31. Manufacture setting always presets the ASCII protocol, rate of 9600 Baud, address 00. Type of line used - RS232 / RS485 - is determined by exchangeable card automatically identified by the instrument.

COMMANDS FOR INSTRUMENT OPERATION

The commands are described in the description which can be found at **www.orbit.merret.cz/rs**.
A command consists of a couple number-letter, where the letter size is of importance.

COMMANDS NOT LISTED IN THE MENU

1M	⇉ D	Send minimum value
2M	⇉ D	Send maximum value
1X	⇉ T	Send display value, data format „R <SP> DDDDDDDD“
1Z	⇉ H	Send HW instrument configuration
1x	⇉ D	Send output value from filter of Channel A

6. ERROR STATEMENTS

ERROR	REASON	ELIMINATION
Er. Und.	range underflow	change the input signal value or change display projection
Er. Our.	range overflow	change the input signal value or change display projection
ErrOr	incorrect access password into Configuration mode	repeat the command with correct password
Er.EnEn	violation of data integrity in EEPROM, error upon data storage	in case of recurring report send the instrument for repai
ErnEn.	EEPROM error	the „Def" values will be used in emergency, instrument needs to be sent for repair

7. TECHNICAL DATA

INPUT

Type:	upon contact, TTL, NPN/PNP
Measurements:	1x counter/freq./repeat/phase UP or DOWN 2x counter/frequency UP nebo DOWN 1x counter/frequency UP/DOWN 1x counter/frequency UP/DOWN pro IRC 1x stop-watch/watch - measuring range is adjustable
Input frequency:	0,1...50 kHz

PROJECTION

Display:	999999, intensive red or green 14-segment LED, digit height 14 mm
Projection:	-99999...999999
Decimal point:	adjustable - in programming mode
Brightness:	adjustable - in programming mode

INSTRUMENT ACCURACY

Temp.coefficient:	50 ppm/°C
Accuracy:	±0,05 % of range (frequency)
Time base:	0,5/1/5/10 s
Calibrat.coefficient:	±0,00001....99999
Filtration constant:	allows to set maximum valid frequency, which is processed (OFF/5...200 Hz)
Type of filter:	sampling
Pre-setting:	-99999...999999
Functions:	data backup - storing measured data even after the instrument switches off (EEPROM) Hold - stop display and outputs (upon contact) Locking the keyboard (upon contact)
Watch-dog:	reset after 20 ms
Calibration:	at 25°C and 40 % r.h.

COMPARATOR

Type:	digital, adjustable in menu contact switch-on < 50 ms
Limits:	-99999...99999
Hysteresis:	0...99999
Delay:	0...99,9 s
Outputs:	2x relays with switching contact (230 VAC/30 VDC, 3 A)*
Relays:	1/8 HP 277 VAC, 1/10 HP 125 V, Pilot Duty D300

DATA OUTPUTS

Protocols:	ASCII
Data format:	8 bit + no paritx + 1 stop bit
Rate:	1 200...38 400 Baud
RS 232:	isolated, two-way communication
RS 485:	isolated, two-way communication, addressing (max. 31 instruments)

ANALOG OUTPUTS

Type:	isolated, programmable with resolution of max. 10 000 points, analog output corresponds with the displayed data, type and range are adjustable
Non-linearity:	0,2 % of the range
TC:	100 ppm/°C
Rate:	response to change of value< 100 ms
Voltage:	0...2 V/5 V/10 V
Current:	0...5/20 mA/4...20 mA - compensation of conduct up to 600 Ohm

EXCITATION

Fixed:	15 VDC/25 mA, isolated

POWER SUPPLY

Options:	24/110/230 VAC, 50/60 Hz, ±10 %, 3 VA 10...30 VDC/max. 250 mA (24 VDC/90 mA),
Protection:	melting fuse inside the instrument VAC (T 80 mA), VDC (T 630 mA)

