

VIBRA-SOLUTION



Concrete Vibra-Solution

Complete solutions for vibrating concrete

 **italvibras**
g.silingardi

Concrete Vibra-Solution





Complete solutions for vibrating concrete

Italvibras G. Silingardi S.p.A. is the leading company when it comes to producing electric vibrators for industrial use and for compacting concrete. Since 1959, the company has been true to its policy and has opted for specialization as industrial philosophy, the aim being to design and build efficient and reliable electric vibrators. Concrete Vibra-Solution is a complete system that mechanically vibrates the concrete used for industrial prefabrication purposes in an optimum way. It represents the natural development of the numberless installations produced by Italvibras throughout more than 40 years

the quality of the individual components forming the systems with the technicians' skills and ever-available assistance on the building site. Italvibras possesses the technology and experience to offer manufacturers of precast structural elements, cement layers, building companies, planning enterprises, makers of building forms, machines and molds, the very best solutions – even complete "turn-key" systems – for compacting concrete.



Form vibrating

Right from the very first models designed for the building trade, Italtvibras has paid particular attention to the field of large civil engineering and prefabrication works.

The company's skills have proved unbeatable in a context where numberless factors are utterly variable: depending on the characteristics of the form and the type of concrete used, each item requires a specific frequency / centrifugal force to compact the concrete.

This means that use of a wide range of frequencies / centrifugal forces represents the ideal condition when it comes to compacting items made of concrete.

This is the principle at the basis of Concrete Vibra-Solution.



The advantages of Concrete Vibra-Solution

- The metal form is completely filled in an optimum way.
- The components used to make the concrete do not become segregated.
- Smooth outer surfaces, with microporosity reduced to the minimum.
- Elimination of the "resonance" effect and noise levels kept within the limits established by law.

The entire system is handled by a PLC (VIBRALOGIC), with remote control and monitoring functions (VIBRATEL).

The process is monitored on the building site manager's PC (VIBRAGEST), with advancement and check-control functions.

- The system is designed by skilled and experienced technicians.
- Building site personnel can be trained and assistance is provided throughout the process.

The system can be supplied on a "turn-key" basis.

Limited acoustic pollution

Concrete Vibra-Solution completely does away with the problems that arise when compressed air-powered vibrating systems are used. In these cases, the noise levels often oblige the workers to wear personal protective equipment, while it is sometimes even necessary to limit the number of hours on the job in relation to the contractual daily work shift.

Concrete Vibra-Solution ensures that the workers are constantly safeguarded against the risks deriving from exposure to noise during work.





The Italtibras way: Concrete Vibra-Solution

Concrete Vibra-Solution is the result of years of research and experimentation conducted by Italtibras, also as part of the specific "Technological Innovation project" endorsed by the Ministry for Industry, Commerce and Handicrafts of the Italian State, concerning "Innovation of the products and relative constructional processes for new vibrating systems".

The heart of the system includes the ITV-VR-S90 and ITVAF-S90 Series electric vibrators, the VIBRAVAR electronic vibration frequency converters, the VIBRALOGIC logic and monitoring PLC, the VIBRATEL remote control, the VIBRAGEST system managing software and the VIBRALASER laser monitoring system for filling the forms.



How to choose the right system

The choice of a high frequency vibration system is conditioned by various factors that must be carefully analyzed by the customer along with the Italvibras technicians. The evaluation parameters must consider the type and number of vibrators required to vibrate the article in question, the type of control to which the vibration action must be subjected, the level of automation required in the system and the entity of the investment as a whole.

The number of versions available within the actual Concrete Vibra-Solution system can also be integrated with each other. It is therefore of fundamental importance to evaluate these parameters together so as to identify the best possible solution for the users' needs.

Customized solutions

Customized solutions

Italvibras proposes different types of frequency variation systems:

- **electronically controlled systems;**
- **electromechanically controlled systems;**
- **electromechanically controlled systems on MULTIVAR mobile trolleys.**

Italvibras is able to provide complete "turn-key" systems through to the single VIBRAVAR frequency converter with relative accessories, which can be installed in a system created by the actual user.

