



Stainless steel clock for wall, ceiling
or flush mounting

SLH-DC, SLH-OPD, SLH-OP series

The models series SLH-DC, SLH-OPD and SLH-OP are optimally suited for use in operating rooms, clean room environments, chemical plants, laboratories, swimming and fitness centers, as well as in the food and beverage industry, canteen, kitchens, etc. ▪ various synchronization options ▪ anti-glare front polycarbonate glass ▪ protection against water jets, easily washable with water and detergents, harmless to health, reliable ▪ simple keyboard / IR control ▪ protection IP 54 make the product suitable for various purposes

SLH - DC

Digital clock with stopwatch function, stainless housing, ideal for operating rooms

ADVANTAGES

- high-quality stainless steel housing
- flush design, wall or ceiling mounting brushed stainless steel frame, simple installation thanks to magnetic system
- easily washable with water
- high resistance to washing disinfectants
- anti-glare polycarbonate front glass prevents glare and improves readability
- dust-proof housing, splash proof, IP 54

CLOCK

- display of time values (either 12 or 24 hours time cycle), six-digit, HH:MM^{SS} format
- display of calendar date in six-digit, DD.MM.YY format
- display of temperature in °C or °F, up to two sensors connectable

DISPLAY FEATURES

- 7-segment LED display
- digit height for hours and minutes 57 resp. 100 mm, for seconds 38 resp. 57 mm
- readability distance of 25 or 40 m
- single-line or two-line display
- digits in red, pure green, blue, yellow, white or green colour
- manual or automatic adjustment of the luminosity of LED displays
- excellent visibility, even from extremely sharp angles
- alternating time, date and temperature display, duration of the display can be customized

HOUSING

- single or double sided design, flush or wall mounting (only for single sided clock design), ceiling suspension
- simple assembly using the magnetic system
- stainless steel clock frame (1.4301, AISI 304, brushed) particularly resistant to acids, cleaning and disinfectant, protected against direct sprays from all direction (limited ingress permitted) and dust
- other kind of stainless steel material on request
- easy installation
- structural depth 65/95 mm of single/double sided design respectively
- anti-glare polycarbonate front glass prevents reflections and improves the readability
- mineral glass on special request
- working temperature 0 to + 50°C
- protection degree IP 54



CLOCK AND STOPWATCH CONTROL

- operation of the clock and stopwatch operation via stainless steel keyboard or remote IR controller



STOPWATCH

- counting upwards from zero, up to 24 hours
- counting downwards from a specified value, with stop at zero, with automatic restart or counting into negative values
- display of intermediate time values, "freezing" of display, cumulated intermediate time
- counting in steps of 1 minute, 1 second or 1/100 seconds
- operation via keyboard or remote IR controller
- possibility to connect another display unit(s)
- possibility of parallel switching over into the time/date or temperature display mode

FOR NTP, PoE and WiFi VERSION ONLY:

