



SmART SUB Series Single Phase and Three Phase Horizontal open well Submersible Pumps are designed for under water application and therefore no need of priming and foot valve. Pumps are suitable for open well ortanks where there is wide fluctuations in water level.



**Product features :**

- Carbon Radial bush bearing
- SS Thrust bearing and Carbon pads at both Drive End and Non Drive End to take care of axial thrust load
- PVC insulated 3 core 1.5mm<sup>2</sup> motor cable
- Anticorrosive coating on the Cast Iron parts - free from rust and corrosion
- Winding overhang protector
- Neck ring in the volute casing - High Efficiency
- Locally rewindable and repairable
- Supplied with Starter Box for 1 phase Pumps
- Designed for continuous duty S1
- Supplied with L bend stainer & Cable joining kit
- Cable Glands - To avoid ingress of water entry
- Both water filling and drain plugs are available

**Material of Construction :**

- Impellert - Noryl & Cast Iron (CED Coated)
- Shaft - SS, Pump body - SS & Thrust ring-SS
- Radial Bearing - Carbon
- Mechanical Seal - Ceramic vs. Graphite
- Thrust bearing - SS / Carbon
- Volute casing - Cast Iron

**Applications :**

- Sump to Over Head Tank Filling
- Farms
- Foundations
- Industrial and rural water supply
- Gardening
- Landscaping

**Pumped Liquid :**

Clean, thin, non-aggressive, non-explosive, clear cold, fresh water without abrasives, solid particles or fibers.

**Supply Voltage :**

180V - 240V AC, 1ph, 50Hz; 360 - 440AC, 3ph, 50Hz

**Available Range :**

Model	Phase	KW	HP	Flange Size (mm)		Hydraulic Data												
				Suction	Discharge	Flow (LPH)	Head (m)	7200	6600	5100	3900	2400	600					
SmART SUB HOS 1-0.37 kw	1	0.37	0.5	25	25	Flow (LPH)	7200	6600	5100	3900	2400	600						
						Head (m)	12	14	16	18	20	21						
SmART SUB HOS 1-0.75 kw	1	0.75	1	25	25	Flow (LPH)	7800	7500	6900	6000	4800	3600	2400	1200				
						Head(m)	12	15	18	21	24	27	30	32				
SmART SUB HOS 2-0.75 kw	1	0.75	1	50	50	Flow (LPH)	21000	18000	15000	10800	3000							
						Head (m)	6	9	12	15	18							
SmART SUB HOS 1-1.1 kw	1	1.1	1.5	32	25	Flow (LPH)	20220	18420	17340	16260	14760	12960	11160	8640	5760			
SmART SUB HOT 1-1.1 kw	3					Head (m)	7	10	12	14	16	18	20	22	24			
SmART SUB HOSD 1-1.1 kw	1	1.1	1.5	32	25	Flow (LPH)	8400	7670	7000	6230	5280	4360	3370	1730				
SmART SUB HOTD 1-1.1 kw	3					Head (m)	12	16	19	22	26	29	32	36				
SmART SUB HOS 1.5-1.5 kw	1	1.1	2	40	40	Flow (LPH)	22620	21120	18240	16440	15000	13500	12060	9120	4380			
SmART SUB HOT 1.5-1.5 kw	3					Head (m)	5	10	15	18	20	22	24	27	30			
SmART SUB HOSD 1.5-1.5 kw	1	1.5	2	40	40	Flow (LPH)	11260	11040	10020	8750	7330	6450	5300	3780	2550			
SmART SUB HOTD 1.5-1.5 kw	3					Head (m)	19	21	27	33	39	43	45	48	50			
SmART SUB HOT 1.5-2.2 kw	3	2.2	3	40	40	Flow (LPH)	19860	19620	19440	17580	15600	11940	8520					
						Head (m)	5	10	15	21	26	31	36					
SmART SUB HOT 2-3.7 kw	3	3.7	5	50	50	Flow (LPH)	33060	32160	29340	25740	22440	18420	13500	10680	7560			
						Head (m)	8	10	15	20	24	28	32	34	36			
SmART SUB HOT 2-5.5 kw	3	5.5	7.5	65	50	Flow (LPH)	39780	38640	36720	33660	30840	27120	23640	19440	13320	10020	6120	
						Head (m)	11	15	20	25	30	35	40	45	50	52	54	
SmART SUB HOT 2.5-5.5 kw	3	5.5	7.5	80	65	Flow (LPH)	61020	56220	50520	46380	40860	33720	25860	18420				
						Head (m)	22	24	26	29	31	33	35	37				
SmART SUB HOT 2.0-7.5 kw	3	7.5	10	65	50	Flow (LPH)	42120	40280	38430	35340	32160	28740	24660	22220	13740			
						Head (m)	10	15	20	25	30	35	40	45	55			
SmART SUB HOT 2.5-7.5 kw	3	7.5	10	80	65	Flow (LPH)	70260	66990	61860	55620	47400	38700	22140					
						Head (m)	27	29	31	33	35	37	39					