All the components and systems supplied conform to the dictates established by the most recent Italian and European Union standards and laws in force.

THE SOLUTIONS

Electronically controlled systems

These are highly technological systems able to handle 6 to 72 electric vibrators, depending on the installation. A further extension allows the system to handle up to 864 electric vibrators.

Housed in a special panel, the electronically controlled system is equipped with an interactive terminal for compiling, filling and displaying the vibration formulas.

The systems can also be remote controlled.

A characterizing feature of the system is VIBRAVAR, the electronic vibration frequency converter and VIBRALOGIC, the PLC for computerized management of the vibration function. It can also be equipped with the VIBRATEL remote control, the VIBRALASER reflecting laser system and the VIBRAGEST administration software.



CVF electromechanically controlled system

These feature a powering panel containing the VIBRAVAR electronic vibration frequency converter and various sub-panels to control the vibrators and their vibrating frequency. The system's powering panel can handle up to 10 sub-panels, depending on the type. Each sub-panel, available with either a socket or core-hitch type of output for connecting to the vibrator, controls from 4 to 10 electric vibrators. Each sub-panel has 7 fixed vibration frequencies and 1 variable one.

The system features CVF, the most simple fixed electromechanical control panel which allows the user to choose a "ready-to-use" product for powering up to 12 electric vibrators. The basic version with the VIBRAVAR converter, can be fitted with accessories for protecting and manoeuvring the electric vibrators themselves.



MULTIVAR electromechanically controlled systems

MULTIVAR is the ideal means for replacing conventional electromechanical converters with fixed frequencies, with a system that can vary the frequency / centrifugal force.

It's also an optimum choice for both manufacturers of small concrete items and precasting enterprises when they need to produce specific items that cannot be obtained with normal forms.

MULTIVAR comes complete with control and protection equipment, so it can therefore be connected straight to the electric vibrators.





**ELECTRIC
PANEL**



From 6 to 864
electric vibrators



VIBRAVAR



VIBRALOGIC



VIBRATEL*



VIBRALASER*



VIBRAGEST*



**TELE-
ASSISTANCE***

* Optional



CFU



From 1 to 12
electric vibrators



VIBRAVAR



**Sub-panel +
electric vibrator**



**Sub-panel +
electric vibrator**



**Sub-panel +
electric vibrator**



MULTIVAR



VIBRAVAR



Electric vibrators



Electric vibrators



Electric vibrators

From 1 to 8
electric vibrators

ELECTRIC VIBRATORS

Electric vibrators with frequency variation



Italvibras produces 2 series of electric vibrators with frequency variation which can be applied to systems and machines in the precasting industry:

- **ITV-VR-S90 Series, with variable frequency;**
- **ITVAF-S90 Series, with fixed frequency.**

The ITV-VR-S90 series electric vibrators are able to provide a centrifugal force of up to 88 kN at a frequency varying from 0 to 6.000 rpm. The ITVAF-S90 series electric vibrators with fixed vibration (6000 or 9000 rpm) provide a vibrating energy of up to 27,5 kN. Both are available with either the fixed or cradle connection.

Technical specifications

Power supply:

threephase from 24V to 690V at the various frequencies, depending on the type and series. It is advisable to use the VIBRAVAR, MULTIVAR or the CFV variable high frequency power suppliers to power the electric vibrators.

Conformity to the European Directives:

Low Voltage 72/23/EC;

Electromagnetic compatibility 89/336/EC.

Reference standards:

EN 60034.

Operation:

continuous service (S1) at the maximum declared centrifugal force and electric power values.

Centrifugal force:

adjustable by varying the eccentric weights from 0 to the maximum value, i.e. 9,000 kg.

Mechanical protection:

IP66 according to IEC 529, EN 60529;

IK08 protection against impact.

Insulation class:

class F (155°C).

Tropicalizing:

standard supply for all electric vibrators.

Ambient temperature:

to operate correctly, from -30°C to +40°C.

Thermal protection of the electric vibrator:

obtained with P.T.C. 130°C thermistor type thermal detectors installed as part of the standard assembly from size AF70 onwards. Thermistors with different temperatures and anti-condensation heaters are also available on request for particular uses.

