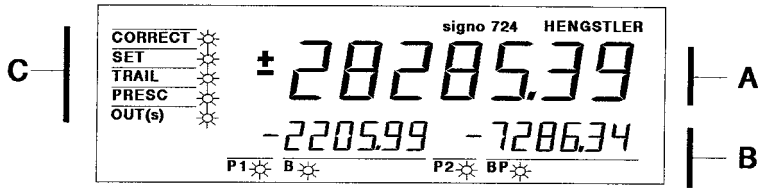
Programmable Control Counter signo 724

- Counting frequency up to 20 kHz
- 2 constantly visible presets plus trailing preset
- Repeatable, freely selectable setting value
- Batch counter with preset
- Variety of programming options for outputs and modes
- Teach-in function
- DIN dimensions 144 x 72 mm
- Connection with plug-in screw terminals

DISPLAY



A Count display: 14 mm-high, 7-digit LED display unit with pilot sign and decimal point. During counting operation the current count is indicated, during programming the display shows the various parameters.

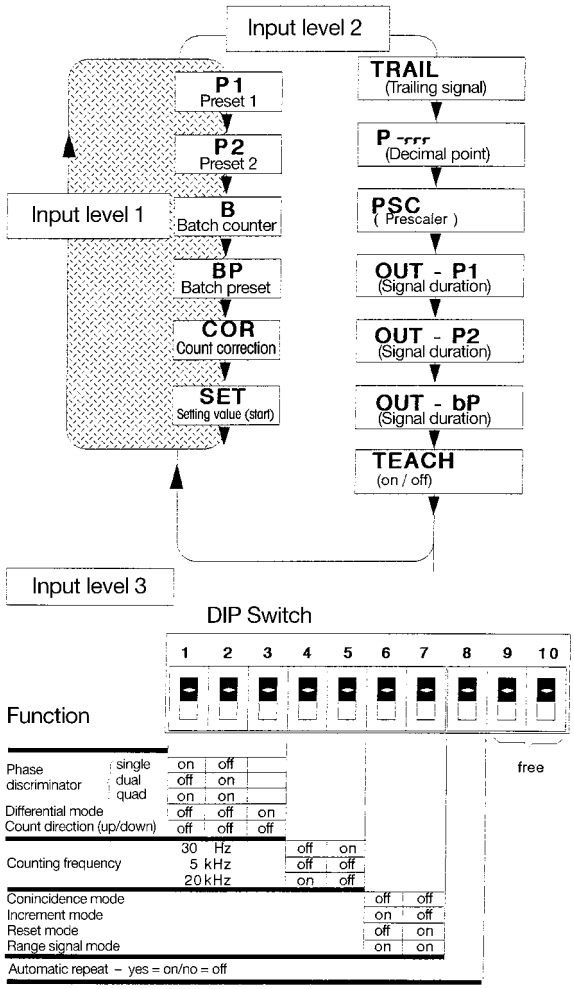
B Preset display: 7 mm-high, 6-digit LED display unit with pilot sign, decimal point and indicators. During counting operation presets 1 and 2 or batch and batch preset counter are shown constantly (programmable).

C LED indicators show the individual program steps during programming.

Technical data

PROGRAMMING

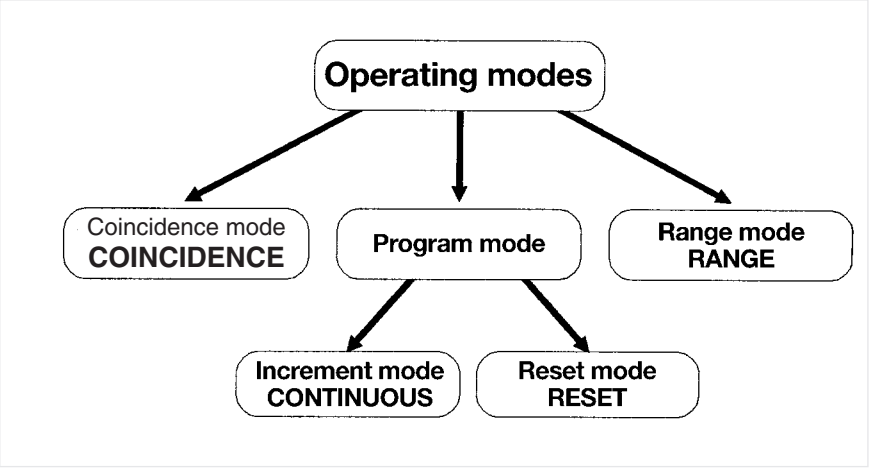
For practical reasons the different programming options are split up in three input levels.
Input level 1: - Access to presets and counter values which are frequently altered.
Input level 2: - Programming of equipment and machine-specific parameters.
Input level 3: - Programming of operating and counting modes. This is only required for initial start-up or if the machine configuration has been modified.



