

# Heavy-duty Circulation Pump

A magnetic drive seal-less pump with 20 or 38 mm ports, designed for a maximum flow of 65 or 115 litres

The CM90 circulation pump has been developed primarily for heating and cooling applications in buses, trains and boats, but it is much more. In closed systems or wherever else self-priming is not required, the CM90 is an all-round pump that distinguishes itself for its dependability, capacity and long service life.

The CM90 pump has a magnetic drive, which means that no shaft seal is necessary, as the motor shaft does not penetrate the pump house. With no mechanical seal, longer service life is assured.

Heat flanges on both the motor and the pump also increase service life as they dissipate heat from the unit, which can pump liquids efficiently at a very wide range of temperatures. The CM90 also features integral thermal overload protection and is EMC approved according to EN 55014 standards.

The CM90 magnetic driven centrifugal pump combines a high flow rate with very low electricity consumption, making it ideal for vehicular heating and cooling systems.



## Features & Benefits

- Maximum flow of 65 or 115 litres per minute @ 0.1 bar (17.2 or 30 GPM @ 1.45 psi)
- Designed for liquid temperatures of -40°C to +100°C (-40°F to +212°F)
- Ambient operational temperature range: -40°C to +90°C (-40°F till +194°F)
- Seal-less magnetic drive
- Specifically engineered for continuous operation
- Extended service life
- Ball bearing brush motor - Enclosure IP67
- Equipped with heat flanges for improved cooling
- Steel motor housing
- 12V or 24V motors
- Thermal overload protection
- Universal mounting bracket
- Industry standard ports
- Complies with Recreational Craft Directive 94/25/EEC: (ISO 8846), (ISO 10133)
- Complies with Electromagnetic Compatibility Directive 2004/108/EC: (EN55014-1: 2006), (EN55014-2: 1997 +A1: 2001), (EN61000-6-3: 2007 + A1: 2011)

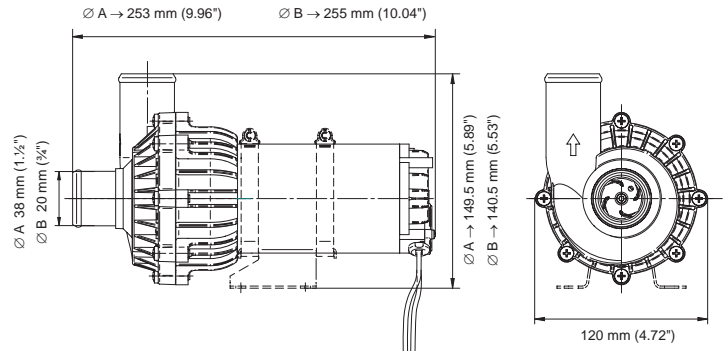
# CM90 – Electrically powered, centrifugal pump with magnetic transmission

The CM90 has been designed to circulate water or a water/antifreeze mixture in the heating systems of buses, trains and boats.

## Technical specifications:

- Capacity:  
 20 mm (3/4") port 65 l/min (17.2 GPM) at 0.1 bar  
 38 mm (1 1/2") port 115 l/min (30.4 GPM) at 0.1 bar
- System pressure: -0.2 to +2.5 bar; stationary max. 4.0 bar
- Liquid: Water/glycol mixture; max. 60% glycol
- Motor service life: 10,000 hours at nominal voltage (and 30°C ambient temperature)  
 10,000 start/stops. Interchangeable motor.
- Motor, voltage: Nominal 13.6V DC for use between 10-16V  
 Nominal 27.2V DC for use between 20-32V
- Input power: Max. 125W
- Dry running: 30 minutes
- Ports: 20 mm (3/4") or 38 mm (1 1/2") diameter
- Weight: 3.0 kg (6.6 pounds)
- Body: PPA, fiberglass reinforced
- Mounting: Separate universal bracket for flat surfaces
- Directives:  
 Recreational Craft Directive 94/25/EEC  
 (ISO 8846), (ISO 10133)  
 Electromagnetic Compatibility Directive 2004/108/EC  
 (EN55014-1: 2006), (EN55014-2: 1997 +A1: 2001), (EN61000-6-3: 2007 + A1: 2011)

## Dimensions



## Pressure and capacity data

Based on water at 20°C/68°F (and recommended hose)

HOSE CONNECTION	BACK PRESSURE			FLOW		AMPERAGE	
	BAR	kPA	FT	L/MIN	USGPM	13.6V	27.2V
Ø 38 mm (1.1/2")	0.1	10	3.4	115	30.4	10	4.6
	0.25	25	8.4	85	22.5	9.5	4.5
	0.4	40	13.4	40	10.6	9	4.2
Ø 20 mm (3/4")	0.1	10	3.4	65	17.2	8.5	4
	0.25	25	8.4	50	13.2	8	3.8
	0.4	40	13.4	30	7.9	7.5	3.6
FUSE REQUIRED						12	6

DESCRIPTION	ORDER NO	WITH UNIVERSAL BRACKET
CM90P7-1 13.6V DIA 38		10-24664-09
CM90P7-1 27.2V DIA 38		10-24664-10
CM90P7-1 13.6V DIA 20		10-24750-09
CM90P7-1 27.2V DIA 20		10-24750-10

# DC Driven Circulating Pump

Reliable Even Under Difficult Conditions

Extreme operational reliability, compact, leak-proof design and the capability of pumping water, antifreeze or coolants under hostile operating conditions are three of the advantages which distinguish the CM10/30 magnetic drive, seal-less pumps from conventional alternatives.