MECHANIC PROPERTIES

Material:	Noryl GFN2 SE1, nehořlavý UL 94 V-I
Dimensions:	96 x 48 x 120 mm
Panel cut-out::	90,5 x 45 mm

OPERATING CONDITIONS

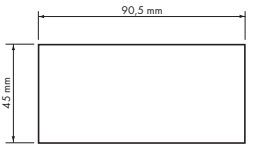
Connection:	connector terminal board, conductor cross section up to 2,5 mm^2
Stabilisation period:	within 15 minutes after switch-on
Working temp.:	0°...60°C
Storage temp.:	-10°...85°C
Cover:	IP65 (front panel only)
Construction:	safety class I
Overvoltage categ.:	ČSN EN 61010-1, A2 III. - instrument power supply (300 V) II. - input, output, excitation (300 V) for pollution degree II
EMC:	EN 61000-3-2+A12; EN 61000-4-2, 3, 4, 5, 8, 11; EN 550222, A1, A2

** values apply for resistance load*

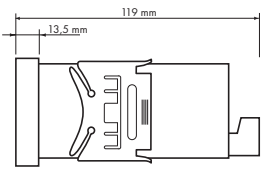
8. INSTRUMENT DIMENSIONS AND INSTAL.

Front view

Panel cut



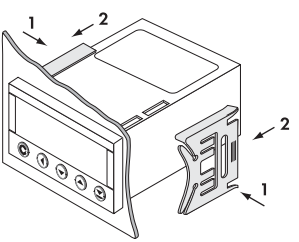
Side view

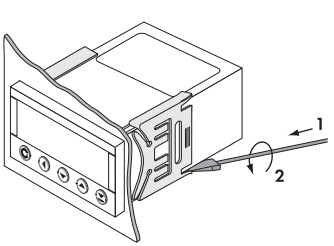


Panel thickness: 0,5...20 mm

Instrument installation

1. insert the instrument into the panel cut-out
2. fit both travellers on the box
3. press the travellers close to the panel





Instrument disassembly

1. slide a screw driver under the traveller wing
2. turn the screw driver and remove the traveller
3. take the instrument out of the panel

9. CERTIFICATE OF GUARANTEE

Product	**OM 651UC**
Type	. . . . .
Manufacturing No	. . . . .
Date of sale	. . . . .

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

The guarantee shall not apply for defects caused by:

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

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

Stamp, signature

DECLARATION OF CONFORMITY

Assessment of konformity pursuant to Section 12, par. 4 b, d of Act No. 22/1997 Sb..

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

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

prohlašuje na svou výlučnou odpovědnost, že níže uvedený výrobek splňuje požadavky technických předpisů, že výrobek je za podmínek námi určeného použití bezpečný a že jsme přijali veškerá opatření, kterými zabezpečujeme shodu všech výrobků níže uvedeného typu, uváděných na trh, s technickou dokumentací a s požadavky příslušného nařízení vlády.

Product: 6 digit measuring instruments

Type: **OM 651**

Version: UC

Conformity is assessed pursuant to the following standards:

Electr. safety: EN 61010-1

EMC:
EN 50131-1, chapt. 14 and chapt. 15
EN 50130-4, chapt. 7 EN 61000-4-11
EN 50130-4, chapt. 8 EN 61000-4-11
EN 50130-4, chapt. 9 EN 61000-4-2
EN 50130-4, chapt. 10 EN 61000-4-3
EN 50130-4, chapt. 11 EN 61000-4-6
EN 50130-4, chapt. 12 EN 61000-4-4
EN 50130-4, chapt. 13 EN 61000-4-5
EN 50130-5, chapt. 20
prEN 50131-2-1, article 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, chapt. 5 and chapt. 6.

As evidence serve the protocols of authorised and accredited organisations:
VTÚE Praha, examination laborator No. 1158, accredited by ČIA
VTÚPV Vyškov, examination laborator No. 1103, accredited by ČIA

Prague, 18. 12. 2003

Miroslav Hackl v.r.
General manager