

Applications

ESPA CKE inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of the building or application. ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true to the traditional principles of quality engineering. Due to the compact design ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipework and the provision of a suitable electrical supply.

Operation principle

Fully automatic variable speed operation single pump booster set. Complete unit controlled by **ESPA ESD** Speedrive (Variable Frequency Driver) for water supply at constant pressure.

The booster set adapts the speed of the motor to the water demand in order to ensure the pressure requested at any flow demand.

The pressure of the installation is controlled at any time by a pressure transducer placed on the discharge manifold and the information provided by this instrument allows the ESPA Speedrive to regulate the pump speed operation to the flow demand; and consequently saves energy adapting the power consumption to the water demand at any time.

Features

Stainless steel suction and discharge manifolds AISI 304.

Stain chassis finished in black epoxy coating.

WRAS approved nickel plated brass ball valves on each pump providing individual isolation if necessary.

WRAS check valves on each pump.

Anti-vibration mounts as standard.

8- 12- 24 lt. expansion vessel depending on the pumps size. (WRAS Approved)

Control panel with MCB's.

FVC (Free volt contacts) for the external control of the alarms.

Full documentation provided with each booster set.

ESPA ESD advantages

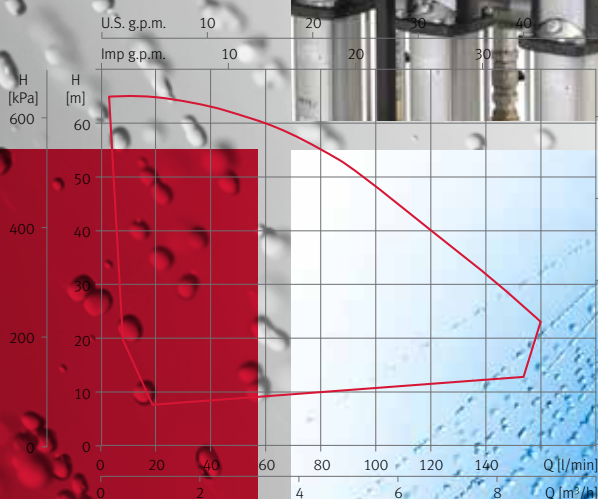
An innovative system that can be used with a variation of pump types including multistage vertical or horizontal pumps. Saves energy up to 50% silent running compact and can extend the life cycle of the pump.

LENNTECH
WATER TREATMENT Solutions

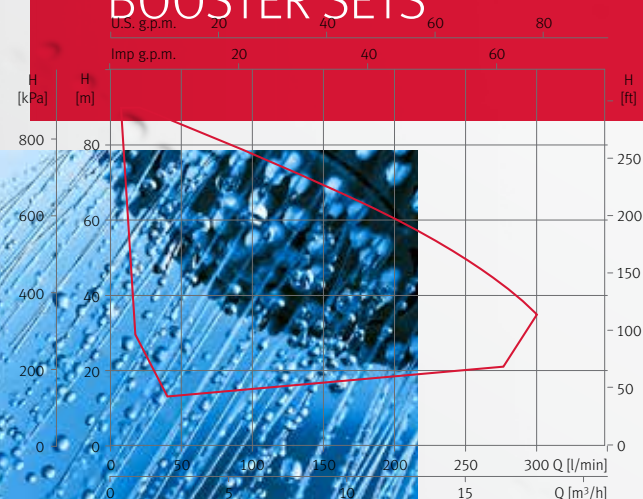
ESPA
Innovative Solutions



Hydraulic performance area CKE1M



Hydraulic performance area CKE1M





Advanced solutions in automatic pumping equipment's

Water supply booster sets, firefighting units and special solutions in pumping systems.

ESPA offers a large range of solutions to provide the best solutions to the more challenging applications in pumping requirements for automatic water supply for household, building services, hotels, agricultural, hospitals and industrial processes.

ESPA evaluates, designs and manufactures booster sets for the automatic supply of water. The **ESPA** range of products can be adapted to the installation requirements. The **ESPA** engineering application department can adjust the standard range of **ESPA** booster sets to satisfy specific requirements in all installations.

The standard range of **ESPA** booster sets can be configured for various operational systems. These include fixed speed DOL, star-delta, variable speed, duty assist in cascade operation and duty-standby configurations. As a result, the standard **ESPA** range booster sets can cover applications requiring the smallest and compact domestic systems to the largest commercial installations. Evidently, **ESPA** can offer a booster set to cover virtually all practical requirements.

The standard range of **ESPA** booster sets can be configured from 1 to 4 pumps with sophisticated communication enabling duty assist and periodic pump demand rotation. **ESPA** can also offer control systems for pump sets consisting of up to 8 pumps used in larger systems.

ESPA offers the best solutions in energy saving by utilising variable speed pump controllers. The aim of using these controllers is to ensure the booster set is operating at the BEP (Best Efficient Point) of the performance curve within a variable flow demand system. All standard **ESPA** motors comply with the new IE3 efficiency requirements.

In addition to the standard constant pressure booster sets, **ESPA** can also produce constant flow systems which utilise constant flow sensors. These systems can service applications such as golf course irrigation.

The **ESPA** Applications Engineering Department offers the assistance service for booster set sizing and can also analyse the best option regarding the LCC (Life Cycle Cost) of the system. The **ESPA** after sales service offers, on request, the commissioning and service of all **ESPA** booster sets which guarantees the equipment is operating to the best point of efficiency and reliability.

ESPA also offers a standard range of firefighting booster sets which are designed, manufactured and tested according to standards such as BS 12845:2015. The standard range includes duty, standby and jockey pumps which can be driven by either electrical motors or diesel engines. Please see our specific catalogue for more information on the firefighting booster sets **ESPA** can offer.

Speedrive



Improved quality in water supply: constant pressure

The most efficient system for adjusting a pump's hydraulic performance to the pressure and flow requirements of supplying water is through the use of **variable-speed** technology. In the case of supplying water to a building that requires a constant pressure regardless of the water flow requested, with a variable-speed system, in addition to improved efficiency, a high-quality, oscillation-free service is obtained, guaranteeing greater durability of the equipment and the installation. The ESD unit receives a proportional signal from a pressure transducer fitted on the discharge pipeline. The ESD processes this signal and regulates the motor speed in order to keep the pressure constant at the established level, regardless of the variations in flow demand. With this pump set the pump's operation can be adapted to the different flow demands, constantly setting the consumption that is strictly necessary for the demand at any given moment. The energy consumption will be proportional to the water consumption. In comparison to the same system running at a fixed speed, this translates directly into energy savings.

Operating modes

The ESD has a backlit display and a 5-button keypad for displaying the user parameters. The installer can easily regulate and modify the basic operational parameters through the same interface. It also includes a reset option to recover the default factory parameters.

Adjustable operating parameters

Language: options ES, EN, DE, IT, FR.

Operation: AUTOMATIC – MANUAL.

Set pressure: set point.

Differential pressure: hysteresis or difference in the set pressure that marks the start-up of the pump.

Maximum motor intensity: to regulate motor protection.

Pump sleep frequency: sleep frequency; this can be set manually or automatically.

ESD has a system for automatically calculating the pump's sleep frequency on the basis of the specific characteristics of each installation and the set pressure point.

Parameters displayed

Set pressure.

Differential pressure.

Maximum motor intensity

Stoppage frequency.

Pump stop temporisation.

Module temperature.

Alarm display: power surge, short-circuit, power failure and module temperature.

Operational register: number of start-ups, hours in operation and hours online.

Access to advanced parameter settings, the deletion of the operational register and of the alarm history is password protected.



Pump stop frequency

Nominal motor frequency: 50 Hz/60 Hz.

Motor rotation reversal.

ON-OFF auxiliary pump: auxiliary pump in fixed-speed DOL operation.

Auxiliary pump in variable speed mode by ESD at variable speed.

