

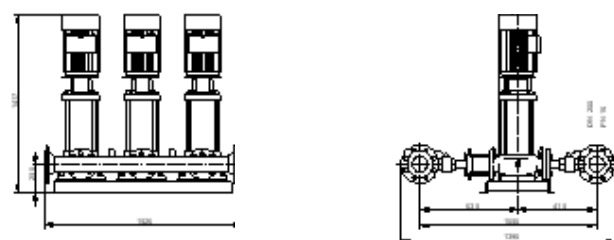
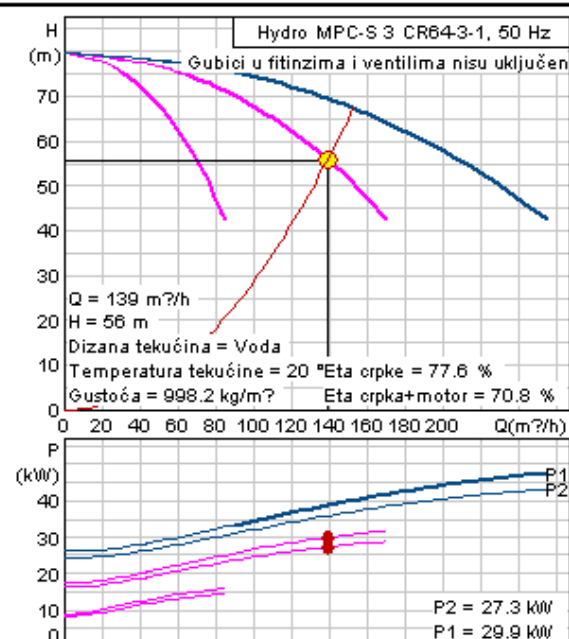
KATALOŠKI MATERIJAL PUMPI CRPNE STANICE "KULA" - NOVA BILA