Fixing:

the electric vibrators can be fixed in all positions with no limitations at all. Two different types of connection are available for the ITV-VR-S90 and ITVAF-S90 series: fixed connection, where the electric vibrators are connected to the structure by bolts through fixing holes and the RS cradle connection, where the electric vibrators are connected to the structure with the standardized cradle type RS2.

Lubrication:

all the electric vibrators are correctly lubricated in our factory and need no further lubrication when used. Special grease for high-speed operation is used. Periodic re-lubrication is recommended by means of special grease nipples. The excess grease is discharged into the weight compartment by means of the differentiated labyrinth system.



Terminal box:

generously sized to make the electrical connections easier. Special shaped wire clamps fix the power cable in place. Electric motor: asynchronous threephase type. The winding of sizes 30 and AF33 is insulated by the vacuum-encapsulation process and by the "drop-by-drop" system for the other sizes.

Casing and bearing flange:

made of special spheroidal cast iron in a special design to optimize the seal and efficiency at high speeds.

Bearings:

a special shape, exclusively designed and made for Italvibras and able to bear strong loads at high speeds.

Drive shaft:

in treated steel alloy (austempering) able to withstand high stress.

Eccentric weights:

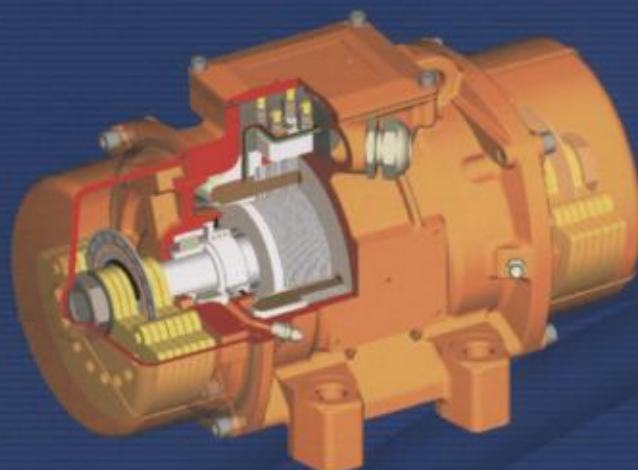
specially shaped lamellar type that can be easily adjusted.

Weight covers:

made of aluminium alloy treated with rust inhibitor. They are perfectly dustproof, watertight and offer optimum shock resistance in all conditions of use and work environments. The weight covers of the S02 series electric vibrators are made of AISI 304 stainless steel.

Coating cycle:

electrostatic surface treatment based on epoxypolyester powders -stove-polymerized at 200°C and subjected to the saline mist test for 500 hours.



ELECTRIC VIBRATORS

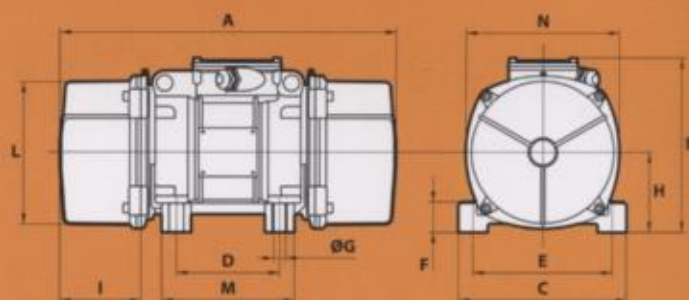


Fig. A



ITV-VR fixed connection

Code	Type	Size	CSA	Vibration range (vibr./min.)	Centrifugal force (kg)	Centrifugal force (kN)	Weight (kg)
600355	ITV-VR/600	10	-	4500÷6000	610	5.98	8.0
600356	ITV-VR/1000-BSH	AF30	-	4500÷6000	1022	9.70	18
600357	ITV-VR/1200-BSH	AF30	-	4500÷6000	1200	11.3	18
600246	ITV-VR/1210	AF33	•	0÷6000	1475	14.5	28
600247	ITV-VR/2010	AF33	•	0÷6000	2000	19.6	31
600248	ITV-VR/2510	AF50	-	0÷6000	2500	24.5	41
600249	ITV-VR/2510-V*	AF50	-	4500÷6000	2500	24.5	41
600208	ITV-VR/3300*	68	-	4500÷6000	3300	32.3	74
600212	ITV-VR/5000	AF70	-	0÷4300	5300	52.0	106
600225	ITV-VR/9000-590	95	-	0÷3600	8970	88.0	210