The Pump performance is based on rated voltage (220V for 1 phase, 415V for 3 phase) at rated frequency 50Hz.



**KUTTI & KASI**  
THE MOTOR PEOPLE

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# Grundfos CR - The Ultimate multistage pump



Grundfos was the first pump manufacturer ever to create a vertical multistage in-line pump. Known as the CR pump, this innovative design has inspired followers all over the world. Even so, continuous development and innovation ensure that the Grundfos CR pumps remain unmatched.

The CR pump of today reflects the needs and requirements of customers worldwide. All development work at Grundfos is carried out with the end-users in mind.

- > Superior reliability
- > Focus on cost of ownership
- > Custom-built pumps

The new generation of Grundfos CR pumps features a full range of sizes and limitless scope for combinations to suit your specific needs. At Grundfos, innovation is about making things better. And we focus our effort where it matters: **inside**

## Reliability

The Cr pumps is renowned for its reliability. The CR pump design has all the durability that customers expect from a high quality multistage pump.

We have added unique features to ensure unsurpassed reliability:

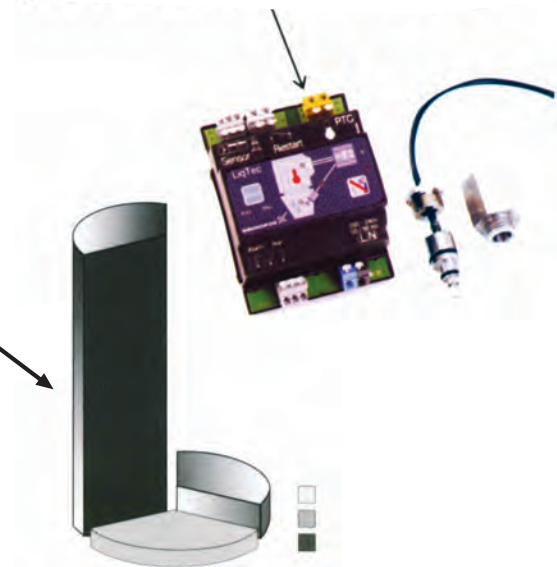
- Dry running protection by introducing the Grandfos Liq Tec.
- A unique cartridge seal for safe and easy handling
- Hard-wearing materials.

## Focus on cost of ownership

Electricity is the most expensive part of any pump operation. This simple fact is often overlooked when pumps are compared.

It may still surprise some to learn that the purchase price and maintenance costs account for less than 15% of the total life-time cost of a pump. Obviously, this means that electricity accounts for a staggering 85% or more of the total costs. This is where the Grundfos CR pump makes a real difference.

When pumps are running many hours per day, a 10 percentage point increase in pump efficiency will quickly transform into an energy saving measure, month after month, for the entire life of the pump.



## Custom-built pumps

The foundation of the Grundfos industrial range-the CR series of in-line multistage centrifugal pumps is unmatched by any other brand in pump performance and in its ability to withstand aggressive liquids.

The Grundfos CR range offers variants in motors (flame proof), seals (double seal, quench) & pumps (magnetic sealers, air-cooled top) thereby providing an ideal mix & match for any conceivable industrial applications.