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Project/Projekat REGIONALNI SISTEM VODOSNABDIJEVANJA PLAVA VODA			
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Drawing name/Ime Priloga KATALOŠKI MATERIJAL PUMPI CRPNE STANICE "KULA" - NOVA BILA		Drawing scale/Mjerilo crteža (Priloga) Format A3(420/297 mm)	
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		Drawing no/ Prilog broj 4.28.2	
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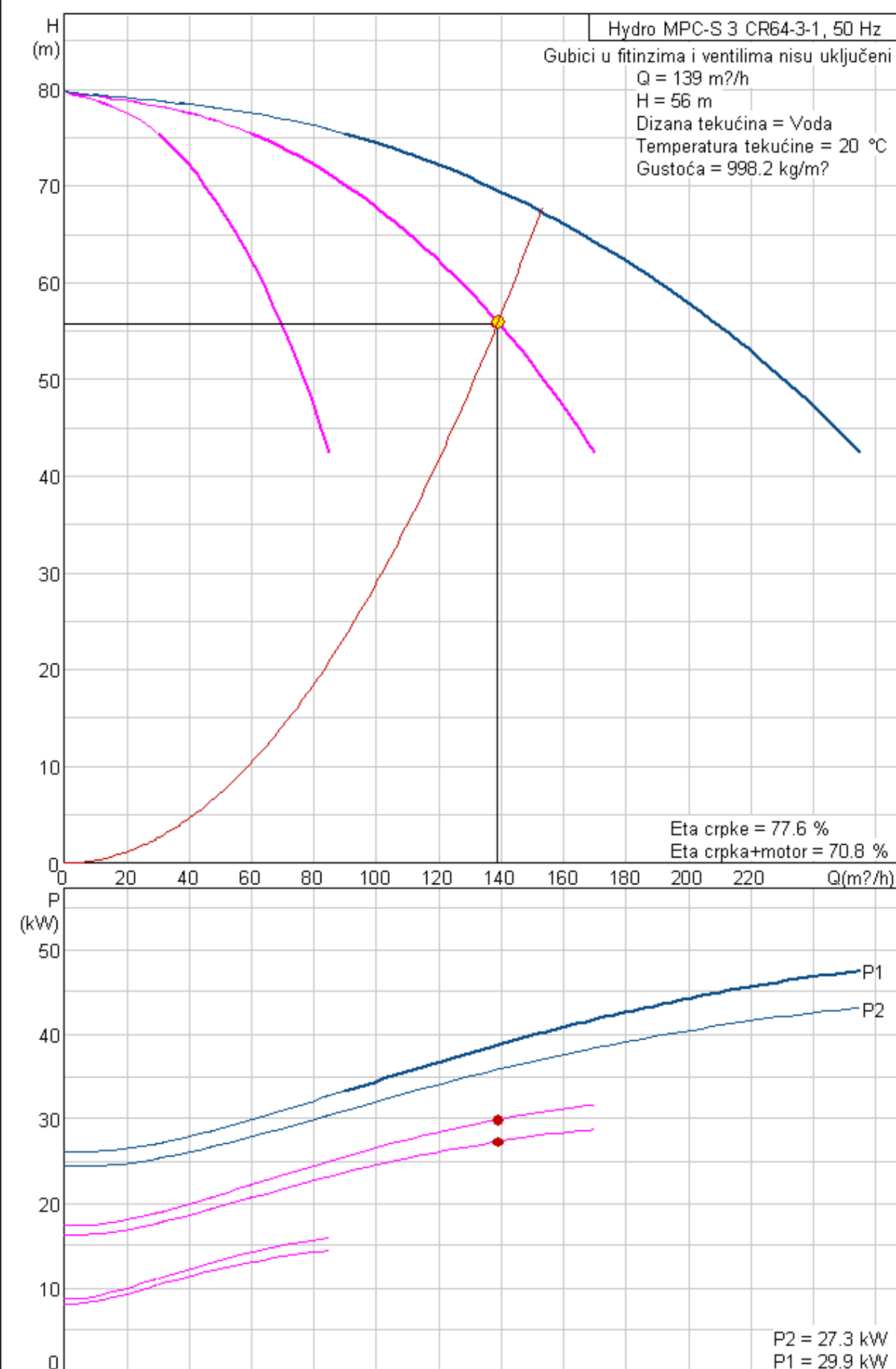
Položaj	Kol.	Opis	Pojedinačna cijena
	1	Hydro MPC-S 3 CR64-3-1  Pozor! Slika proizvoda se može razlikovati od stvarnog proizvoda Proizvodni broj: 91044129 Pressure booster system supplied as compact assembly according to DIN standard 1988/T5. The pumps are all mains-operated CR pumps. - Hydro MPC-S maintains the pressure through cutting in/out the CR pumps. - The system performance is adapted to the demand through cutting in/out the required number of CR pumps and through parallel control of the pumps in operation. - Pump changeover is automatic and depends on load, time and fault. The system consists of these parts: - 3 vertical multistage centrifugal pumps, type CR64-3-1. - The pumps are mains-operated (start/stop). - Pump parts in contact with the pumped liquid are made of stainless steel EN DIN 1.4301. Pump bases and heads are of either cast iron/stainless steel (CRI) or cast iron EN-GJS-500-7 (CR), depending on pump type; other vital parts are made of stainless steel EN DIN 1.4301. The pumps are equipped with the service-friendly cartridge shaft seal HQQE (SiC/SiC/EPDM). - Two manifolds of stainless steel EN DIN 1.4571. - Base frame of stainless steel EN DIN 1.4301. - One non-return valve (POM) and two isolating valves for each pump. Non-return valves are certified according to DVGW, isolating valves according to DIN and DVGW. - Adapter with isolating valve for connection of diaphragm tank. - Pressure gauge and pressure transmitter (analog output 4-20 mA). - Control MPC in a steel cabinet, IP 54, including main switch, all required fuses, motor protection, switching equipment and microprocessor-controlled CU 351. Dry-running protection and diaphragm tank are available according to the list of accessories. Pump operation is controlled by Control MPC with the following functions: - Intelligent multi-pump controller, CU 351. - PID controller with adjustable PI parameters (Kp + Ti). - Constant pressure at setpoint, independent of inlet pressure. - On/off operation at low flow. - Automatic cascade control of pumps for optimum efficiency. - Selection of min. time between start/stop, automatic pump changeover and pump priority. - Automatic pump test function to prevent idle pumps from seizing up. - Possibility of standby pump allocation. - Possibility of backup sensor (redundant primary sensor). - Manual operation. - Possibility of external setpoint influence. - Possibility of digital remote-control functions: ? system on/off	Cijena na upit