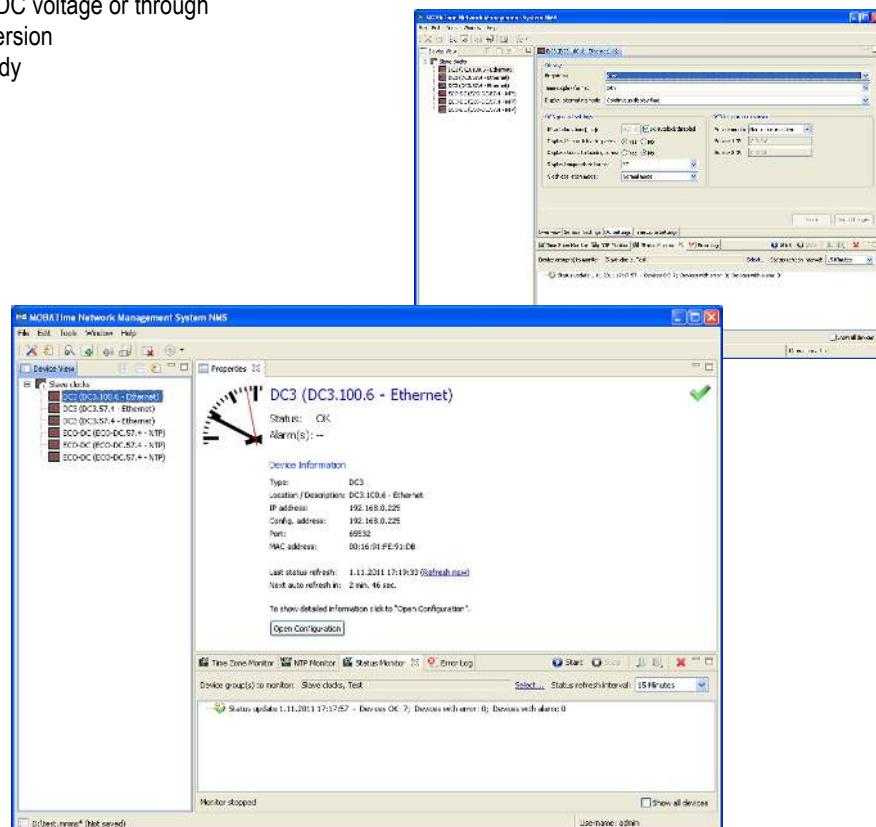
- DHCP / manual configuration of the clock parameters or setting over the telnet
- private options of DHCP string for automatic configuration of all clock parameters when connected to network
- configuration and monitoring using MOBA-NMS software or SNMP
- firmware update remotely through the network using the TFTP protocol
- powered from mains with wide input voltage range 100 -240VAC, optionally from 24 VDC voltage or through PoE (IEEE 802.3af) by NTP version
- NTP and PoE version IPv6 ready

OPERATION

- setting of the clock parameters and time – date setting by stopwatch keyboard or through IR remote controller
- autonomous quartz time base with the possibility of synchronization by means of the DCF 77 signal or by GPS signal
- more digital clocks can be connected to one DCF 77 radiosignal or GPS receiver in series

SYNCHRONIZATION TYPES

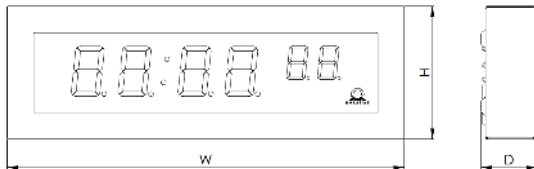
- DCF 77
- GPS
- MOBALine
- NTP over Ethernet or WiFi (IEEE 802.11b/g)
- IRIG-B
- (un)polarized 24 VDC (minute, half minute and second pulses)
- RS 232
- RS 485
- MOBATIME serial code



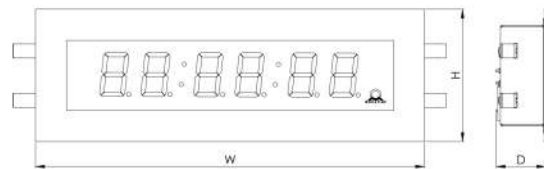
MOBA-NMS software allows configuration, monitoring and management of complete time system from single point in the network.