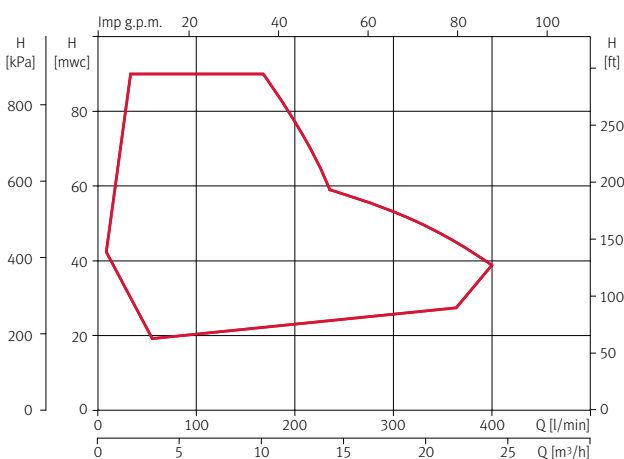
Configuration in auxiliary pumps

Activation frequency: activation frequency of auxiliary pumps.

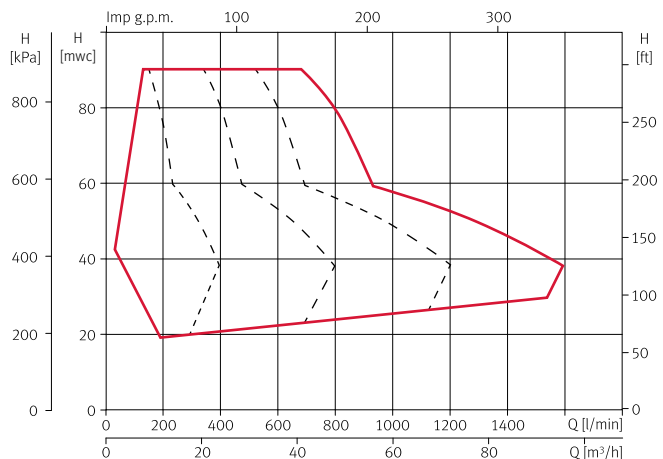
Auxiliary pump activation frequency.

Auxiliary pump maximum intensity.

Performance area with one pump

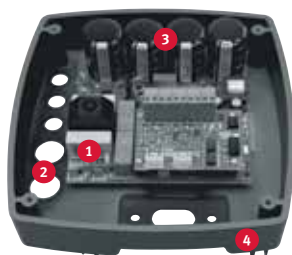


Performance area with sets of 4 pumps in parallel

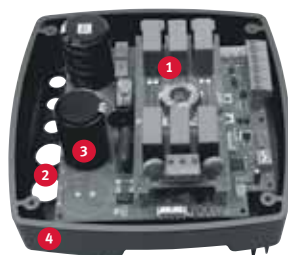


Electronic circuit

Speedrive M2



Speedrive T3



- 1 EMC fi lter
- 2 Input/output for cables
- 3 Power circuit
- 4 Aluminium radiator body

Pressure transducer

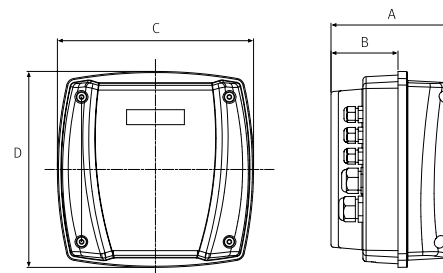


Device for digital pressure reading



Dimensions and weights

Model	A	B	C	D	Kg
Speedrive M2	128	71	207	207	2.2
Speedrive T3	142	85	207	207	2.5



Technical specifications - 50/60 Hz

Description	Single-phase M2	Three-phase T3/T4
Configuration	Built into the junction box	Built into the junction box
Power	230 V, single-phase	400 V, three-phase
Motor voltage	230 V, three-phase	400 V, three-phase
Maximum intensity	7 A	9 A
Cooling	Air-cooled	Air-cooled
Constant pressure	Yes	Yes
Constant flow	Programmable	Programmable
Second duty point	Programmable	Programmable
Dry running protection	Yes	Yes
Pressure transducer	External, 4-20 mA	External, 4-20 mA
Additional digital input	1	1
Additional analogical input	1	1
Level switch terminal	Yes	Yes
PTC	Optional	Optional
External communication port	RS 485	RS 485
Screen	Backlit	Backlit
Auxiliary relay	1 for external alarm	No
Minimum working frequency	Adjustable	Adjustable
Acceleration ramp	1 fixed	1 fixed
Deceleration ramp	1 fixed	1 fixed
Stop temporisation	Yes	Yes
Maximum No. of pumps	Up to 4	Up to 4
Maximum No. of slave pumps (fixed speed)	Up to 3	Up to 3

For ESPA pump model's only XVM, Aspri, Multi, etc.

Speedrive



Configuration

The ESPA Speedrive (ESD) variable-frequency driver has been designed to be integrated with the following **ESPA** pumps: **MULTI-ESD**, **PRISMA-ESD** and **XVM-ESD**. With this electronic unit (employing advanced VFD technology) the pump and driver set extends the hydraulic range for each model, guaranteeing efficient service at each point in the performance area, beyond working at one point on a curve.

The **ESD module can be adapted to the three-phase** motors of these ESPA pumps, **even in existing installations**, thus improving the service quality and extending the unit's performance range. What is more, the large accumulation tank, needed for fixed speed operation, can be replaced by a small expansion vessel. The variable-speed system **eliminates with fluctuations in the water flow**.

CKE2 MULTI 35 6

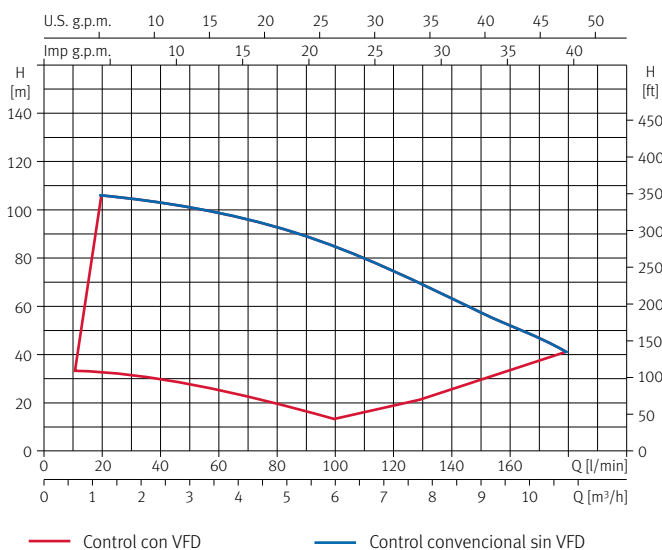


MULTI ESD 35 6



PRISMA ESD 35 6

Control comparison with and without VFD



Booster sets with ESD control

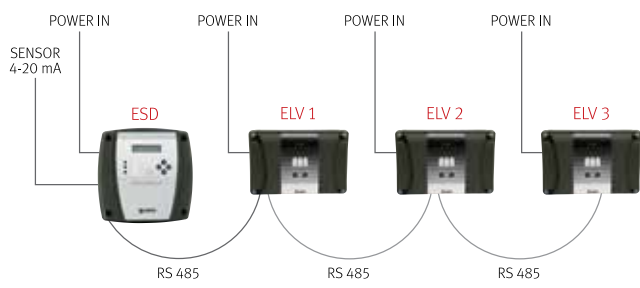
The ESD modules can control the operation of pressure booster sets up to 4 pumps.
The ESD modules can control the operation of pressure into two different manners:

1. Units with one single ESD module:

- **CKED** 2 pumps: variable-speed main pump + fixed-speed DOL auxiliary pump.
- **CKED 3** pumps: variable-speed main pump + 2 fixed-speed randomly alternating DOL auxiliary pumps.
- **CKED 4 pumps**: variable-speed main pump + 3 fixed-speed randomly alternating DOL auxiliary pumps.