Položaj	Kol.	Opis	Pojedinačna cijena
		? max., min. or user-defined duty ? up to 6 alternative setpoints. - Digital inputs and outputs can be configured individually. - Pump and system monitoring functions: ? minimum and maximum limits of current value ? inlet pressure ? motor protection. ? Sensors and cables monitored against malfunction. ? Alarm log with the previous 24 warnings/alarms. - Display and indication functions: ? 320 x 240 pixels graphical display with backlight ? green indicator light for operating indications and red indicator light for fault indications ? potential-free changeover contacts for operation and fault. - Grundfos bus communication. Pumps, piping, cabling complete as well as Control MPC are mounted on the base frame. The booster system has been preset and tested. dozvoljena temp. medija: 5 °C .. 70 °C max tlak sustava: 16 bar protok (uređaj): 255 m³/h prema DIN-u 1988/T5: 170 m³/h protok (crpka): 139 m³/h visina: 56 m opskrbastrujom: 380 - 415 V, 50 Hz, PE naziv. struja postrojenja: 84 A broj glavnih crpki: 3 nazivna snaga: 15 kW Glavno startanje: frekventno vodjene broj pomoćnih crpki: 0 startanje.E = elektronički): frekventno vodjene broj pomoćnih crpki: 0 usis: DN 200 ispust: DN 200 netomasa: 913 kg	