SHL-DC examples of design

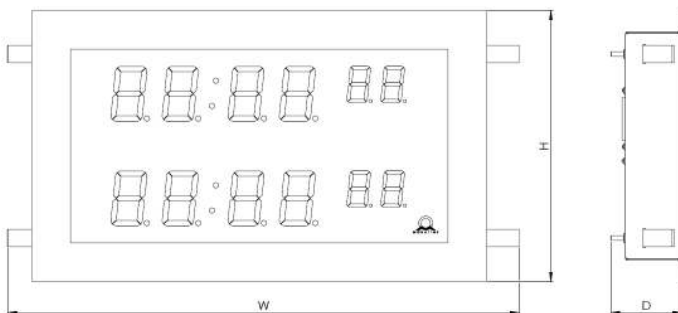
SLH-DC.57.6.R.N.N



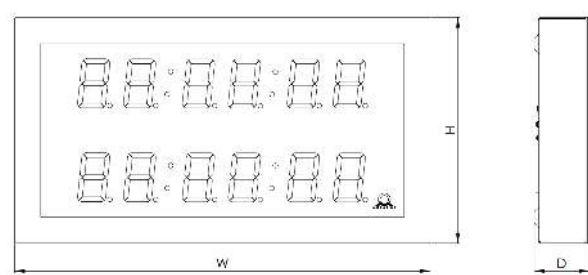
SLH-DC.57x.6.R.N.F



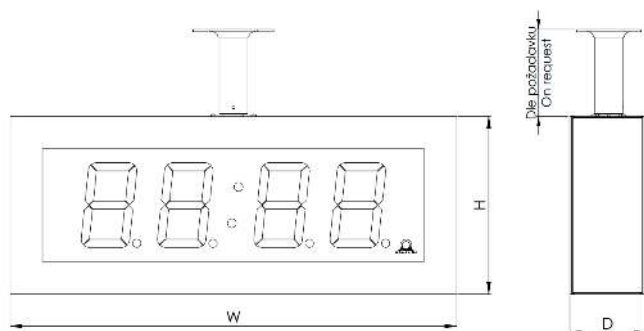
SLH-DC.57x.6.2.R.N.N



SLH-DC.57.6.2.R.N.F



SLH-DC.100.4.R.D.S



Order reference SHL-DC

SLH-DC • 1 • 2 • 3 • 4 • 5 • 6 • 7 • 8 • 9

<p>1 Digit height</p> <table border="0"> <tr><td>57 mm (height of first 4 digits)</td><td>57</td></tr> <tr><td>57 mm (height of all 6 digits)</td><td>57x</td></tr> <tr><td>100 mm (height of first 4 digits)</td><td>100</td></tr> <tr><td>100 mm (height of all 6 digits)</td><td>100x</td></tr> </table> <p>2 Number of digits</p> <table border="0"> <tr><td>four digits</td><td>4</td></tr> <tr><td>six digits</td><td>6</td></tr> </table> <p>3 Number of lines</p> <table border="0"> <tr><td>1 line</td><td>-</td></tr> <tr><td>2 lines</td><td>2</td></tr> </table> <p>4 Display colour</p> <table border="0"> <tr><td>red</td><td>R</td></tr> <tr><td>pure green</td><td>PG</td></tr> <tr><td>blue</td><td>B</td></tr> <tr><td>green</td><td>G</td></tr> <tr><td>yellow</td><td>Y</td></tr> <tr><td>white</td><td>W</td></tr> </table> <p>5 Clock design</p> <table border="0"> <tr><td>single sided</td><td>N</td></tr> <tr><td>double sided</td><td>D</td></tr> </table> <p>6 Mounting</p> <table border="0"> <tr><td>wall mounting (for single side clock only)</td><td>N</td></tr> <tr><td>ceiling suspension (conventionally 5, 10, 30, 50 cm)</td><td>S</td></tr> <tr><td>flush mounting</td><td>F</td></tr> </table>	57 mm (height of first 4 digits)	57	57 mm (height of all 6 digits)	57x	100 mm (height of first 4 digits)	100	100 mm (height of all 6 digits)	100x	four digits	4	six digits	6	1 line	-	2 lines	2	red	R	pure green	PG	blue	B	green	G	yellow	Y	white	W	single sided	N	double sided	D	wall mounting (for single side clock only)	N	ceiling suspension (conventionally 5, 10, 30, 50 cm)	S	flush mounting	F	<p>7 Version</p> <table border="0"> <tr><td>standard version - autonomous / MBL / (un)polarized 24 VDC</td><td>STD</td></tr> <tr><td>standard version with built-in RS 232, RS 485, IRIG-B interface</td><td>SI</td></tr> <tr><td>Ethernet version, synchronized by NTP, 230 VAC powered</td><td>NTP</td></tr> <tr><td>Ethernet version, synchronized by NTP and PoE powered</td><td>PoE</td></tr> <tr><td>Ethernet version, synchronized by NTP and PoE (IEEE 802.3af-Class 3) powered</td><td>PoE_{class}</td></tr> <tr><td>WiFi version, synchronized by NTP</td><td>*WiFi</td></tr> </table> <p>8 Option</p> <table border="0"> <tr><td>powered by 18 - 56 VDC</td><td>VDC</td></tr> <tr><td>powered by 12 - 16 VDC</td><td>VDC 12V</td></tr> <tr><td>internal relay</td><td>REL</td></tr> <tr><td>internal relay + FW for switching functions</td><td>REL-IP</td></tr> </table> <p>9 Accessories</p> <table border="0"> <tr><td>remote