

Carino 09

The power and precision of a High Pressure Metering employing minimal pulsation, high chemical resistance and universal application capabilities



Metering pumps – exactly matching your needs

- simple operation enabling direct entry of metering rate in ml/min and specification of the maximal and minimal pressure on the keypad and LCD-display
 - exceptionally compact, space saving dimensions enabling extensive integration scope in nearly every application
 - Easy changeable pump heads and utility of different substance inlays for versatile application areas (Pump head versions with stainless steel inlay, inert ceramic-inlay or titanium-inlay for highest chemical resistance, metal free or biocompatibility)
 - Robust, extremely precise and powerful drive with minimal pulsation utilising mechanical parts designed for permanent operation
 - Integrated electronic compensation of the rest pulsation (from C 09/100-40)
 - Integrated system protection with programmable pressure settings Pmin und Pmax (supplied with pressure sensor) or programmable power consumption Imin und Imax (supplied without Pressure sensor)
 - Rear diaphragm flushing to prevent diaphragm abrasion caused by material accumulation
 - Pump head cooling for metering of liquid-CO₂
 - Process- and automatable control with analogue remote control, RS232, LAN
 - Configurable Master-/Slave-Pump systems with up to 3 Slave pumps
 - up to 20 programmable programs (from C 09/100-40)
 - Extensive additional modules with control of up to 4 Magnetic valves, diverse valve blocks in the low pressure range, pump head cooling, up to 8-point Pump heads and inlet combinations
- Metering pumps in all PTFE – version
 - Stepping motor controlled diaphragm metering
 - Diaphragm metering unit with positively controlled valve engineering
 - Metering pumps with heated and cooled pump head
 - Metering pumps for vacuum applications
 - Gas metering pumps
 - Gas mixing pumps
 - Batch- and filling metering pumps
 - Multi-channel distributor pumps
 - Sampling pumps with flushing function
 - Metering pump system in master-/slave -configuration
 - Pneumatic metering pumps
 - Ex-protected metering pumps
 - High pressure metering pumps
 - Metering systems consisting of metering pump and Coriolis measurement technology
 - Special customized solutions



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High pressure pumps from
1 µl/min – 50 ml/min



Technical Parameter

Pump type C 09/...	10-40	50-15	100-40	250-20	500-10	1000-5
max. metering capacity ml/min	10	50	99,9	249,9	499,9	999,9
min. metering capacity ml/min*	0,1	0,5	0,1	0,1	0,1	0,1
min. metering capacity ml/min**	0,001	0,01	12,0	18,5	48,0	75,0
max. operating pressure bar	400	150	400	200	100	50
Stroke volume µl		85,5	595,4 (2 pistons)			
Stroke distance mm		2,7	9,4			
Piston diameter mm		6,35	6,35			
min. Stroke duration sec.*		0,10	0,36			
max. stroke duration sec.*		10,3	357,2			
max. suction height m	0	0	0,05	0,05	0,05	0,05
max. viscosity mPas**	100	100	100	100	100	100
max. Medium temperature °C			60°C (140°F)			
Ambient temperature °C			40°C (104°F)			
Metering accuracy %	< 1% (1ml/min u. 12 MPa)			± 2% (5-50% metering range)***		
Repetition accuracy %	< 0,1% (1ml/min u. 12 MPa)			< 0,1%		
Rest pulsation %	< 0,5% (1ml/min u. 12 MPa)			< 0,5% (1ml/min u. 12 MPa)		
Material Pump head-Inlay	VA, Ceramic, Titanium			VA, Titanium		
Material piston	Sapphire					
Material valves	Balls Rubin; Seat Sapphire; Casing PEEK					
Pressure sensor	optionally			inkl. Pressure sensor		
Input voltage V	90-260 V			115-230V		
Power consumption W	50			450		
Safety class	IP 30					
Interface	RS 232, LAN, analogue remote control 0-1V, Start/Stop					
max. Dimensions LxBxH mm	225x113x135			340x220x185		
Weight. incl. Pressure sensor kg	2,4			10,1		

* recommended metering rate

** adjustable metering rate

*** determined with Methanol/Water 80/20



Stainless steel pump head



High pressure pumps
100 ml/min - 1000 ml/min

High pressure pump with modul for
distribution- and sample-collector-valve



Fluid-Connections
for pump heads
100 - 1000 ml