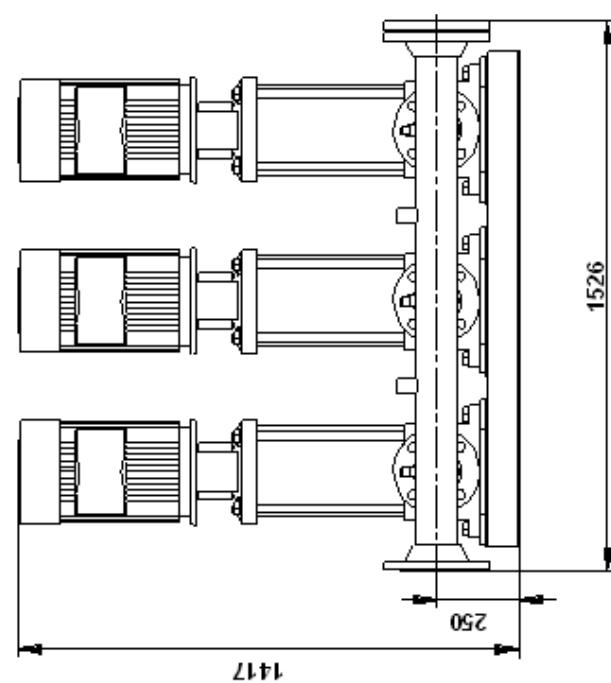
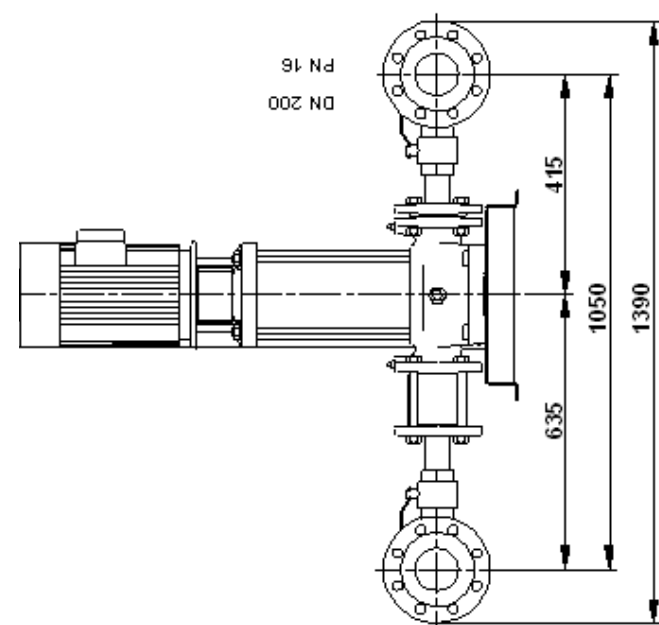
Opis	Vrijednost
Ime proizvoda:	Hydro MPC-S 3 CR64-3-1
Proizvodni br.:	91044129
EAN broj:	5700834742545
Tehnički:	
Stvarno izračunati protok:	139 m³/h
Min. protok sustava:	30 m³/h
Max. protok:	255 m³/h
Max. protok sustava:	170 m³/h
Dobivena visina dizanja crpke:	56 m
Visina max.:	80 m
Impeleriglavni:	3
Maksimalni radni tlak:	16 bar
Naziv glavne crpke:	CR64-3-1
Broj glavne crpke:	96123532
Broj crpki:	3
Položaj ventila:	na tlačnoj strani
Montaža:	
Maksimalni radni tlak:	16 bar
Maksimalni ulazni tlak:	8 bar
Standardna priрубnica:	DIN
Ulaz crpke:	DN 200
Izlaz crpke:	DN 200
Tlačna faza:	PN 16
Tekućina:	
Raspon temperature tekućine:	5 ... 70 °C
Temp. tekućine:	20 °C
Gustoća:	998.2 kg/m³
Električni podaci:	
Snaga (P2) glavne crpke:	15 kW
Frekvencija struje:	50 Hz
Nazivni napon:	3 x 380 - 415 V, 50 Hz, PE
Nazivni napon glavne crpke:	3 x 380 V
Metoda startanja:	frekventno vodjene
Glavno startanje:	frekventno vodjene
Nazivna struja sustava:	84 A
Klasa zaštite (IEC 34-5):	IP54
Mrežni kabel:	L1,L2,L3,PE: 4x25-35 mm²
Sprječavanje radijsmetnje:	EMC Certificate - Hydro MPC 1 [2007]
Regulacije:	
Tip regulacije:	S
Radna jedinica:	CU 351
Regulacija brzine:	NIŠTA
Spremnik:	
Membranski spremnik:	Ne
Ostalo:	
Osnovno postrojenje:	Y
Neto masa:	913 kg
Bruto masa:	1150 kg
Jezik:	GB
Pregled tipova:	Internacionalni
Konfig. datoteka Control MPC:	96307058
Konfig. datoteka Hydro MPC:	96307205
Epstan verzija:	V5.1049