## Electrical data CR, CRI, CRN pumps

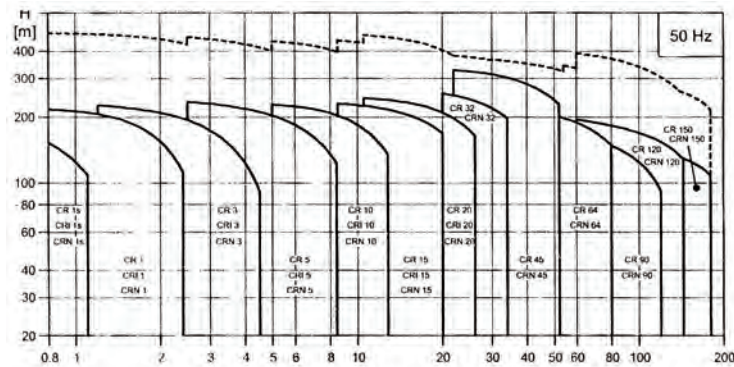
	MMG / MG motor
<b>Mounting designation</b>	up to 4kW : V1 8 From 5.5kW : V1
<b>Instulation class</b>	F
<b>Efficiency class</b>	EFF 2 / EFF 1
<b>Enclosure class</b>	IP55*
<b>Supply voltage</b>	3 x 380 - 415V
<b>(Tolerance : +/-10%)</b>	1 x 220 - 230 / 240V (up to 2.2 kW)
<b>Supply frequency</b>	50 Hz

\* IP 44, IP 54 and IP 65 - on request

## Typical Applications

Applications	CR, CRI	CRN	CRT
<b>Industry</b>			
<b>Pressure Boosting in...</b>			
Process water systems	●	●	
Washing and cleaning systems	●	●	
Fire fighting systems	●		
<b>Water treatment</b>			
Ultra-filtration systems		●	
Reverse osmosis systems		●	
Softening, ionising, demineralizing systems		●	
Sea water			●
<b>Liquid transfer in...</b>			
Cooling and air-conditioning systems (refrigerants)	●	○	
Boiler feed and condensate systems	●	○	
Machine tools (cooling lubricants)	●	●	
Aqua farming	●	○	
<b>Transfer of</b>			
Oils and alcohols	●	●	
<b>Chemical process industries</b>			
Chloride containing salts (ferric chloride)			●
Oxidising acids (nitric acid, chromic acid)			●
Recommended version			
Alternative version			
<b>Water supply</b>			
Pressure boosting in high-rise buildings, hotels etc.	●	○	
Pressure boosting for industrial water supply	●	○	
<b>Irrigation</b>			
Sprinkler irrigation			

## Performance range of CR, CRI, CRN



Type	Description
CR	SS 304 with cast iron top and base
CRI	SS 304 with SS 316 top & base
CRN	SS 316 throughout
CRT	Titanium throughout

## Product range

Range	CR 1s CRI 1s CRN 1s	CR 1 CRI 1 CRN 1	CR 3 CRI 3 CRN 3	CR 5 CRI 5 CRN 5	CR 10 CRI 10 CRN 10	CR 15 CRI 15 CRN 15	CR 20 CRI 20 CRN 20	CR 32 CRI 32 CRN 32	CR 45 CRI 45 CRN 45	CR 64 CRI 64 CRN 64	CR 90 CRI 90 CRN 90	CR 120 CRI 120 CRN 120	CR 150 CRI 150 CRN 150
Nominal flow rate [m <sup>3</sup> / h]	0.8	1	3	5	10	15	20	32	45	64	90	120	150
Temperature range [°C]			-20 to +120						-30 to +120				
Temperature range [°C]-on request			-40 to +180						-40 to +180				
Max. pump efficiency [%]	35	48	58	66	70	72	72	78	79	80	80	75	72
Flow range [m <sup>3</sup> / h]	0.3-1.1	0.7-2.4	1.2-4.5	2.5-8.5	5-13	9-24	11-29	15-40	22-58	45-120	45-120	60-160	75-180
Max. pressure [bar]	21	22	24	23	23	24	25	28	23	20	20	21	19
High pressure [bar]-on request	-	47	47	47	47	47	47	39	39	41	41	41	39
Motor power [kW]	0.37-1.1	0.37-2.2	0.37-3	0.37-5.5	0.37-7.5	1.1-15	1.1-18.5	1.5-30	4-45	5.5-45	5.5-45	11-75	11-75

\*Technical data subject to changes