Weather-proof as well as dust-proof, both the CM10 and CM30 can be used in dirty or high humidity situations in vehicles or outdoor applications where the pump may be regularly subjected to road spray, adverse weather conditions or a profuse hosing down during routine maintenance.

The CM10/30 is well adapted for a wide range of demanding applications and operates without problem over a wide range of temperatures while reliably pumping coolants or water over extended periods of time.

Low friction impeller bearings prolong service life and make it possible for the CM10/30 to withstand dry running for up to 30 minutes. The permanently lubricated ball bearing motor also contributes to the up to 5000 hour uninterrupted service rating of this high-tech pump.

For customized OEM solutions, such as motor vehicle heating and cooling, fresh water circulation, or closed circuit solar panels, customers can count on the SPX FLOW Johnson Pump engineering staff for specially tailored CM10/30 packages.



## Features & Benefits

- Maximum flow @ 0,1 bar
 

CM10	15l/min (4 USGPM) with connection Ø16 mm (5/8")
	18,5l/min (5 USGPM) with connection Ø20 mm (3/4")
CM30	20l/min (5,3 USGPM) with connection Ø16 mm (5/8")
	26l/min (6,9 USGPM) with connection Ø20 mm (3/4")
- enclosed (as per IP67) permanent magnet, ball bearing mounted motor, designed for continuous operation
- Ambient operational temperature range: -40°C to +70°C
- Liquid temperature range: -40°C to +100°C (-40°F to +212°F)
- 12V or 24V motors
- High torque for safe starts under difficult conditions
- Compact, low-weight design
- Easy, low-cost maintenance and long service life
- CE-marked
- Complies with Recreational Craft Directive 94/25/EEC: (ISO 8846), (ISO 10133)
- Complies with Electromagnetic Compatibility Directive 2004/108/EC: (EN55014-1: 2006), (EN55014-2: 1997 +A1: 2001), (EN61000-6-3: 2007) (2004/104/EC: 2004 Annex 1; paragraph 6.5, 6.6, 6.8 and 6.9)

# Hot or Cold, Dirty or Wet – The CM10/30 Gets the Job Done

## Technical specifications:

### Capacity:

#### CM10

16 mm (5/8") port 15 l/min (4 USGPM) at 0.1 bar  
 20 mm (3/4") port 18.5 l/min (5 USGPM) at 0.1 bar

#### CM30

16 mm (5/8") port\* 20 l/min (5.3 USGPM) at 0.1 bar  
 20 mm (3/4") port 26 l/min (6.9 USGPM) at 0.1 bar

Impeller: PPS thermoplastic

O-ring: EPDM

Shaft: Stainless steel

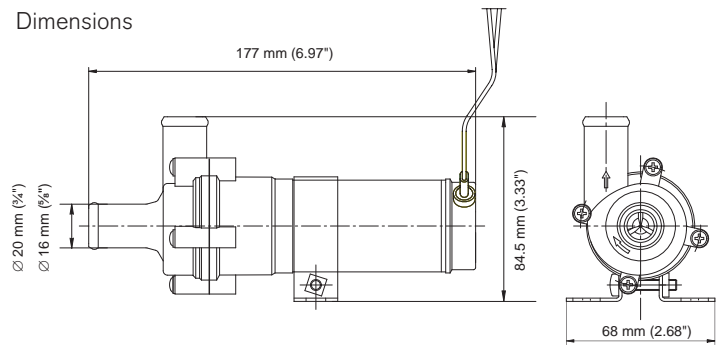
Magnet housing: PSU

Motor: 12/24V DC enclosed (as per IP67) permanent magnet, ball bearing mounted motor, designed for continuous operation

Liquid temp.: Min -40°C Max +100°C

Ports: Ø 16 mm (5/8") or 20 mm (3/4"). **\*Note!**  
 CM30P7-1 available standard with 20 mm (3/4") hose connection; 16 mm (5/8") hose connection by request only.

### Dimensions



Weight: CM10: 0.53 kg (1.2 pounds),  
 CM30: 0.6 kg (1.3 pounds)

Body: PPA thermoplastic

### Directives:

Recreational Craft Directive 94/25/EEC

(ISO 8846), (ISO 10133)

Electromagnetic Compatibility Directive 2004/108/EC

(EN55014-1: 2006), (EN55014-2: 1997 + A1: 2001), (EN61000-6-3: 2007), (2004/104/EC: 2004 Annex 1; paragraph 6.5, 6.6, 6.8 and 6.9)

ORDER NO.	DESCRIPTION	HOSE CONNECTION	BACK PRESSURE			FLOW	
			BAR	kPA	FT	L/MIN	USGPM
10-24501-03/-04	CM10P7-1, 12V/24V	Ø 16 mm (5/8")	0.1	10	3.3	15.0	4.0
			0.15	15	4.9	12.0	3.2
10-24502-03/-04	CM10P7-1, 12V/24V	Ø 20 mm (3/4")	0.1	10	3.3	18.5	5.0
			0.15	15	4.9	14.5	3.9
10-24503-03/-04	CM30P7-1, 12V/24V	Ø 16 mm (5/8")	0.1	10	3.3	20.0	5.3
			0.15	15	6.6	17.5	4.2
10-24504-03/-04	CM30P7-1, 12V/-24V	Ø 20 mm (3/4")	0.1	10	3.3	26.0	6.9
			0.15	15	6.6	22.5	5.2

DESCRIPTION	ORDER NO
CM10P7-1 12V DIA16	10-24501-03
CM10P7-1 24V DIA16	10-24501-04
CM10P7-1 12V DIA20	10-24502-03
CM10P7-1 24V DIA20	10-24502-04
CM30P7-1 12V DIA20	10-24504-03
CM30P7-1 24V DIA20	10-24504-04