91044129 Hydro MPC-S 3 CR64-3-1 50 Hz



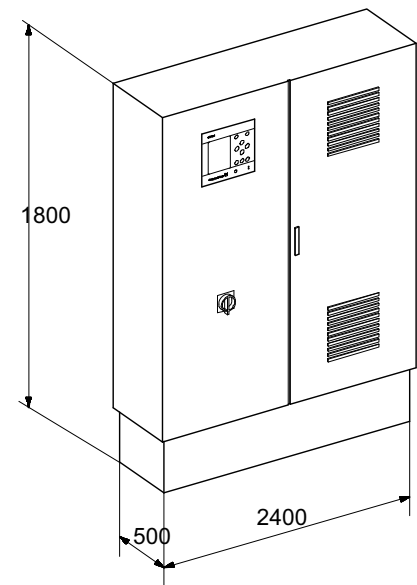
91044129 Hydro MPC-S 3 CR64-3-1 50 Hz



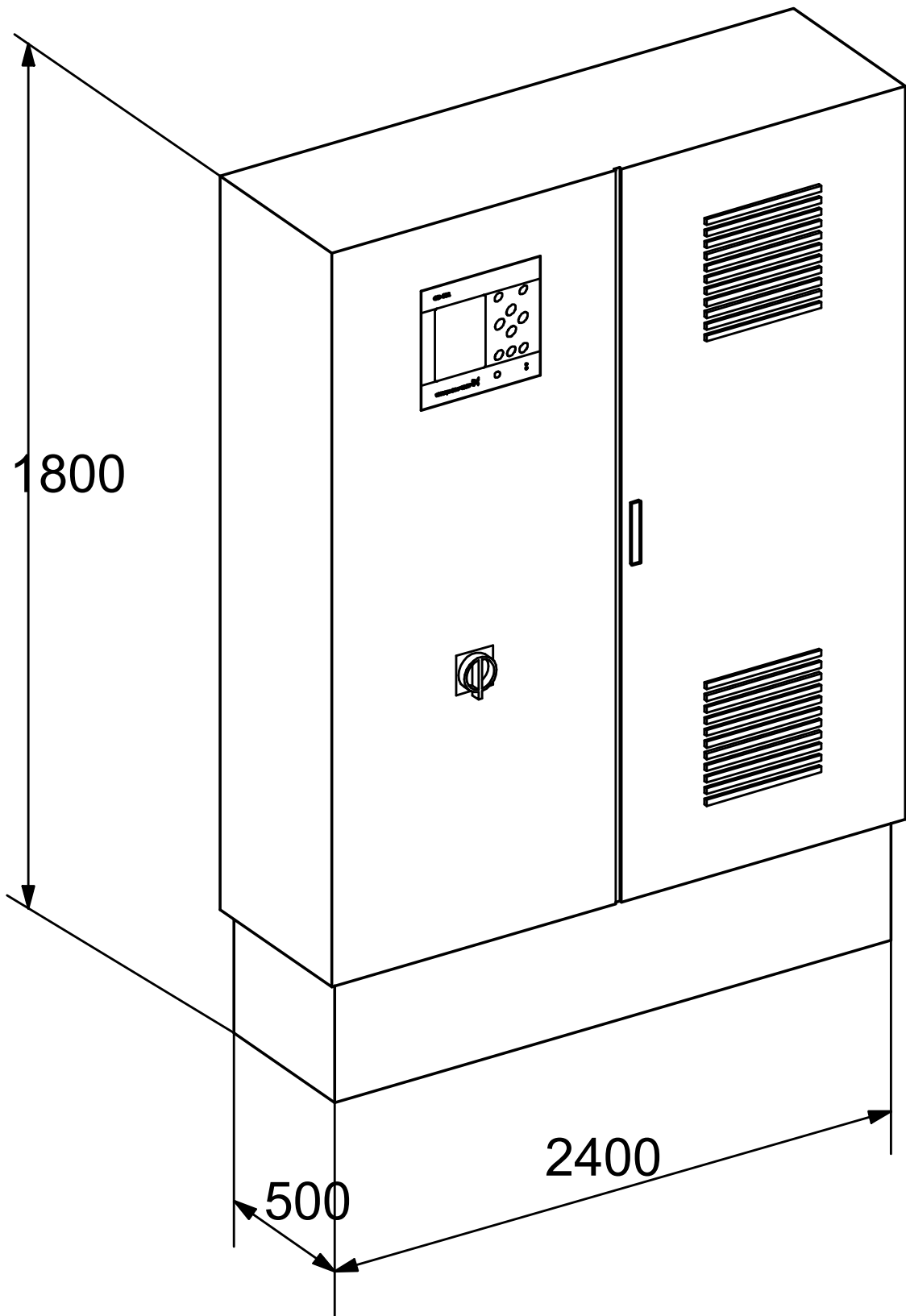
Pozor! Sve jedinice su u [mm] ukoliko nije navedeno drugačije.
Upozorenje: Ovaj pojednostavljeni crtežs dimenzijama ne prikazuje sve detalje.