Input levels 1 and 2 can be secured against unauthorized manipulation with "keylock" inputs. Then only the set values are displayed.

OPERATING MODES

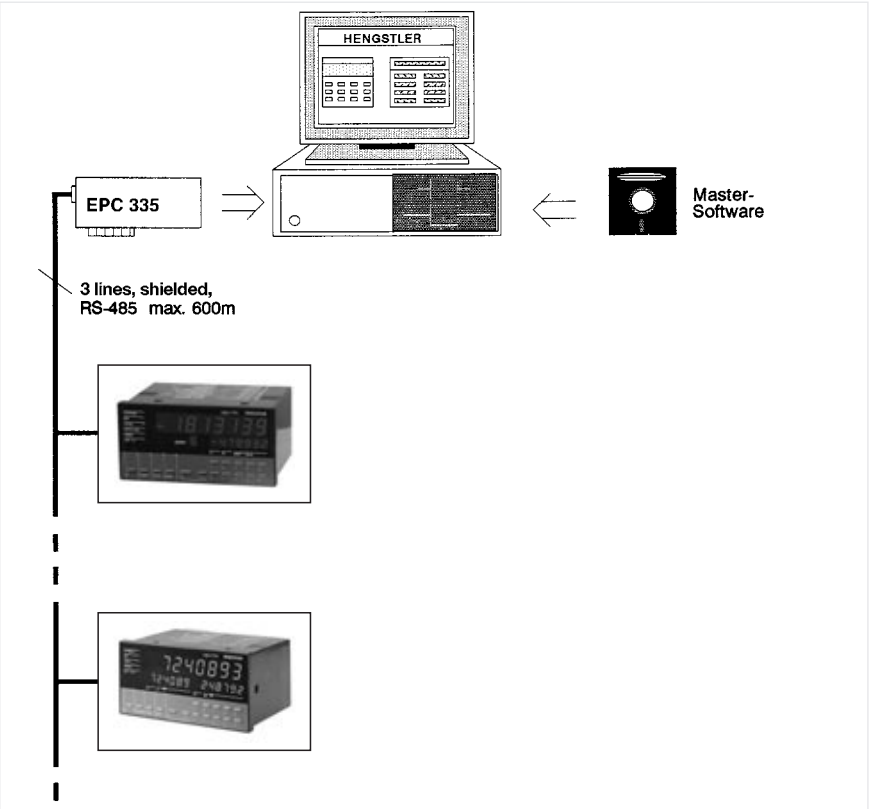
Signo 724 can be programmed for a variety of operating modes. This provides you with a simple solution for virtually any requirement in the wide range of industrial applications.



INTERFACE (optional)

– RS 232
- RS 485
– Printer interface
- Profibus*, Suconet field bus

Communication with the PC is possible via SUCONET and PROFIBUS. Any AT-PC with space for an expansion card (e.g. Klöckner Möller SUCONET card EPC 335) may be used. This card can communicate with up to 30 counters.
The software required for interface control purposes is designed for 30 counters.
* Hengstler is member of the PNO (Profibus User Organisation)



PLC applications are also possible, please contact us for further information.