IR controller</td><td>IR</td></tr> <tr><td>DCF77 radio signal receiver</td><td>AD 650</td></tr> <tr><td>GPS receiver including antenna</td><td>GPS 4500</td></tr> <tr><td>stainless steel keyboard for clock and stopwatch control, cable 5 m, handheld</td><td>SKH</td></tr> <tr><td>stainless steel keyboard for clock and stopwatch control, flush mounting</td><td>SKF</td></tr> <tr><td>stainless steel keyboard for clock and stopwatch control, wall mounting</td><td>SKW</td></tr> <tr><td>temperature sensor, IP 66, cable 3 m</td><td>TP 3m</td></tr> <tr><td>temperature sensor, IP 66, cable 30 m</td><td>TP 30m</td></tr> <tr><td>temperature sensor with RS 485 interface, power supply 12 VDC, cable between sensor and interface 3 m, for SI version only</td><td>TP RS485</td></tr> <tr><td>temperature sensor with Ethernet interface, power supply 5 VDC, cable between sensor and interface 3 m, for NTP, PoE and WiFi version only</td><td>TP LAN</td></tr> </table>	standard version - autonomous / MBL / (un)polarized 24 VDC	STD	standard version with built-in RS 232, RS 485, IRIG-B interface	SI	Ethernet version, synchronized by NTP, 230 VAC powered	NTP	Ethernet version, synchronized by NTP and PoE powered	PoE	Ethernet version, synchronized by NTP and PoE (IEEE 802.3af-Class 3) powered	PoE _{class}	WiFi version, synchronized by NTP	*WiFi	powered by 18 - 56 VDC	VDC	powered by 12 - 16 VDC	VDC 12V	internal relay	REL	internal relay + FW for switching functions	REL-IP	remote IR controller	IR	DCF77 radio signal receiver	AD 650	GPS receiver including antenna	GPS 4500	stainless steel keyboard for clock and stopwatch control, cable 5 m, handheld	SKH	stainless steel keyboard for clock and stopwatch control, flush mounting	SKF	stainless steel keyboard for clock and stopwatch control, wall mounting	SKW	temperature sensor, IP 66, cable 3 m	TP 3m	temperature sensor, IP 66, cable 30 m	TP 30m	temperature sensor with RS 485 interface, power supply 12 VDC, cable between sensor and interface 3 m, for SI version only	TP RS485	temperature sensor with Ethernet interface, power supply 5 VDC, cable between sensor and interface 3 m, for NTP, PoE and WiFi version only	TP LAN
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Note : * WiFi version isn't available for flush mounting

ORDER EXAMPLE

SLH-DC.100.6.PG.N.N.PoE

Digital clock in stainless steel housing, 7segment display, digits height 100/57 mm, 6 digits, showing hour, minute and second (HH:MM^{SS}) respectively day, month and year (DD.MM.^{YY}), pure green colour, single-sided, wall mounting, network version synchronised by NTP and PoE powered



SLH - OP / SLH - OPD

The sturdy and elegant interior analog clock / analog clock with display in stainless steel housing. This clock is intended for indoor use, for wall mounted and flush mounting.