CKED MULTI



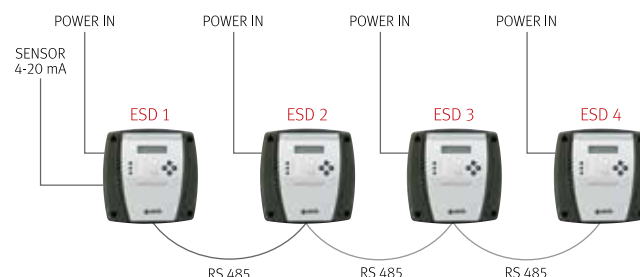
1 single ESD regulating the service pump and operating up to 3 auxiliary pumps in DOL start-up. Configuration of the master pump operating at variable speeds and 3 auxiliary pumps with in cascade operation start-up for greater flow demands. Random alternation in the start-up of the auxiliary pumps.

2. Units with multiple ESD modules (up to 4):

- **CKE2**: 2 pumps: variable-speed mainpump+variable-speed auxiliary pump, both operating in cyclical duty changeover.
- **CKE3**: 3 pumps: variable-speed main pump + 2 variable-speed auxiliary pumps, all 3 operating in cyclical duty changeover.
- **CKE4**: 3 pumps: variable-speed main pump + 2 variable-speed auxiliary pumps, all 3 operating in cyclical duty changeover.



CKE4 MULTI



A pump set of up to 4 pumps controlled by 4 ESDs.
Configuration of service pumps and back-up pumps, all regulated. Random alternation between the 4 pumps at each system start-up. Once the auxiliary pumps come into operation, all the regulated pumps operate in synchronisation at the same frequency. This operational mode enhances the effectiveness of the pump set and cuts down on the start-up and shutdown cycle for pumps.



CKE2 XVM

Model ESD	Input	Output		Dimensions		Weight (kg)
	Power source voltage (V)	Max. motor current (A)	Motor voltage (V)	A (mm)	B (mm)	
M2	1~230 V AC ± 10 %	7	3~230 V AC	128	71	2.2
T3	3~400 V AC ± 10 %	9	3~400 V AC	142	85	2.5
T4	3~400 V AC ± 10 %	13	3~400 V AC	142	85	2.5

Operating conditions:

IP 55 protection.

Maximum ambient temperature: 40 °C.

For M2: 1 free, maximum intensity power contact. 2 A, 1~230 V AC.

Digital input for 4-20 mA transducer with 24-V DC power source.

Auxiliary transducer input.

Digital input for the external level switch, or -free volt- contact to switch the circuit on and off.

Communication between ESD modules RS 485 serial port (up to 4 ESDs).

CKE1 MULTI VS Variable speed pressurization



Single pump booster sets

Applications

ESPA **CKE** inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of the building or application. ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true to the traditional principles of quality engineering. Due to the compact design ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipework and the provision of a suitable electrical supply.

Operation principle

Fully automatic variable speed operation single pump booster set. Complete unit controlled by **ESPA ESD** Speedrive (Variable Frequency Driver) for water supply at constant pressure. The booster set adapts the speed of the motor to the water demand in order to ensure the pressure requested at any flow demand. The pressure of the installation is controlled at any time by a pressure transducer placed on the discharge manifold and the information provided by this instrument allows the ESPA Speedrive to regulate the pump speed operation to the flow demand; and consequently saves energy adapting the power consumption to the water demand at any time.

Features

Stainless steel suction and discharge manifolds AISI 304.
Stain chassis finished in black epoxy coating.
WRAS approved nickel plated brass ball valves on each pump providing individual isolation if necessary.
WRAS check valves on each pump.
Anti-vibration mounts as standard.
8- 12- 24 lt. expansion vessel depending on the pumps size. (WRAS Approved)
Control panel with MCB's.
FVC (Free volt contacts) for the external control of the alarms.
Full documentation provided with each booster set.

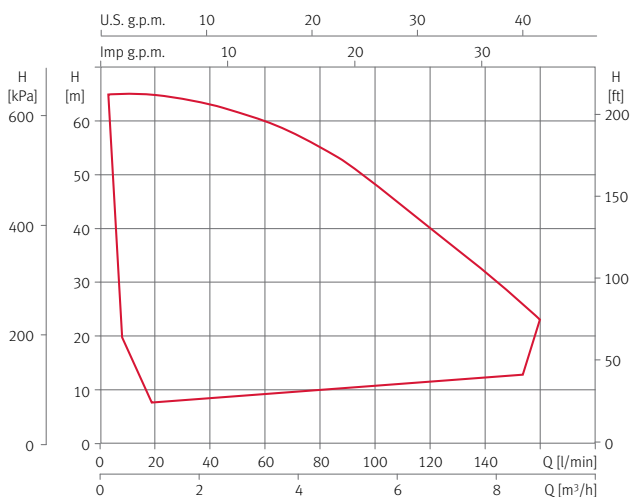
ESPA ESD advantages

An innovative system that can be used with a variation of pump types including multistage vertical or horizontal pumps. Saves energy up to 50% silent running compact and can extend the life cycle of the pump.

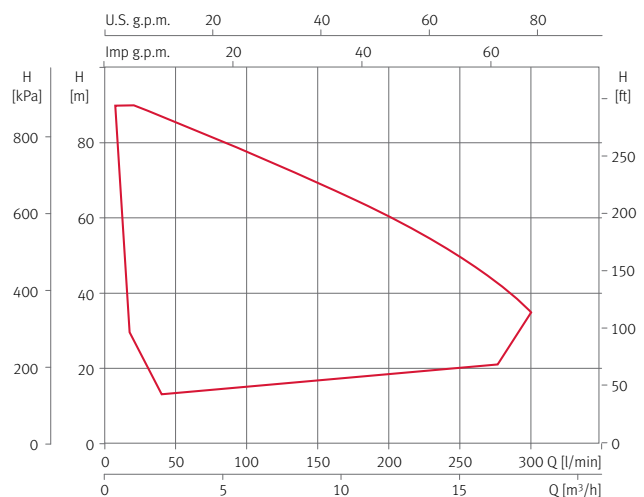


The ESPA Engineering Application Service is ready to design and manufacture customised solutions for any required application, modifying the standard range increasing the flow, the head or changing operation mode.