* Special ventilated type for heavy duty service



ITV-VR RS cradle connection

Code	Type	Size	CSA	Vibration range (vibr./min.)	Centrifugal force (kg)	Centrifugal force (kN)	Weight (kg)
600358	ITV-VR/600-RS1	AF10	-	4500÷6000	610	5.98	8.0
600359	ITV-VR/1000-RS-BSH	AF30	-	4500÷6000	1022	9.70	18
600360	ITV-VR/1200-RS-BSH	AF30	-	4500÷6000	1200	11.3	18
600244	ITV-VR/1210-RS	AF33	•	0÷6000	1475	14.5	25
600245	ITV-VR/2010-RS	AF33	•	0÷6000	2000	19.6	28

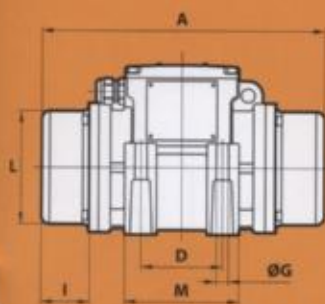


Fig. AH

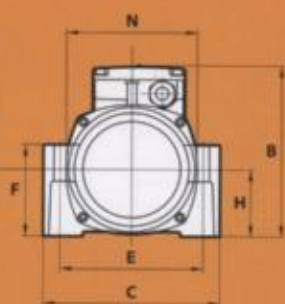
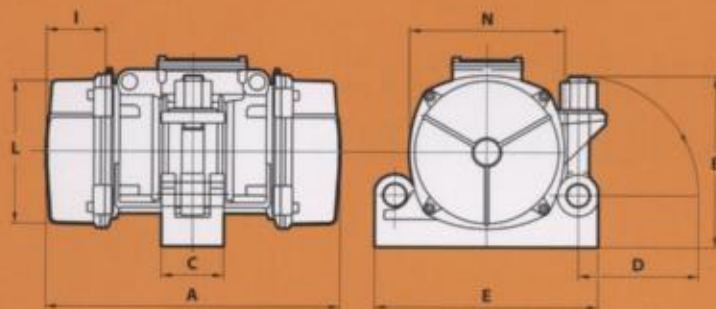


Fig. D



Max input power max (W)	Max input current (A) 100 Hz		Ratio Is / Ir	Fig.	A	B	C	D	E	Holes		F	H	I	L	M	N
	42V	400V								øG	N						
500	9.5	1.0	4.50	A	255	179	152	90	125	13	4	28	73	54	124	128	141
1000	21	2.3	6.06	AH	310	186	190	90	154	13	4	100	73	54	124	125	141
1000	21	2.3	6.06	AH	310	186	190	90	154	13	4	100	73	54	124	125	141
1200	21	2.3	4.48	A	339	214	215	100	180	17	4	47	92.5	73.5	164	140	179
1700	27	2.9	5.00	A	355	214	215	100	180	17	4	47	92.5	81.5	164	140	179
2200	35	3.9	6.15	A	430	230	230	140	190	17	4	49	104	87.5	186	180	200
2200	35	3.9	6.15	A	465	230	230	140	190	17	4	49	104	105	240	180	248
4000	-	7.2	5.10	A	507	275	315	155	255	23.5	4	122	115	147	265	215	275
5000	-	8.0	5.30	A	558	305	310	155	255	25	4	90	130	108	233	210	248
10000	-	18	4.39	A	630	395	392	200	320	28	4	100	192	135	350	270	375