Technical data

TECHNICAL DATA

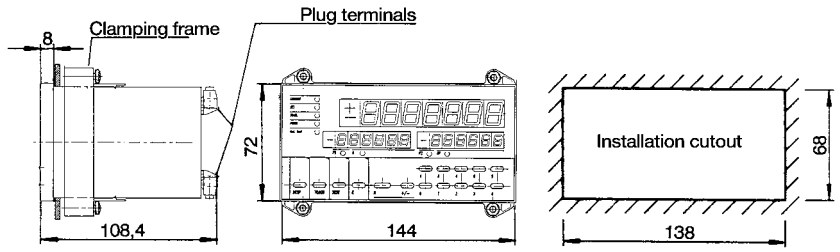
Display	LED, 7-digit count indication, two 6-digit presets, leading zero suppression, pilot sign and decimal point
Digit height	count 14 mm, presets 7 mm
Supply voltage V_{op}	12 ... 24 VDC - 5/+ 10 %, 24 VAC + 10 % or 100 ... 240 VAC, depending on version
Max. current consumption	on 12 ... 24 VDC typ. 500 mA, on 100 ... 240 VAC typ. 150 mA
Sensor supply	AC operation 24 VDC +10 %, DC operation Vop - 2 V, max. 60 mA
Value retention	approx. 10 years, without battery (NV memory)
Operating temperature	0 .... + 50 °C
Storage temperature	- 20 ... + 70 °C
Electrical connection	plug-in screw terminals
Protection class (EN 60529)	front IP 64, connections IP 20
Interference immunity EMV	severity 3 acc. to IEC 801-pt. 2 + pt. 4
Vibrostability	10 m/s² (10 ... 150 Hz) acc. to IEC 068-2-6
Shock stability	50 m/s² (22 ms) acc. to IEC 068-2-27
General design	acc. to DIN VDE 0411; protection class II
Weight	approx. 500 g

Inputs	
Amplitude thresholds	< 2 V and > 8 V, max. 40 VDC
Active edge	positive
Pulse shape	random, squarewave 1:1 for max. frequency
Input resistance	approx. 5 kΩ
Count input	with prescaler, programmable from 0.0001 ... 99.9999. - phase discriminator with single, dual or quad evaluation - differential mode - count direction mode
Pulse length min.	25 Ms (20 kHz), 100 Ms (5 kHz), 17 ms (30 Hz)
Max. counting frequency	20 kHz, 5 kHz or 30 Hz programmable

Control inputs	
Reset	with static behaviour - manual via keypad - external reset, pulse length : > 25 ms (20 kHz), 100 ms (5 kHz), > 20 ms (30 Hz) - automatic when main preset has been reached (only if programmed accordingly)
Reset + OUT	pulse length > 5 ms
Batch reset	dynamic, pulse length > 20 ms
Gate	static, pulse length: >25 ms (20 kHz), >100 ms (5 kHz), > 20 ms (30 Hz)
Display memory (Appl.)	static, pulse length > 6 ms
Keylock	static, pulse length > 50 ms

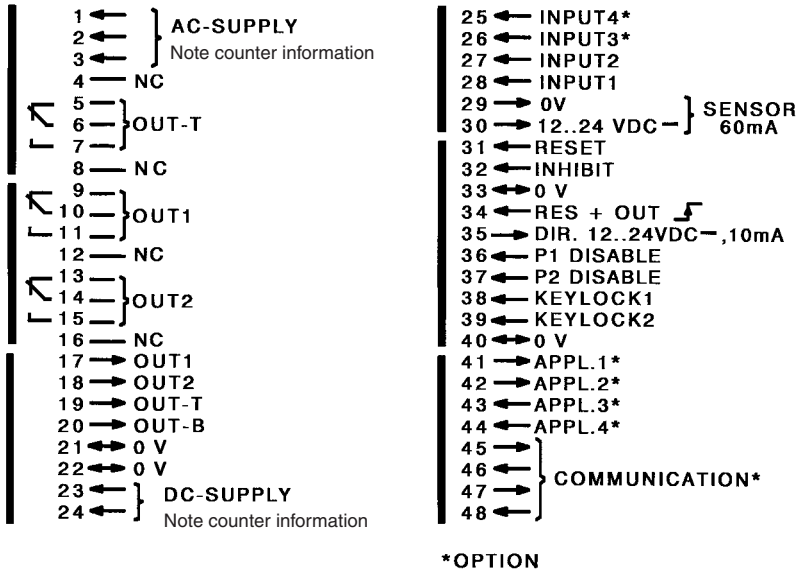
Outputs	
Signal outputs	OUT1, OUT2, OUT-B (batch), OUT-T (trailing signal), DIR
Relay	OUT1, OUT2 and OUT-T
Contact type	changeover contacts with snubber
Max. switching voltage	30 VDC/250 VAC ref. to ground, max. 1 A
Transistor	OUT1, OUT2, OUT-B, OUT-T and DIR active High, not short-circuit-proof
Switching voltage	AC operation 24 VDC + 20 %, DC operation V_{op} - 2 V
Switching current	< 50 mA per output
Sum of output currents	< 240 mA for transistor outputs and sensor supply voltage
Output delay	10 ms