Hydraulic performance area CKE1M



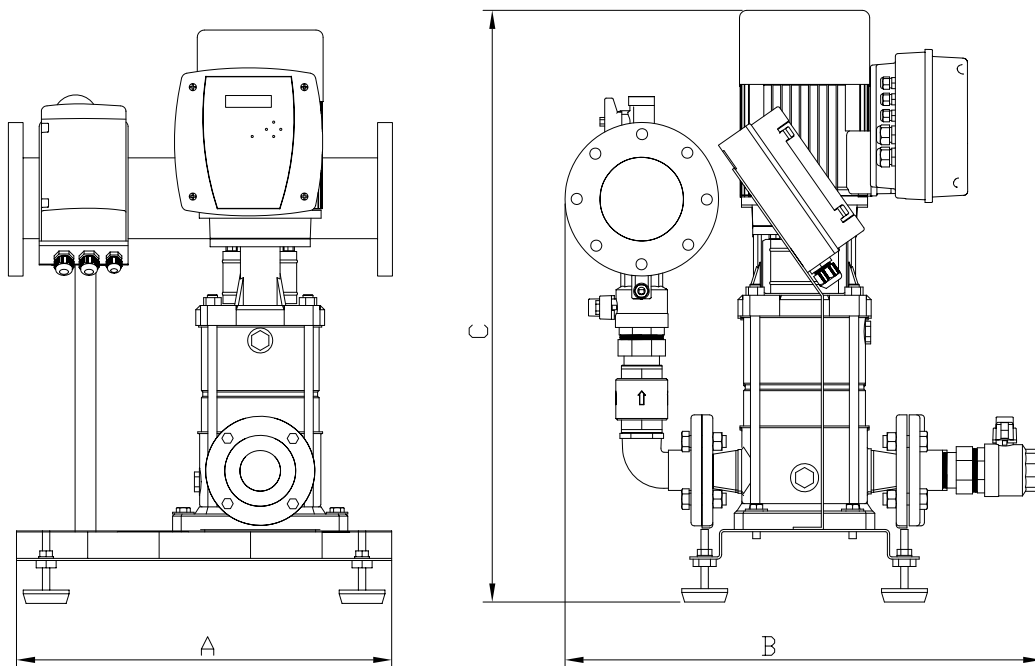
Hydraulic performance area CKE1



CKE1 MULTI VS Variable speed pressurization



CKE1 MULTI



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE1M Multi VS4 05F07 UK	Multi VS4 05F07	1	0.75	M2	1	25	25	1"	1"		2"	400	440	904	42	191837
CKE1M Multi VS4 07F11 UK	Multi VS4 07F11	1	1.1	M2	1	25	25	1"	1"		2"	400	440	904	52	191838
CKE1M Multi VS4 10F15 UK	Multi VS4 10F15	1	1.5	M2	1	25	25	1"	1"		2"	400	440	904	53	196237
CKE1M Multi VS4 14F22 UK	Multi VS4 14F22	1	2.2	M3	1	25	25	1"	1"		2"	400	440	904	57	185238
CKE1M Multi VS6 03F07 UK	Multi VS6 03F07	1	0.75	M2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	43	185239
CKE1M Multi VS6 05F11 UK	Multi VS6 05F11	1	1.1	M2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	45	185240
CKE1M Multi VS6 07F15 UK	Multi VS6 07F15	1	1.2	M2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	53	194999
CKE1M Multi VS6 10F22 UK	Multi VS6 10F22	1	2.2	M3	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	57	185242
CKE1M Multi VS10 03F11 UK	Multi VS10 03F11	1	1.1	M2	1	40	40	1 1/2"	1 1/2"		2"	448	540	904	55	185241
CKE1M Multi VS10 04F15 UK	Multi VS10 04F15	1	1.5	M2	1	40	40	1 1/2"	1 1/2"		2"	448	540	904	63	185243
CKE1M Multi VS10 06F22 UK	Multi VS10 06F22	1	2.2	M3	1	40	40	1 1/2"	1 1/2"		2"	448	540	904	69	185244

CKE1 MULTI VS Variable speed pressurization



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE1 Multi VS4 05F07 UK	Multi VS4 05F07	1	0.75	T2	1	25	25	1"	1"		2"	400	440	904	42	197250
CKE1 Multi VS4 07F11 UK	Multi VS4 07F11	1	1.1	T2	1	25	25	1"	1"		2"	400	440	904	52	185251
CKE1 Multi VS4 10F15 UK	Multi VS4 10F15	1	1.5	T2	1	25	25	1"	1"		2"	400	440	904	53	185254
CKE1 Multi VS4 14F22 UK	Multi VS4 14F22	1	2.2	T2	1	25	25	1"	1"		2"	400	440	904	57	185255
CKE1 Multi VS4 20F30 UK	Multi VS4 02F03	1	3	T3	1	25	25	1"	1"		2"	400	440	990	74	185244
CKE1 Multi VS6 03F07 UK	Multi VS6 03F07	1	0.75	T2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	43	185245
CKE1 Multi VS6 05F11 UK	Multi VS6 05F11	1	1.1	T2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	45	185246
CKE1 Multi VS6 07F15 UK	Multi VS6 07F15	1	1.5	T2	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	53	185247
CKE1 Multi VS6 10F22 UK	Multi VS6 10F22	1	2.2	T3	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	57	185248
CKE1 Multi VS6 14F30 UK	Multi VS6 14F30	1	3	T3	1	32	32	1 1/4"	1 1/4"		2"	400	440	904	74	185249
CKE1 Multi VS6 18F40 UK	Multi VS6 18F40	1	4	T4	1	32	32	1 1/4"	1 1/4"		2"	640	679	967	87	185250
CKE1 Multi VS10 03F11 UK	Multi VS10 03F11	1	1.1	T2	1	40	40	1 1/2"	1 1/2"		2"	640	679	904	55	185252
CKE1 Multi VS10 04F15 UK	Multi VS10 04F15	1	1.5	T2	1	40	40	1 1/2"	1 1/2"		2"	640	679	904	63	185253
CKE1 Multi VS10 06F22 UK	Multi VS10 06F22	1	2.2	T3	1	40	40	1 1/2"	1 1/2"		2"	640	679	904	69	185254
CKE1 Multi VS10 08F30 UK	Multi VS10 08F30	1	3	T3	1	40	40	1 1/2"	1 1/2"		2"	640	679	904	83	185255
CKE1 Multi VS10 09F40 UK	Multi VS10 09F40	1	4	T4	1	40	40	1 1/2"	1 1/2"		2"	640	679	904	91	185256
CKE1 Multi VS10 11F40 UK	Multi VS10 11F40	1	4	T4	1	40	40	1 1/2"	1 1/2"		2"	640	679	964	94	185257
CKE1 Multi VS10 15F55 UK	Multi VS10 15F55	1	5.5	T4	1	40	40	1 1/2"	1 1/2"		2"	640	679	1127	157	185258
CKE1 Multi VS15 02F22 UK	Multi VS15 02F22	1	2.2	T3	1	50	50	2"	2"		4"	640	679	914	66	185260
CKE1 Multi VS15 03F30 UK	Multi VS15 03F30	1	3	T3	1	50	50	2"	2"		4"	640	679	914	78	185261
CKE1 Multi VS15 04F40 UK	Multi VS15 04F40	1	4	T4	1	50	50	2"	2"		4"	640	679	914	87	185262
CKE1 Multi VS15 06F55 UK	Multi VS15 06F55	1	5.5	T4	1	50	50	2"	2"		4"	640	679	946	143	185263
CKE1 Multi VS25 01F22 UK	Multi VS25 01F22	1	2.2	T3	1	65	65	2 1/2"	2 1/2"		4"	710	734	920	98	185265
CKE1 Multi VS25 02F40 UK	Multi VS25 02F40	1	4	T4	1	65	65	2 1/2"	2 1/2"		4"	710	734	920	119	185266
CKE1 Multi VS25 03F55 UK	Multi VS25 03F55	1	5.5	T4	1	65	65	2 1/2"	2 1/2"		4"	710	734	1024	160	185267

The dimensions stated in the table above are for guidance purposes only. Please contact ESPA UK prior to order to confirm these dimensions.

ESPA is constantly improving its products and services; therefore it reserves the right to update or modify specifications at any time without prior notice.

CKE2 MULTI VS Variable speed pressurization



Twin pumps booster sets

Applications

ESPA **CKE** inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of the building or application. ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true to the traditional principles of quality engineering. Due to the compact design ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipework and the provision of a suitable electrical supply.

Operation principle

Fully automatic variable speed operation twin pump booster set. Complete unit controlled by **ESPA ESD** Speedrive (Variable Frequency Driver) for water supply at constant pressure. Two pumps booster set in duty –assist or duty stand-by configuration. All pumps in variable speed operation. The booster set adapts the speed of the motors to the water demand in order to ensure the pressure requested at any flow demand.

The pressure of the installation is controlled at any time by a pressure transducer placed on the discharge manifold and the information provided by this instrument allows the ESPA Speedrive to regulate the pump speed operation to the flow demand; and consequently saves energy adapting the power consumption to the water demand at any time.

Features

- Stainless steel suction and discharge manifolds AISI 304.
- Stain chassis finished in black epoxy coating.
- WRAS approved nickel plated brass ball valves on each pump providing individual isolation if necessary.
- WRAS check valves on each pump.
- Anti-vibration mounts as standard.
- 8- 12- 24 lt. expansion vessel (WRAS approved) depending on the pumps size.
- Control panel with MCB's.
- FVC (Free volt contacts) for the external control of the alarms.
- Full documentation provided with each booster set.