Max input power max (W)	Max input current (A) 100 Hz		Ratio Is / Ir	Fig.	A	B	C	D	E	Holes		F	H	I	L	M	N
	42V	400V								øG	N						
500	9.5	1.0	4.50	D	255	140	97	97	180	-	-	-	-	54	124	128	141
1000	21	2.3	6.06	D	310	186	83	140	240	-	-	-	-	54	124	125	141
1000	21	2.3	6.06	D	310	186	83	140	240	-	-	-	-	54	124	125	141
1200	21	2.3	4.48	D	339	189	83	140	240	-	-	-	-	73.5	164	-	179
1700	27	2.9	5.00	D	355	189	83	140	240	-	-	-	-	81.5	164	-	179

ELECTRIC VIBRATORS

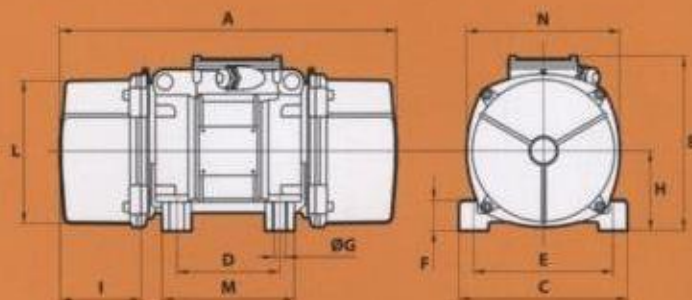


Fig. A



ITUAF
fixed connection

Code	Type	Size	CSA	Vibration range (vibr./min.)	Centrifugal force (kg) (kN)		Weight (kg)
603050	ITVAF 6/600-S02	10	-	6000 - 200Hz	610	5.98	8.0
603044	ITVAF 6/1000-S02-BSH	AF30	-	6000 - 200Hz	1022	9.70	18
603043	ITVAF 6/1200-S02-BSH	AF30	-	6000 - 200Hz	1200	11.3	18
603035	ITVAF 6/1220-S90	AF33	-	6000 - 200Hz	1157	11.3	27
603036	ITVAF 6/1510-S90	AF33	-	6000 - 200Hz	1484	14.6	29
603037	ITVAF 6/2010-S90*	AF50	-	6000 - 200Hz	1978	19.4	40
603010	ITVAF 6/3300*	68	-	6000 - 100Hz	2800	27.5	74
604035	ITVAF 9/1110-S90	AF33	-	9000 - 150Hz	1113	10.9	26
604036	ITVAF 9/1510-S90	AF33	-	9000 - 150Hz	1484	14.6	28

* Can only be supplied in the 250 V-100 Hz ventilated type with IP 44 protection



ITUAF RS
cradle connection

Code	Type	Size	CSA	Vibration range (vibr./min.)	Centrifugal force (kg) (kN)		Weight (kg)
603049	ITVAF 6/600-RS1-S02	AF10	-	6000 - 200Hz	610	5.98	8.0
603047	ITVAF 6/1000-RS-S02-BSH	AF30	-	6000 - 200Hz	1022	9.70	18
603048	ITVAF 6/1200-RS-S02-BSH	AF30	-	6000 - 200Hz	1200	11.3	18
603038	ITVAF 6/1220-RS-S90	AF33	-	6000 - 200Hz	1157	11.3	25
603039	ITVAF 6/1510-RS-S90	AF33	-	6000 - 200Hz	1484	14.6	27
604038	ITVAF 9/1110-RS-S90	AF33	-	9000 - 150Hz	1113	10.9	24
604039	ITVAF 9/1510-RS-S90	AF33	-	9000 - 150Hz	1484	14.6	26