ADVANTAGES

- flush design, wall or ceiling mounting brushed stainless steel frame
- simple installation thanks to magnetic system
- integrated wall mount housing for protection against dust and dirt
- highly transparent anti-glare mineral float front glass prevents reflections and improves the readability
- LED display for displaying date, temperature, stopwatch, eventually time
- highly resistant to disinfectants

HOUSING

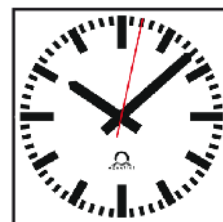
- stainless steel clock frame (1.4301, AISI 304, brushed) particularly resistant to acids, cleaning and disinfectant, protected against direct sprays from all direction (limited ingress permitted) and dust
- simple installation thanks to magnetic system
- highly resistant against and disinfection agents
- galvanized wall mounting housing with low installation depth of just 76 mm
- protection class IP 54

DISPLAY FEATURES for SLH-OPD

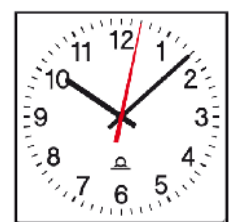
- 7-segment LED display
- digit height 38 mm
- readability distance of 16 m
- digits in red, pure green, blue, yellow, white or green colour
- manual or automatic adjustment of the luminosity of LED displays
- excellent visibility, even from extremely sharp angles
- alternating time, date and temperature display, duration of the display can be customized

STOPWATCH for SLH-OPD

- counting upwards from zero, up to 24 hours
- counting downwards from a specified value, with stop at zero, with automatic restart or counting into negative values
- display of intermediate time values, "freezing" of display, cumulated intermediate time
- counting in steps of 1 minute, 1 second or 1/100 seconds
- operation via keyboard or remote IR controller
- possibility to connect another display unit(s)
- possibility of parallel switching over into the time/date or temperature display mode



dial type 300



dial type 310

DIAL AND HANDS

- dial made of aluminum 248 x 248 mm, white with black print:
 - standard style "type 300" or
 - arabic numbers "type 310"
- hands made of aluminum: h/m in black, s in red
- dial and hands according to DIN 41091/92

SLH-OP / SLH-OPD CLOCKS ARE AVAILABLE WITH THE FOLLOWING MOVEMENTS:

SAM 40 / SEM 40

Self-setting and maintenance-free MOBALine movement. The SAM 40 movement is available with hour and minute hands whereas the SEM 40 has an additional second hand.

Both movements are self-setting and powered via MOBALine.

Running mode of minute and second hands adjustable by means of DIP switches: stepwise or continuous.

SAN 40 / SEN 40

Self-setting and easy-to-use LAN movement. The SAN 40 movement is available with hour and minute hands whereas the SEN 40 has an additional second hand.

Voltage supply by PoE (Power over Ethernet). Running mode of minute and second hands adjustable by means of DIP switches: stepwise or continuous.

A

Minute impulse movement for operation as a standard minute impulse analog clock, 24 or 48 V.

The A 40 movement is available with hour and minute hands.

The slave analog clocks are controlled by a master clock by polarized pulses, which are completely immunity to interference.

Technical Data								
Clock type	Movement type	Diameter	h / m hands	h / m / s hands	24 V minute pulses	MOBALine	LAN / NTP multicast	PoE (Power over Ethernet)
SLH-OP	A	245	✓		✓			
SLH-OP	SAM	245	✓			✓		
SLH-OP	SEM	245		✓		✓		
SLH-OP	SAN	245	✓				✓	✓
SLH-OP	SEN	245		✓			✓	✓



ORDER EXAMPLE

SLH-OPD.SEN.F.300.R.PoE

Analog clock with LED display; controlled by FTP protocol, an additional second hand, flush mounting, dial type 300, display in red, synchronized by NTP and PoE powered