ESPA ESD advantages

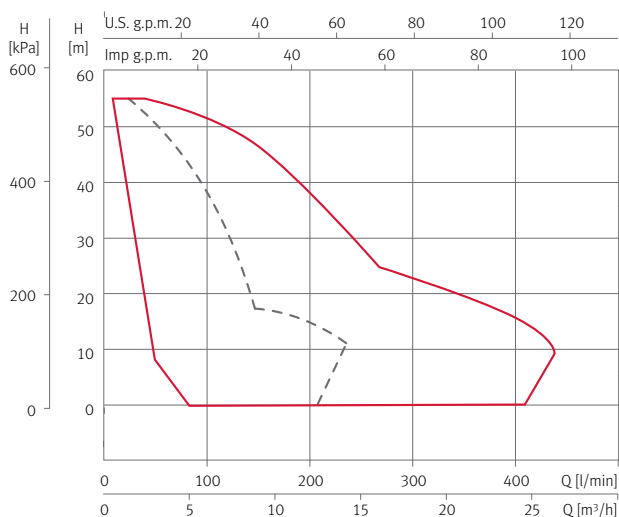
An innovative system that can be used with a variation of pump types including multistage vertical or horizontal pumps. Saves energy up to 50% silent running compact and can extend the life cycle of the pump.



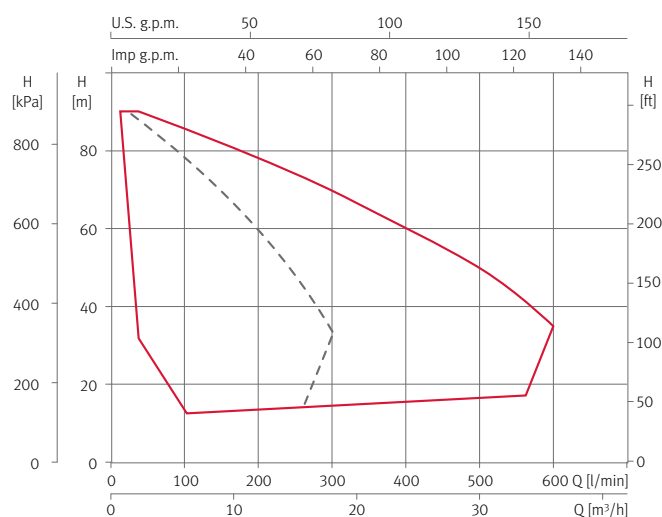
The ESPA Engineering Application Service is ready to design and manufacture customised solutions for any required application, modifying the standard range increasing the flow, the head or changing operation mode.

ADVANCED SOLUTIONS IN
AUTOMATIC BOOSTER SETS

Hydraulic performance area CKE1M



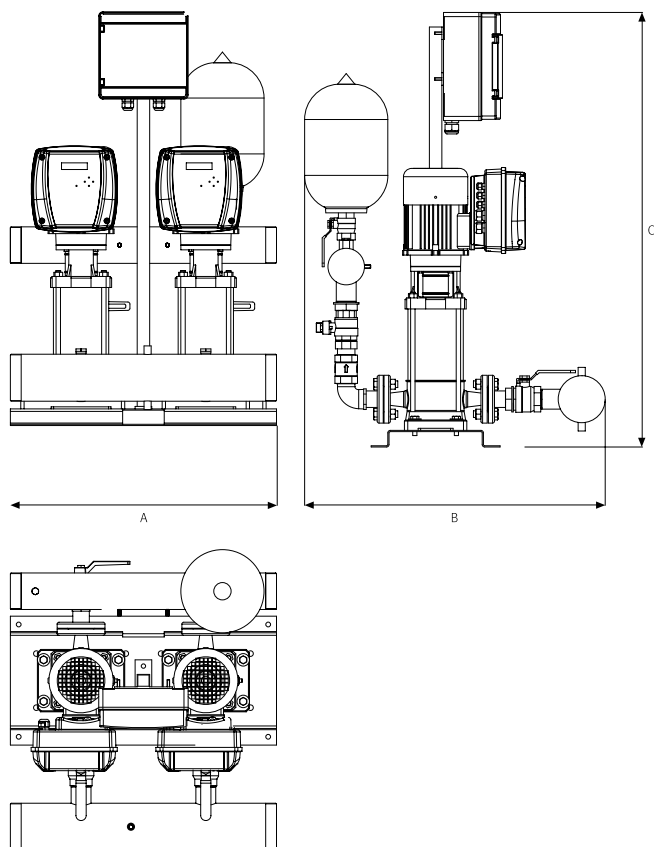
Hydraulic performance area CKE1



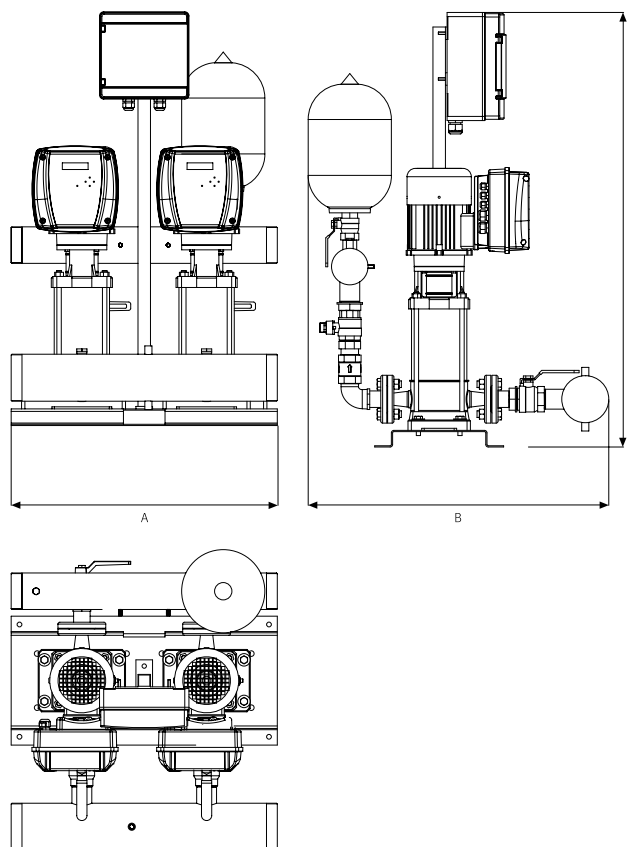
CKE2 MULTI VS Variable speed pressurization



CKE2M MULTI VS



CKE2 MULTI VS



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE2M Multi VS4 05F07 UKASP	Multi VS4 05F07	2	0.75	M2	2	25	25	1"	1"	2"	2"	620	800	1188	101	191841
CKE2M Multi VS4 07F11 UKASP	Multi VS4 07F11	2	1.1	M2	2	25	25	1"	1"	2"	2"	620	800	1188	117	191842
CKE2M Multi VS4 10F15 UKASP	Multi VS4 10F15	2	1.5	M2	2	25	25	1"	1"	2"	2"	620	800	1188	129	191843
CKE2M Multi VS4 14F22 UKASP	Multi VS4 14F22	2	2.2	M3	2	25	25	1"	1"	2"	2"	620	800	1188	135	191844
CKE2M Multi VS6 03F07 UKASP	Multi VS6 03F07	2	0.75	M2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	71	191850
CKE2M Multi VS6 05F11 UKASP	Multi VS6 05F11	2	1.1	M2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	74	191851
CKE2M Multi VS6 07F15 UKASP	Multi VS6 07F15	2	1.2	M2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	87	191852
CKE2M Multi VS6 10F22 UKASP	Multi VS6 10F22	2	2.2	M3	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	94	191853
CKE2M Multi VS10 03F11 UKASP	Multi VS10 03F11	2	1.1	M2	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	90	191860
CKE2M Multi VS10 04F15 UKASP	Multi VS10 04F15	2	1.5	M2	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	104	191861
CKE2M Multi VS10 06F22 UKASP	Multi VS10 06F22	2	2.2	M3	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	113	191862