Position	Qty.	Description	Single Price
		- Pump test run (prevents pumps from seizing up and liquid from decaying in pumps, and removes trapped air) - Pilot pump (control of pilot-pump operation in low-flow situations) - option - Pump stop attempt (automatic stop attempts, self-learning or at fixed intervals) - Pump start and stop speeds (control of start and stop speeds of pumps) - Min. performance (selection of minimum performance) - Compensation for pump start-up time (compensation for the time it take a mains-operated pump to reach full performance) - Stop function (stop of the last pump in operation during low-flow situations) - Soft pressure build-up (ensures smooth start-up of systems with empty pipes) - Emergency run (pumps keep running regardless of warnings and alarms) - Setting of digital inputs - Setting of analog inputs - Setting of digital outputs - Setting of min., max. and user-defined duty - Pump curve data (entering of data describing the performance curves) - Control source (control from CU 351 or via bus connection) - Fixed inlet pressure (setting of fixed inlet pressure) - Flow estimation (optimisation of operation according to performance curves) - Dry-running protection (with pressure/level switch, pressure transmitter or level transmitter) - Min. pressure (monitoring of minimum pressure) - Max. pressure (monitoring of maximum pressure) - External fault (monitoring of external fault) - Limit exceeded 1 and 2 (monitoring of a set limit 1 (warning limit) and limit 2 (alarm limit)) - Pumps outside duty range (indication of whether pumps fall outside duty range) - Pressure relief function (monitoring of maximum system pressure) - option - Display language (selection of display language) - Display units (SI or US units) - Date and time (setting of day and time) - Passwords (setting of password for menu ?Operation? and/or ?Settings?) - Ethernet connection (controlling the system from a remote PC) - GENIbus number (allocation of GENIbus number) - Software status (status of software version). Control MPC was designed according to these directives: - Machinery Directive (98/37/EC) Standards used: EN 809 [2000] and EN 60204-1 [2006]. - EMC Directive (2004/108/EC) Electrical data: Power (P2) main pump: 37 kW Mains frequency: 50 Hz Rated voltage: 3 x 400 V, 50 Hz, PE Rated voltage main pump: 3 x 400 V Starting main: frequency converter Rated current of system: 216 A Current range main pump: 64.1 .. 72 A Enclosure class (IEC 34-5): IP54 Mains cable: 4x120..150 mm² Radio interference supression: EMC Certificate - Control MPC 1 [2007] Others: Net weight: 475 kg Gross weight: 625 kg Language: GB Standard: IEC	

Description	Value
Product name:	Control MPC-F 3x37 SD
Product No:	96016615
Technical:	
Number of pumps:	3
Electrical data:	
Power (P2) main pump	37 kW
Mains frequency:	50 Hz
Rated voltage:	3 x 400 V, 50 Hz, PE
Rated voltage main pump	3 x 400 V
Starting main:	frequency converter
Rated current of system	216 A
Current range main pump	64.1 .. 72 A
Enclosure class (IEC 34-5):	IP54
Mains cable	4x120..150 mm2
Cable size:	7x10..16 mm2 shielded
	2x0.5 mm2
Radio interference supression:	EMC Certificate - Control MPC 1 [2007]
Controls:	
Control type:	F
Provision:	floor standing
Operation unit:	CU 351
Others:	
Net weight:	475 kg
Gross weight:	625 kg
Language:	GB
Standard:	IEC
Epstan version:	V5.0841



96016615 Control MPC-F 3x37 SD 50 Hz



Note! All units are in [mm] unless others are stated.
Disclaimer: This simplified dimensional drawing does not show all details.