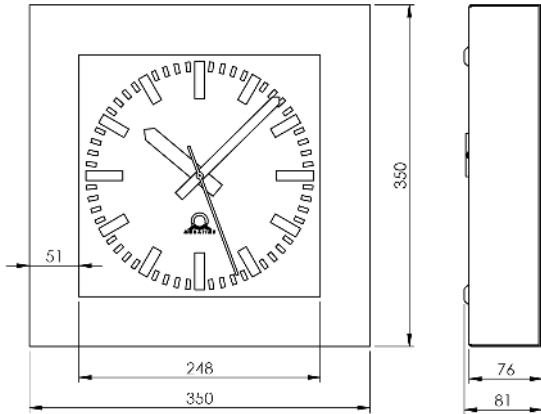
Order reference SHL-OP/OPD

SLH-OP/OPD • 1 • 2 • 3 • 4 • 5

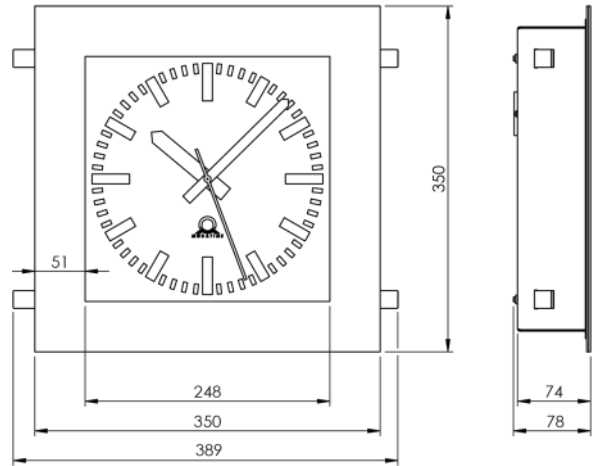
1	Movement	
	minute impulse movement	A
	self-setting MOBALine movement, h/m	SAM
	self-setting MOBALine movement, h/m/s	SEM
	self-setting LAN movement, h/m	SAN
	self-setting LAN movement, h/m/s	SEN
2	Mounting	
	wall mounting	N
	flush mounting	F
3	Dial type	
	normal bar form	300
	arabic numbers	310

4	Display colour (for SLH-OPD only)	
	red	R
	pure green	PG
	blue	B
	green	G
	yellow	Y
	white	W
5	Version (for SLH-OPD only)	
	standard version - autonomous / MBL / (un)polarized 24 VDC	STD
	Ethernet version, synchronized by NTP and PoE powered	PoE
	Ethernet version, synchronized by NTP and PoE (IEEE 802.3af-Class 3) powered	PoE _{class}