CKE2 MULTI VS Variable speed pressurization



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE2 Multi VS4 05F07 UKASP	Multi VS4 05F07	2	0.75	T2	2	25	25	1"	1"	2"	2"	620	800	1188	69	191870
CKE2 Multi VS4 07F11 UKASP	Multi VS4 07F11	2	1.1	T2	2	25	25	1"	1"	2"	2"	620	800	1188	85	191871
CKE2 Multi VS4 10F15 UKASP	Multi VS4 10F15	2	1.5	T2	2	25	25	1"	1"	2"	2"	620	800	1188	87	191872
CKE2 Multi VS4 14F22 UKASP	Multi VS4 14F22	2	2.2	T2	2	25	25	1"	1"	2"	2"	620	800	1188	94	191873
CKE2 Multi VS4 20F30 UKASP	Multi VS4 02F03	2	3	T3	2	25	25	1"	1"	2"	2"	620	800	1188	122	191874
CKE2 Multi VS6 03F07 UKASP	Multi VS6 03F07	2	0.75	T2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	71	191880
CKE2 Multi VS6 05F11 UKASP	Multi VS6 05F11	2	1.1	T2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	74	191881
CKE2 Multi VS6 07F15 UKASP	Multi VS6 07F15	2	1.5	T2	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	87	191882
CKE2 Multi VS6 10F22 UKASP	Multi VS6 10F22	2	2.2	T3	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	94	191883
CKE2 Multi VS6 14F30 UKASP	Multi VS6 14F30	2	3	T3	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	122	191884
CKE2 Multi VS6 18F40 UKASP	Multi VS6 18F40	2	4	T4	2	32	32	1 1/4"	1 1/4"	2"	2"	620	800	1188	143	191885
CKE2 Multi VS10 03F11 UKASP	Multi VS10 03F11	2	1.1	T2	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	90	191890
CKE2 Multi VS10 04F15 UKASP	Multi VS10 04F15	2	1.5	T2	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	104	191891
CKE2 Multi VS10 06F22 UKASP	Multi VS10 06F22	2	2.2	T3	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	113	191892
CKE2 Multi VS10 08F30 UKASP	Multi VS10 08F30	2	3	T3	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	136	191893
CKE2 Multi VS10 09F40 UKASP	Multi VS10 09F40	2	4	T4	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	150	191894
CKE2 Multi VS10 11F40 UKASP	Multi VS10 11F40	2	4	T4	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	154	191895
CKE2 Multi VS10 15F55 UKASP	Multi VS10 15F55	2	5.5	T4	2	40	40	1 1/2"	1 1/2"	2"	2"	620	800	1188	258	191896
CKE2 Multi VS15 02F22 UKASP	Multi VS15 02F22	2	2.2	T3	2	50	50	2"	2"	4"	4"	620	800	1188	108	191900
CKE2 Multi VS15 03F30 UKASP	Multi VS15 03F30	2	3	T3	2	50	50	2"	2"	4"	4"	620	800	1188	129	191901
CKE2 Multi VS15 04F40 UKASP	Multi VS15 04F40	2	4	T4	2	50	50	2"	2"	4"	4"	620	800	1188	143	191902
CKE2 Multi VS15 06F55 UKASP	Multi VS15 06F55	2	5.5	T4	2	50	50	2"	2"	4"	4"	620	800	1188	235	191903
CKE2 Multi VS25 01F22 UKASP	Multi VS25 01F22	2	2.2	T3	2	65	65	2 1/2"	2 1/2"	4"	4"	620	800	1188	161	191910
CKE2 Multi VS25 02F40 UKASP	Multi VS25 02F40	2	4	T4	2	65	65	2 1/2"	2 1/2"	4"	4"	620	800	1188	196	191911
CKE2 Multi VS25 03F55 UKASP	Multi VS25 03F55	2	5.5	T4	2	65	65	2 1/2"	2 1/2"	4"	4"	620	800	1188	262	191912

The dimensions stated in the table above are for guidance purposes only. Please contact ESPA UK prior to order to confirm these dimensions.

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CKE3 MULTI VS Variable speed pressurization



Three pumps booster sets

Applications

ESPA **CKE** inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of the building or Application. ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true to the traditional principles of quality engineering. Due to the compact design ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipework and the provision of a suitable electrical supply.

Operation principle

Fully automatic variable speed operation twin pump booster set. Complete unit controlled by **ESPA ESD** Speedrive (Variable Frequency Driver) for water supply at constant pressure. Two pumps booster set in duty – assist – assist or duty – assist - stand-by configuration. All pumps in variable speed operation. The booster set adapts the speed of the motors to the water demand in order to ensure the pressure requested at any flow demand.

The pressure of the installation is controlled at any time by a pressure transducer placed on the discharge manifold and the information provided by this instrument allows the ESPA Speedrive to regulate the pump speed operation to the flow demand; and consequently saves energy adapting the power consumption to the water demand at any time.

Features

Stainless steel suction and discharge manifolds AISI 304.
Stain chassis finished in black epoxy coating.
WRAS approved nickel plated brass ball valves on each pump providing individual isolation if necessary.
WRAS check valves on each pump.
Anti-vibration mounts as standard.
8- 12- 24 lt. expansion vessel depending on the pumps size (WRAS Approved).
Control panel with MCB's.
FVC (Free volt contacts) for the external control of the alarms.
Full documentation provided with each booster set.

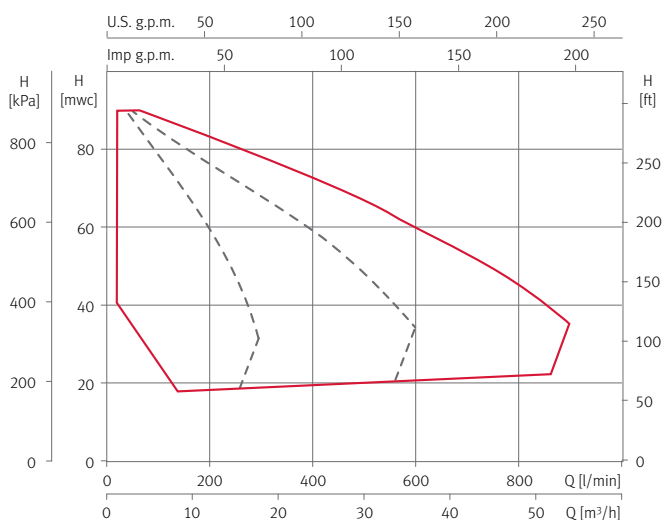
ESPA ESD advantages

An innovative system that can be used with a variation of pump types including multistage vertical or horizontal pumps. Saves energy up to 50% silent running compact and can extend the life cycle of the pump.



The ESPA Engineering Application Service is ready to design and manufacture customised solutions for any required application, modifying the standard range increasing the flow, the head or changing operation mode.

