Kafka

THERMAL PRINTER SQ-S

To enable processing and printing of data from measuring equipment the SW8 micro switch has to be set to ON.The data from the measuring equipment can be printed automatically or after pressing the printers PRINT key. If the sample numbering function is on (SW4 micro switch set to ON), the output of each sample is preceded with a sequence number. If the printing of date and time is on SW5 micro switch set to ON), there will be the time of printing next to each sample (hour, minutes, seconds). Additionally, before the first sample and after every hour the current date of printing is added. If the statistical functions are on (SW6 micro switch is set to ON), the printer saves the value of each sample thus enabling the performing of statistical calculations later. In case of an error or mistake the last saved sample can be deleted by holding the PRINT key, and pressing the LF key. The printer saves the position of the decimal point and unit transferred in the first sample, should these parameters change there is an error message printed. Holding the LF key and pressing the PRINT switches the printer into the data saving standby mode enabling the executing of further operations by means of a specific combination of keys.

The list of operations is printed out:

PRINT- Report
PRINT+LF-New sequence
LF+PRINT- Continue

The printer in standby mode enters plain text mode.
The printing of any data apart from the measurement results from a measuring device is also possible, e.g. calibration report.
Holding the LF key and pressing the PRINT key exits the standby mode and enables the continuation of (sample) data saving from the equipment.

Pressing the PRINT key in the standby mode initiates the printing of statistical reports of saved data. Any number of copies of the
Report can be printed at any time. If the statistical functions are off or the number of samples is <2, only the number of samples and their sum is printed. After the printing of the report the saving and printing of data from the sequence in progress is possible. Holding the PRINT key during standby mode and pressing the LF key deletes the saved data for the sequence in progress. It enables the starting of a new sample series with numbers starting from 1. The data stored in the printer will also be deleted after turning the power off. The maximum number of samples for statistical calculations is 1000.
If the number of samples is bigger, a statistical report is automatically printed and the next sample is qualified as a part of a new series and printed with the number 1. The statistical report contains the following data:

N - the number of samples
sum x - the sum of all samples
$\bar{x}$ - mean value
s - standard deviation
srel - coefficient of variance
min - minimum value
max - maximum value
R - the difference between the maximum and minimum value.

$$s = \sqrt{\frac{\sum (x_i - \bar{x})^2}{n - 1}} \qquad srel = \frac{s}{\bar{x}}$$

If the SW8 micro switch is set to OFF, the printer can print any text or graphics. The control codes (ESC...) are IBM Proprinter printer compatible. Additionally in text printing mode the printer performs the following functions:

ESC c ESC - prints the current time in the format: hh:mm
ESC d
ESC D - prints the current date in the format: dd.mm.yyyy

Pressing the LF key unloads the paper one line up. Holding down the key results in continuous unloading of the paper.
Turning the power on while holding the PRINT key prints out the manufacturer information with the printer version, current date \and time (provided the printer's clock is set properly), micro switches' settings and the description of printer control use keys.
Turning the power on while holding the LF switches the printer into the internal clock setting mode.
Setting the clock using a PC without any special software can be performed in the following way:
Connect the printer via the computer's serial port (COM1 or C0M2) using the appropriate KAFKA printer connection cable,and under DOS or in a Windows' DOS window type:

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MODE COMx:1200,E,7,1 [ENTER]
COPY CON COMx [ENTER]
Tyy,mm;dd;hh;tt;ss[ENTER]
[CTRL-Z] [ENTER]
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COMx is COM1 or COM2,yy - year, mm -month, dd - day, hh - hour,

tt - minutes, ss - seconds
e.g. for the date of 18/05/99 at 9:25:00 hrs you should type:
T99;05;18;09;25;00[ENTER]
The printer should print out the set date and time.
To switch to the normal operation mode turn off the printer's power for a few seconds and turn it back on.
After setting the internal clock the time is stored even after turning the printer's power off.

Micro switch Settings
SW8OFF- printing of text, graphics, IBM Proprinter printer emulation
ON printing and processing data from measuring equipment
SW7OFF- normal printing, fast
ON high quality printing, slower
The use of the other micro switches depends on the operation type set with SW8.