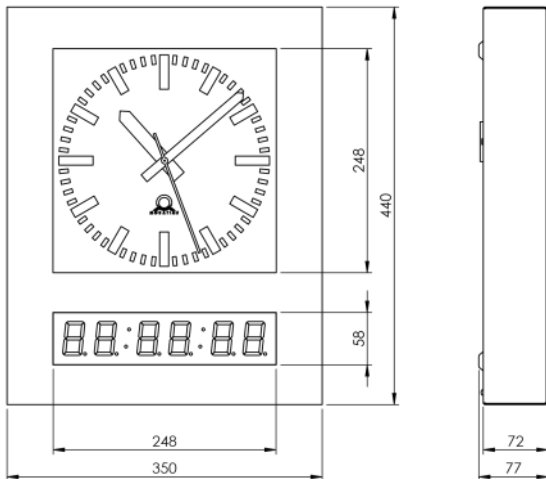
SLH-OP.x.N.300



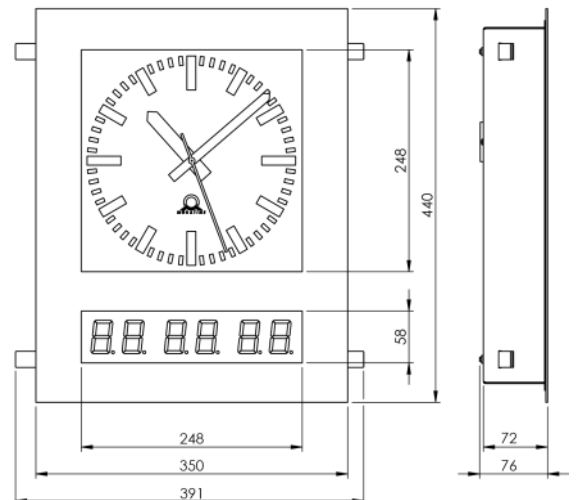
SLH-OP.x.F.300



SLH-OPD.x.N.300.R.x



SLH-OPD.x.F.300.R.x



Specification		SLH-DC.57.4	SLH-DC.57.4.2	SLH-DC.57.6	SLH-DC.57.6.2	SLH-DC.57x.6	SLH-DC.57x.6.2	SLH-DC.100.4	SLH-DC.100.6	SLH-DC.100x.6	SLH-OPD	SLH-OP
Display	height of the digits [mm]	57	57	57/38	57/38	57	57	100	100 / 57	100	38	-
	number of digits	4	4	4+2	4+2	6	6	4	4+2	6	6	-
	number of lines	1	2	1	2	1	2	1	1	1	1	-
Time/Date display format	HH : MM DD.MM	✓	✓					✓				-
	HH : MM. ^{SS} DD. MM.YY			✓	✓				✓			-
	HH : MM : SS DD. MM.YY					✓	✓			✓	✓	-
Powering	standard	100 - 240 VAC, 50 - 60 Hz										MOBAline / Impulse
	VDC (on request)	18—56 VDC (18—40 VAC)										-
	PoE variant (IEEE 802.3af)	1 LAN input										2 LAN inputs
Power consumption [VA]	single sided, mains powered	7	11	8	16	8	16	7	8	10	5	0,15
	double sided, mains powered	11	-	16	-	16	-	11	16	18	-	-
	single sided, PoE	7	11	8	15	8	15	7	8	10	6	1
	double sided, PoE	11	-	15	-	15	-	11	15	15	-	-
Crystal timebase	passive running reserve (time + date)	6 years (except PoE)										
	running reserve PoE version	12 hours										
	accuracy at 20° C	± 0,3 sec/day (measurement over 24 h, after synchronization of at least 24 h)										
Accuracy of temperature measurement	range -10 ÷ +85 °C	±0,5 °C										
	range -50 ÷ +125 °C	±2,0 °C										
Operating environment	temperature	-5 ÷ +50 °C										
	humidity	0 - 95%, (without condensation)										
	protection degree	IP 54										
Weight [kg] (without mounting bracket)	single sided N.N	2,6	4	3,3	5	3,5	5,5	4,7	5,8	6,5	7	5
	single sided N.S	2,6	4	3,3	5	3,5	5,5	4,7	5,8	6,5	-	-
	double sided D.S	4	-	5	-	5,5	-	7,3	9	10	-	-
	flush mounting N.F	2,6	4	3,3	5	3,5	5,5	4,7	5,8	6,5	7	5
Dimensions [mm] (W x H x D)	single sided N.N	360	360	450	450	480	480	555	695	770	350	350
		150	260	150	260	150	260	220	220	220	440	350
		65	65	65	65	65	65	65	65	65	65	48
	single sided N.S	360	360	450	450	480	480	555	695	770	-	-
		150	260	150	260	150	260	220	220	220	-	-
		65	65	65	65	65	65	65	65	65	-	-
	double sided D.S	360	-	450	-	480	-	555	695	770	-	-
	150		180		150		220	220	220			
	95		95		95		95	95	95			
flush mounting N.F	380	380	470	470	500	500	555	695	770	350	350	
	170	280	170	280	170	280	220	220	220	440	350	
	62	62	62	62	62	62	62	62	62	75	75	
flush mounting back cover dimension W1 x H1	340	320	430,5	430,5	461	461	516	658	733	308	308	
	129	236	129	236	129	236	180	180	180	398	308	
dial diameter	-	-	-	-	-	-	-	-	-	-	248	248

Stainless steel keyboard	SKH	SKW	SKF	SKF back cover dimension W1 x H1
Dimensions [mm] (W x H x D)	80 x 180 x 42,4	120 x 120 x 47	82 x 152 x 50	67 x 139