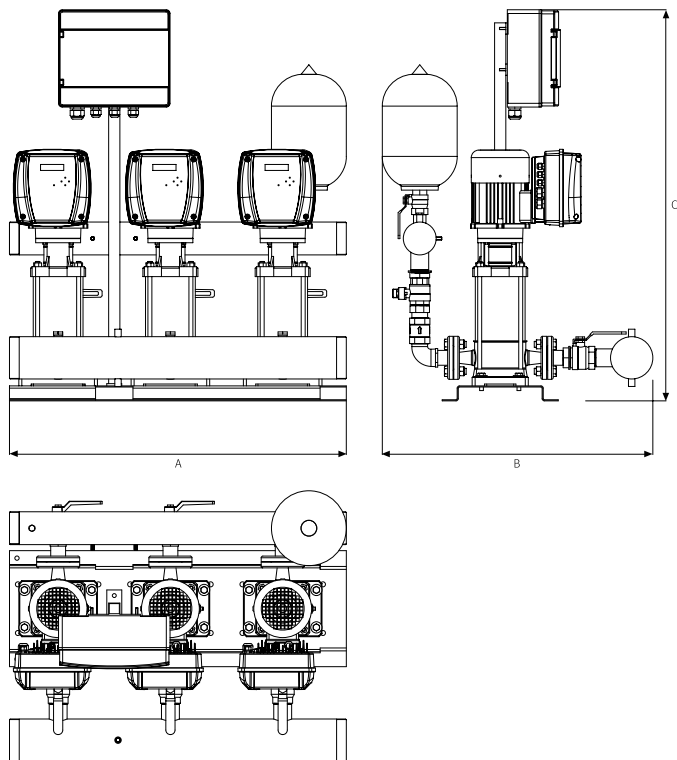
Hydraulic performance area CKE3



CKE3 MULTI VS Variable speed pressurization



CKE3 MULTI VS



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct	Disch.	Suc.	Disch.	A	B	C		
CKE3M Multi VS4 05F07 UKASP	Multi VS4 05F07	3	0.75	M2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	151	191920
CKE3M Multi VS4 07F11 UKASP	Multi VS4 07F11	3	1.1	M2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	172	191921
CKE3M Multi VS4 10F15 UKASP	Multi VS4 10F15	3	1.5	M2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	183	191922
CKE3M Multi VS4 14F22 UKASP	Multi VS4 14F22	3	2.2	M3	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	205	191923
CKE3M Multi VS6 03F07 UKASP	Multi VS6 03F07	3	0.75	M2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	163	191930
CKE3M Multi VS6 05F11 UKASP	Multi VS6 05F11	3	1.1	M2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	174	191931
CKE3M Multi VS6 07F15 UKASP	Multi VS6 07F15	3	1.2	M2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	190	191932
CKE3M Multi VS6 10F22 UKASP	Multi VS6 10F22	3	2.2	M3	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	205	191933
CKE3M Multi VS10 03F11 UKASP	Multi VS10 03F11	3	1.1	M2	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	195	191940
CKE3M Multi VS10 04F15 UKASP	Multi VS10 04F15	3	1.5	M2	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	225	191941

CKE3 MULTI VS Variable speed pressurization



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE3 Multi VS4 05F07 UKASP	Multi VS4 05F07	3	0.75	T2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	150	191950
CKE3 Multi VS4 07F11 UKASP	Multi VS4 07F11	3	1.1	T2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	185	191952
CKE3 Multi VS4 10F15 UKASP	Multi VS4 10F15	3	1.5	T2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	190	191953
CKE3 Multi VS4 14F22 UKASP	Multi VS4 14F22	3	2.2	T2	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	205	191954
CKE3 Multi VS4 20F30 UKASP	Multi VS4 02F03	3	3	T3	3	25	25	1"	1"	2 1/2"	2 1/2"	1300	870	1320	265	191955
CKE3 Multi VS6 03F07 UKASP	Multi VS6 03F07	3	0.75	T2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	155	191960
CKE3 Multi VS6 05F11 UKASP	Multi VS6 05F11	3	1.1	T2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	160	191961
CKE3 Multi VS6 07F15 UKASP	Multi VS6 07F15	3	1.5	T2	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	190	191962
CKE3 Multi VS6 10F22 UKASP	Multi VS6 10F22	3	2.2	T3	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	205	191963
CKE3 Multi VS6 14F30 UKASP	Multi VS6 14F30	3	3	T3	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	265	191964
CKE3 Multi VS6 18F40 UKASP	Multi VS6 18F40	3	4	T4	3	32	32	1 1/4"	1 1/4"	2 1/2"	2 1/2"	1300	870	1320	310	191965
CKE3 Multi VS10 03F11 UKASP	Multi VS10 03F11	3	1.1	T2	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	195	191970
CKE3 Multi VS10 04F15 UKASP	Multi VS10 04F15	3	1.5	T2	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	225	191971
CKE3 Multi VS10 06F22 UKASP	Multi VS10 06F22	3	2.2	T3	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	245	191972
CKE3 Multi VS10 08F30 UKASP	Multi VS10 08F30	3	3	T3	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	295	191973
CKE3 Multi VS10 09F40 UKASP	Multi VS10 09F40	3	4	T4	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	325	191974
CKE3 Multi VS10 11F40 UKASP	Multi VS10 11F40	3	4	T4	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	335	191975
CKE3 Multi VS10 15F55 UKASP	Multi VS10 15F55	3	5.5	T4	3	40	40	1 1/2"	1 1/2"	2 1/2"	2 1/2"	1300	870	1320	560	191976
CKE3 Multi VS15 02F22 UKASP	Multi VS15 02F22	3	2.2	T3	3	50	50	2"	2"	4"	4"	1300	870	1320	235	191980
CKE3 Multi VS15 03F30 UKASP	Multi VS15 03F30	3	3	T3	3	50	50	2"	2"	4"	4"	1300	870	1320	280	191981
CKE3 Multi VS15 04F40 UKASP	Multi VS15 04F40	3	4	T4	3	50	50	2"	2"	4"	4"	1300	870	1320	310	191982
CKE3 Multi VS15 06F55 UKASP	Multi VS15 06F55	3	5.5	T4	3	50	50	2"	2"	4"	4"	1300	870	1320	510	191983
CKE3 Multi VS25 01F22 UKASP	Multi VS25 01F22	3	2.2	T3	3	65	65	2 1/2"	2 1/2"	4"	4"	1300	870	1320	350	191990
CKE3 Multi VS25 02F40 UKASP	Multi VS25 02F40	3	4	T4	3	65	65	2 1/2"	2 1/2"	4"	4"	1300	870	1320	425	191991
CKE3 Multi VS25 03F55 UKASP	Multi VS25 03F55	3	5.5	T4	3	65	65	2 1/2"	2 1/2"	4"	4"	1300	870	1320	570	191992

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CKE4 MULTI VS Variable speed pressurization



Four pumps booster sets

Applications

ESPA **CKE** inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of the building or Application. ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true to the traditional principles of quality engineering. Due to the compact design ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipework and the provision of a suitable electrical supply.

Operation principle

Fully automatic variable speed operation twin pump booster set. Complete unit controlled by **ESPA ESD** Speedrive (Variable Frequency Driver) for water supply at constant pressure. Two pumps booster set in duty – assist – assist – assist or duty – assist – assist – stand-by configuration. All pumps in variable speed operation. The booster set adapts the speed of the motors to the water demand in order to ensure the pressure requested at any flow demand.

The pressure of the installation is controlled at any time by a pressure transducer placed on the discharge manifold and the information provided by this instrument allows the ESPA Speedrive to regulate the pump speed operation to the flow demand; and consequently saves energy adapting the power consumption to the water demand at any time.

Features

Stainless steel suction and discharge manifolds AISI 304.
Stain chassis finished in black epoxy coating.
WRAS approved nickel plated brass ball valves on each pump providing individual isolation if necessary.
WRAS check valves on each pump.
Anti-vibration mounts as standard.
8- 12- 24 lt. expansion vessel depending on the pumps size (WRAS Approved).
Control panel with MCB's.
FVC (Free volt contacts) for the external control of the alarms.
Full documentation provided with each booster set.

ESPA ESD advantages

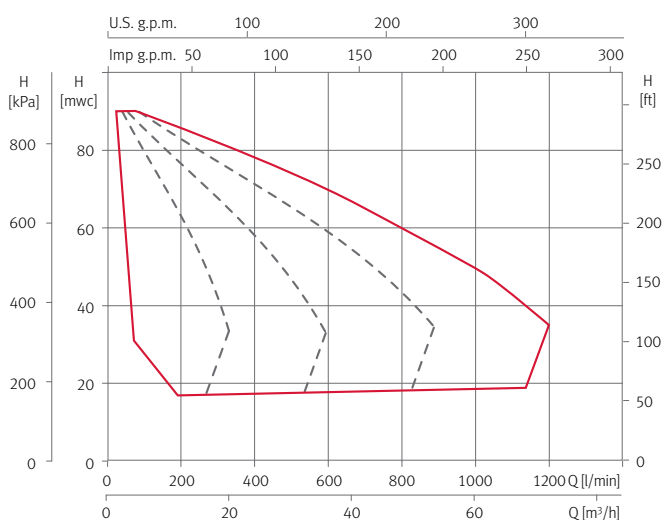
An innovative system that can be used with a variation of pump types including multistage vertical or horizontal pumps. Saves energy up to 50% silent running compact and can extend the life cycle of the pump.



The ESPA Engineering Application Service is ready to design and manufacture customised solutions for any required application, modifying the standard range increasing the flow, the head or changing operation mode.