1.**Text and graphics printing mode (SW8 is OFF)**

SW1	SW2	
OFF	OFF	- 9600 baud
ON	OFF	- 4800 baud
OFF	ON	- 2400 baud
ON	ON	- 1200 baud

SW3	OFF	- 7-bits of data
	ON	- 8 bits of data
SW4	OFF	- no parity bit
	ON	- parity bit
SW5	OFF	- odd control
	ON	- even control
SW6	OFF	- normal character width (44 cpl)
	ON	- double reduced character width (88 cpl)

## 2. Printing data from measuring equipment mode (SW8 is ON)

| SW1	SW2	Supported equipment:
OFF	OFF	- RADWAG scales
ON	OFF	- A&D scales
OFF	ON	- Sartorius scales
SW3		- reserved
SW4		
OFF		- sample numbering off
ON		- sample numbering on
SW5		
OFF		- printing of date and time off
ON		- printing of date and time on
SW6		
OFF		- statistical functions off
ON		- statistical functions on

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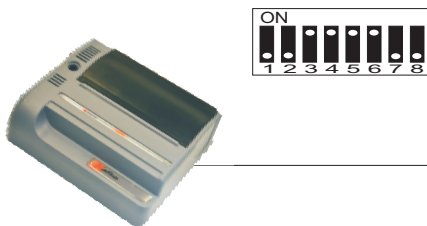
4 PREPARING THE PAPER ROLL
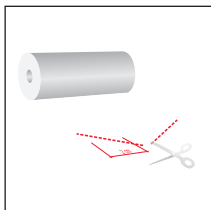
Before the paper is inserted into the printer, one should clips its end..
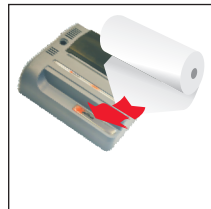
Insret the clipped end of the paper sheed in the entry slot of the mechanism.
Turn ON the printer power switch.
Press and hold the "FEED" button until the moment when paper is ejected from the exit slot of mechanism
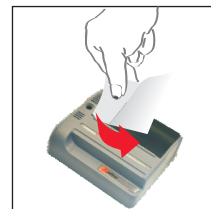
Grab the printout protruding from the printer with your hand. Pull it vigorously and diagonally to the direction of its ejection in such a way that the printout is lying against the cutter bar contained in the printer housing.

NOTE:
Do not pull the paper upwards.

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3 TECHNICAL DATA:

Printing type:	Dot-matrix thermal print, moving head w/ 9 heating points per column.
Printing method:	characters, bidirectional w/ speed optimisation
Printing speed:	draft: 10 cpi 69 cps 12 cpi 83 cps
No. of characters in line:	
Normal mode:	Compressed mode:
	10 cpi 44, 12 cpi 52 10 cpi 88, 12 cpi 104
	17 cpi 75, 20 cpi 88 17 cpi 150, 20 cpi 176
Character set:	ASCII, 13 international characters, IBM Table 1-2
	Polish, MAZOVIA-compatible.
Character setup:	draft - 9x12 points character matrix
	LQ - 18x24 points character matrix
	LQ Roman,
	LQ Sans Serif, Draft
Typefaces:	Horizontal print density: 5; 6; 8.5; 10; 12; 17; 20 cpi
	Vertical print density: 1/6; 1/8; 7/72; n/72; n/216 inch LF
	Graphics 8-pin 60; 72; 60; 90; 120; 144; 240 ppi
	9-pin 60; 120 ppi.
Note:	The printer simulates typical print densities (vertical and horizontal)
	Scale 1:1.26. The values provided apply to simulated densities.
Thermal paper:	Width 112 mm,
	Length 20 m (roll),
	Recommended type: TF 50 KS-E2C.
Power supply:	External: 8.5V-14 VDC or
	7V-10VAC 50-60Hz,
	Power consumption: 15W during printing (max),
	3W at standby (max).
Reliability:	MTBF: 5000 hours.
	MCBF: $5x10^5$ lines
Operating conditions:	
	Temperature: 535°C,
	Humidity: 10%-80% w/o condensation.
Dimensions and weight:	Height: 50 mm.
	Width: 160 mm.
	Length: 130 mm,
	Weight: 0.45 kg (w/o paper roll).
Interface:	RS 232C, RS 242 (TTL), RS 485 or 20mA current loop 5-terminal connector.
	DIN:1-RXD. 2-DTR, 3-GND. 4+5V. 5-TXD
Transmission parameters:	
	speed: 1200, 2400, 4800, 9600 baud
	format 8 or 7 bit w/ or w/o parity control, parity: even or odd. **"Compressed" operation**
	Double increase in horizontal print density for text and graphics.
	Enables printing on 112 mm wide paper for prints for
	on 80-column printer (8 inch).
Code control:	
	IBM-Proprinter.

The printer is suitable for electronic scales with a serial port. [illegible] This enables the transfer of weighing results to the printer. The printer generates weight data and performs statistical calculations for a complete data series on request, thus enabling the creation of any required documentation
Initialisation of data transfer is possible via the scales keyboard or the printer keyboard. The printer features an automatic mode.
For each sample there is a line printed containing the following data: sample number
weighing time (optional) measured weight.
unit.

Additionally, at the beginning and during the measurement, the current date is printed. The last result can be deleted in case of incorrect weight or error. Performing statistical calculations and printing a report is possible at any time during the performance of a weighing series provided that the number of samples is >1.