DIMENSIONS



Dimensions in mm

CONNECTION DIAGRAM



ORDER INFORMATION
Counter

Version	12 ... 24 VDC	100 ... 240 VAC
Control counter	0 724 001	0 724 002

This counter is available with serveral interfaces. See next pages

signo 724

Programmable Control Counter
with Interface

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TECHNICAL DATA

Power Supply Voltage	12....24 V DC or 100...240 V AC Sensor
Supply	AC operation: 12...24 V DC, DC operation: VDC - 2 V, Imax. = 60mA

Inputs:	
Switching Level	< 2 V and > 8 V, max. 40 V DC
Active Edge	positive pnp
Count Input	with prescaler, programmable 0.0001 to 99.9999 - as phase discriminator input with single, double, or quadruple evaluation - as differential input - as up/down input
Count Frequency max.	programmable for 20 kHz, 5 kHz or 30 Hz
Control Inputs	Reset, Gate, Hold, Keylock, Reset + Out, Batchcounter Reset, Disable Inputs

Outputs:	
Outputs: Relay	Out 1, Out 2, Out Trail, each as changeover contact, 1 A, 250 V AC/ 30 V DC
Transistor	Out 1, Out 2, Out Trail, Out Batch, PNP, max. 50 mA
Total output current	Transistor output plus Sensor Supply current must not exceed 240 mA

RS 232

Interface RS 232	
Maximum length:	15 m
Input RxD	
Output TxD	

Protocol (RS 232)	
Data transfer rate	9600 Baud
Data format	8 Bits, no Parity
Stop bits	1
Protocol	Standard ASCII-Code

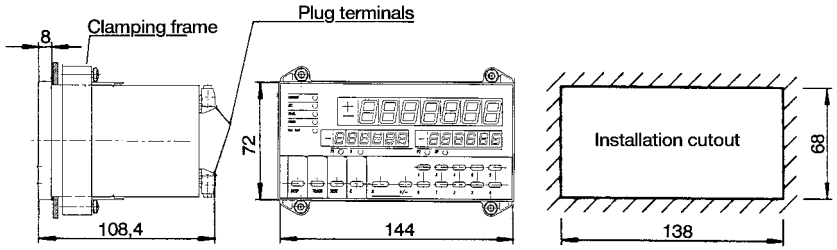
RS 485

Interface RS 485	
Wiring:	twisted and shielded
Maximum length:	600 m for Suconet, 1200 - 200 m for Profibus (depending on baud rate)
Noise Immunity EMC:	Data transfer may be disturbed temporarily by EMC, which is recognised and automatically repeated by the protocol.

Protocol (RS 485)	
Data transfer rate	187,51 kBd Suconet/ 9.6, 19.2, 500 kBd Profibus
Data format (Protocol)	Suconet - K, class 1 /Profibus DP and FMS
Counters/Interface	31
Bus structure	Line, must be terminated on both ends with a resistor

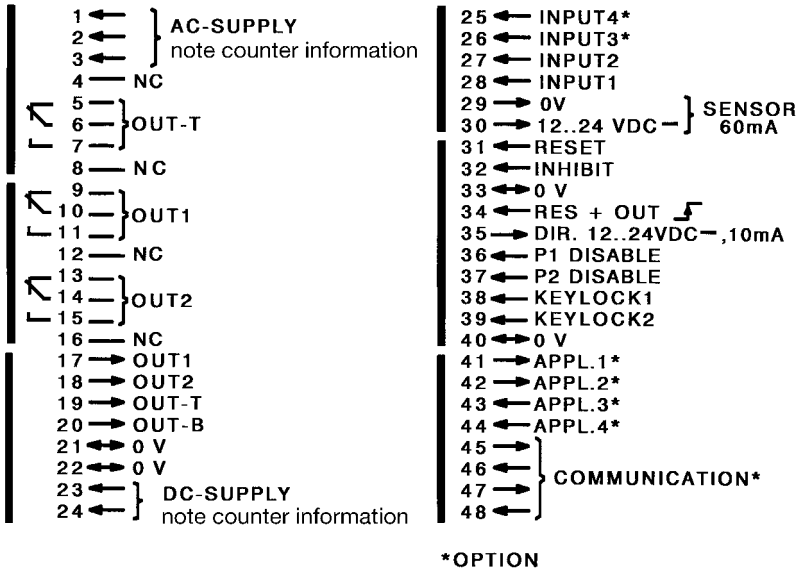
"Preset Counter signo 724" for more technical data