ADVANCED SOLUTIONS IN
AUTOMATIC BOOSTER SETS

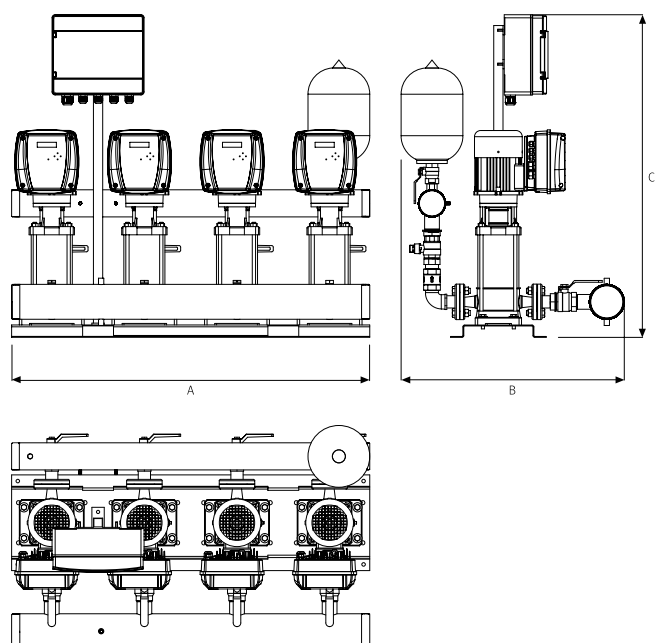
Campo de aplicación CKE4 a 2900 rpm



CKE4 MULTI VS Variable speed pressurization



CKE4 MULTI VS



Technical features, dimensions and weights

Single pump sets Single-phase	Pump model	Units	P2 [kW]	Inverter	Units	Pump		Ø Valves		Ø Manifold		Dimensions			Weight	Code
						Suc.	disch.	Suct.	Disch.	Suc.	Disch.	A	B	C		
CKE4 Multi VS4 05F07 UKASP	Multi VS4 05F07	4	0.75	T2	4	25	25	1"	1"	4"	4"	1160	703	1046	210	192000
CKE4 Multi VS4 07F11 UKASP	Multi VS4 07F11	4	1.1	T2	4	25	25	1"	1"	4"	4"	1160	703	1136	259	192001
CKE4 Multi VS4 10F15 UKASP	Multi VS4 10F15	4	1.5	T2	4	25	25	1"	1"	4"	4"	1160	703	1136	266	192002
CKE4 Multi VS4 14F22 UKASP	Multi VS4 14F22	4	2.2	T2	4	25	25	1"	1"	4"	4"	1160	703	1136	287	191003
CKE4 Multi VS4 20F30 UKASP	Multi VS4 02F03	4	3	T3	4	25	25	1"	1"	4"	4"	1160	703	1136	371	192003
CKE4 Multi VS6 04F07 UKASP	Multi VS6 03F07	4	0.75	T2	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1046	217	192010
CKE4 Multi VS6 05F11 UKASP	Multi VS6 05F11	4	1.1	T2	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	224	192011
CKE4 Multi VS6 07F15 UKASP	Multi VS6 07F15	4	1.5	T2	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	266	192012
CKE4 Multi VS6 10F22 UKASP	Multi VS6 10F22	4	2.2	T3	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	287	192013
CKE4 Multi VS6 14F30 UKASP	Multi VS6 14F30	4	3	T3	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	371	192014
CKE4 Multi VS6 18F40 UKASP	Multi VS6 18F40	4	4	T4	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	434	192015
CKE4 Multi VS6 22F55 UKASP	Multi VS6 22F55	4	5.5	T4	4	32	32	1 1/4"	1 1/4"	4"	4"	1160	703	1136	579	192016
CKE4 Multi VS10 03F11 UKASP	Multi VS10 03F11	4	1.1	T2	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1046	273	192020
CKE4 Multi VS10 04F15 UKASP	Multi VS10 04F15	4	1.5	T2	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1046	315	192021
CKE4 Multi VS10 06F22 UKASP	Multi VS10 06F22	4	2.2	T3	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1046	343	192022
CKE4 Multi VS10 08F30 UKASP	Multi VS10 08F30	4	3	T3	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1136	413	192023
CKE4 Multi VS10 09F40 UKASP	Multi VS10 09F40	4	4	T4	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1136	455	192024
CKE4 Multi VS10 11F40 UKASP	Multi VS10 11F40	4	4	T4	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1136	469	192025
CKE4 Multi VS10 15F55 UKASP	Multi VS10 15F55	4	5.5	T4	4	40	40	1 1/2"	1 1/2"	4"	4"	1160	703	1136	784	192026
CKE4 Multi VS15 02F22 UKASP	Multi VS15 02F22	4	2.2	T3	4	50	50	2"	2"	6"	6"	1160	703	1188	329	192030
CKE4 Multi VS15 04F30 UKASP	Multi VS15 03F30	4	3	T3	4	50	50	2"	2"	6"	6"	1160	703	1188	392	192031
CKE4 Multi VS15 04F40 UKASP	Multi VS15 04F40	4	4	T4	4	50	50		2"	6"	6"	1160	703	1188	434	192032
CKE4 Multi VS15 06F55 UKASP	Multi VS15 06F55	4	5.5	T4	4	50	50	2"	2"	6"	6"	1160	703	1188	714	192033
CKE4 Multi VS25 01F22 UKASP	Multi VS25 01F22	4	2.2	T3	4	65	65	2 1/2"	2 1/2"	6"	6"	1230	800	1089	490	192040
CKE4 Multi VS25 02F40 UKASP	Multi VS25 02F40	4	4	T4	4	65	65	2 1/2"	2 1/2"	6"	6"	1160	800	1089	595	192041
CKE4 Multi VS25 04F55 UKASP	Multi VS25 03F55	4	5.5	T4	4	65	65	2 1/2"	2 1/2"	6"	6"	1160	800	1089	798	192042

The dimensions stated in the table above are for guidance purposes only. Please contact ESPA UK prior to order to confirm these dimensions.

ESPA is constantly improving its products and services; therefore it reserves the right to update or modify specifications at any time without prior notice.

Booster sets **Pressurisation**



High specification variable speed

Applications

ESPA Inverter booster sets are designed to provide an efficient solution to water boosting applications where existing supplies are unreliable or insufficient to meet the demands of commerce and industry.

ESPA variable speed booster sets embrace the best in modern control techniques, whilst holding true the traditional principles of quality engineering.

Due to the compact design, ESPA booster sets offer a small footprint in relation to performance. Installation is straightforward, with site work usually limited to connecting site pipe work and the provision of a suitable electrical supply.

Features

Stainless steel suction and discharge manifolds AISI 304 – Copper (optional steel) finished in black epoxy coating. WRAS approved nickel-plated brass ball valves on each pump providing individual isolation if necessary. Anti-vibration mounts as standard. Steel enclosed panel IP 54, incorporating the following features:
One or more Danfos inverter(s) (depending on control choice).
Door interlocked isolator.
Pump controller via transducer.
Manual/Off/Auto parameter for each pump.
Duty pump alternation by software control.

Auxiliary input for low water via probe in suction manifold.
Volt-free contacts for BMS output.
Full documentation is provided with each booster set.

ESPA Control Panel advantages

Major feature – Every time power to the booster set is interrupted, on resumption of power the controller cycles through a “filling system” programme. This eliminates pipework failure due to hydraulic shock.
Can control up to six frequency-controlled pumps directly via inverter “data bus”.

Two jockey pumps can be controlled in variable speed or fixed speed operation. On a large pump system – has a “standard anti-cavitation programme” to prevent damage occurring to pumps on large multi-pump sets.
Pump alternation can be time of day/ week OR on hours run. Total flexibility. Password protection.

Please ask our sales team for a quotation or e-mail on: boosters@espa.co.uk



P.O.A. Please contact ESPA for price and availability.

Other Package booster sets

Fixed speed booster sets

Transducer-controlled booster series. Fully automatic units for commercial and domestic applications.

Espe fixed-speed boosters can be built to customer specifications providing automatic control of multiple-phase, single-phase and three-phase pumps, in either Duty/Standby, Duty/Assist and Duty/Assist/Standby. Low cost fixed speed booster sets available on request.