DIMENSIONS



Dimensions in mm

CONNECTION DIAGRAM



ORDER INFORMATION
Counter

Version with Interface	12...24 VDC	100...240 VAC
RS 485 Suconet	0 724 091	0 724 092
RS 485 Profibus FMS + DP	0 724 093	0 724 094
RS 232 Printersoftware 1 724 514	0 724 050M1	0 724 051M1
RS 232 Printersoftware 1 724 518	0 724 050M2	0 724 051M2
RS 232 Printersoftware 1 724 520	0 724 050M3	0 724 051M3
RS 232 Printersoftware 1 724 521	0 724 050M4	0 724 051M4
RS 232 Printersoftware 1 724 526	0 724 050M7	0 724 051M7
RS 232 Printersoftware 1 724 527	0 724 050M8	0 724 051M8

Print variants see next page

Accessories

PC card SUCONET EPC 335	0 070 701
Software PROFIBUS (GSD-Data)	0 723 595
RS 232 cable with 9 pin. Sub-D-Connector, 2.5 m	E 1522437

"Preset Counter signo 724" for more versions

Print Variants

PRIMO PRINTER 0 688 310 WITH REAL TIME CLOCK

	Order number for software	
Print variants	1 724 514 *for Primo with date / time German	1 724 521 *for Primo with date / time English
Mask 1	Zähler <value> Vorwahl 1 <value> Vorwahl 2 <value> Setzwert <value> Partiezähler <value> Partievorwahl <value> Zeit: <hh:mm:ss> Datum: <day, 25. 8. 96>	Counter <value> Preset 1 <value> Preset 2 <value> Set <value> Batchcounter <value> Batchpreset <value> Time: <hh:mm:ss> AM Date: <day, 8-25-96>
Mask 2	Länge: <value> m Zeit: <hh:mm:ss> Datum: <day, 25. 8.96>	<Date, time, countvalue> on a single line
Mask 3	Länge: <value> m Anzahl:<value> Stk. Zeit: <hh:mm:ss> Datum: <day, 25. 8.96>	Counter: <value> Batchcounter:<value> Time: <hh:mm:ss> AM Date: <day, 8-25-96>
Mask 4	same as Mask 2 with line feed and cutting	same as Mask 2 with line feed and cutting
Printout triggered	Keyboard, preset 2, batch preset, Application input 3	Keyboard, preset 2, batch preset, Application input 3

STANDARD ASCII PRINTER

	Order number for software	
Print variants	1 724 526 for standard ASCII printer	1 724 527 for standard ASCII printer
Mask 1	Counter <value> Preset 1 <value> Preset 2 <value> Set <value> Batchcounter <value> Batchpreset <value>	Counter <value> Preset 1 <value> Preset 2 <value> Set <value> Batchcounter <value> Batchpreset <value>
Mask 2	Counter <value>	Counter <value>
Mask 3	Counter <value> Batchcounter <value>	<value> m
Mask 4	same as Mask 1	Länge: <value> m
Printout triggered by	Keyboard, preset 2, batch-preset, application input 3	Keyboard, preset 2, application input 3, reset

FLATBED PRINTER DATATECHNO

	Order number for software	
Print variants	1 724 518 for flatbed printer with offset	1 724 520 for flatbed printer without offset
Mask 1	Zählerstand <value>	*HENGSTLER GmbH*
	Vorwahl 1 <value> Vorwahl 2 <value> Setzwert <value> Partiezähler <value> Partievorwahl <value>	Parameterliste signo 724 Zählerstand <value> Vorwahl 1 <value> Vorwahl 2 <value> Setzwert <value> Partiezähler <value> Partievorwahl <value>
Mask 2	Länge: <value> m Top margin = 195 mm	Länge: <value> m
Mask 3	Länge: <value> m Top margin = 53 mm	Länge: <value> m Bold
Mask 4	Länge: <value> Offset = same as mask 1	Länge: <value> m
Printout triggered by	Preset 2, Application input 3	Keyboard, preset 2, batch-preset, resetinput, application input 3