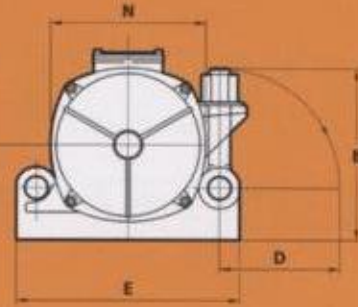
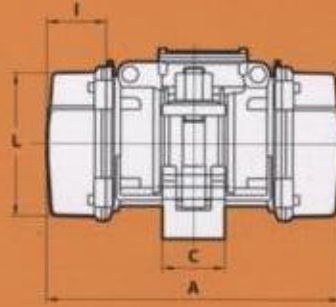
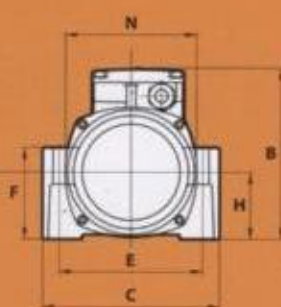
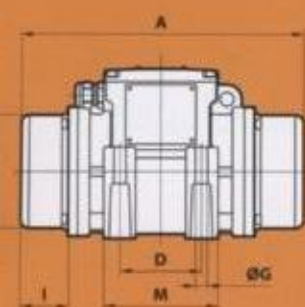


Fig. AH

Fig. D

Max input power max (W)	Max input current (A) 100 Hz		Ratio Is / Ir	Fig.	A	B	C	D	E	Holes		F	H	I	L	M	N
	42V	250V								øG	N						
500	9.5	1.6	4.50	A	255	179	152	90	125	13	4	28	73	54	124	128	141
1000	20	3.3	6.06	AH	310	186	190	90	154	13	4	100	73	54	124	125	141
1000	20	3.3	6.06	AH	310	186	190	90	154	13	4	100	73	54	124	125	141
1200	23	-	6.04	A	339	214	215	100	180	17	4	47	92.5	73.5	164	140	179
1700	29	4.9	7.10	A	355	214	215	100	180	17	4	47	92.5	81.5	164	140	179
2000	35	5.9	8.00	A	430	230	230	140	190	17	4	49	104	87.5	186	180	200
4000	-	11	5.10	A	507	275	315	155	255	23.5	4	122	115	147	265	215	275
1150	18	-	8.52	A	339	214	215	100	180	17	4	47	92.5	73.5	164	140	179
1600	24	4.0	10.4	A	355	214	215	100	180	17	4	47	92.5	81.5	164	140	179

Max input power max (W)	Max input current (A) 100 Hz		Ratio Is / Ir	Fig.	A	B	C	D	E	Holes		F	H	I	L	M	N
	42V	250V								øG	N						
500	9.5	1.6	4.50	D	255	140	97	97	180	-	-	-	-	54	124	-	141
1000	20	3.3	6.06	D	310	189	83	140	240	-	-	-	-	54	124	-	141
1000	20	3.3	6.06	D	310	189	83	140	240	-	-	-	-	54	124	-	141
1200	23	-	6.04	D	339	189	83	140	240	-	-	-	-	73.5	164	-	179
1700	29	4.9	7.10	D	355	189	83	140	240	-	-	-	-	81.5	164	-	179
1150	18	-	8.52	D	339	189	83	140	240	-	-	-	-	73.5	164	-	179
1600	24	4.0	10.4	D	355	189	83	140	240	-	-	-	-	81.5	164	-	179

ELECTRONICALLY CONTROLLED SYSTEM

These are systems of the most avant-garde type.

The most complete version includes:

- the VIBRATEL remote control to operate the electric vibrators and vary the vibration frequency;
- the VIBRALOGIC alphanumerical terminal for entering, filing and displaying the vibration formulas;
- the control console on the electric panel, that allows the system to operate even if the remote control is faulty or absent;

The electronic control system can be equipped with the new VIBRALASER System which, thanks to a reflecting laser, allows a completely automatic system to be created without the need for an operator.

VIBRALOGIC teleassistance for electronically controlled systems.

Maintenance engineers can get in touch with the Italvibras technicians thanks to the teleassistance system, controlled through a GSM Dual Band modem installed inside VIBRALOGIC.

If the system operates in a faulty way or there are programming difficulties, the Italvibras technicians are able to check the functional parameters and operating conditions in real time and to change/upgrade these values in order to ensure that the system functions properly.

Choice of the main panel for electronically controlled systems

The criterion used to choose electronically controlled systems and the type of main panel required is mainly based on the number of start-ups, i.e. on the number of electric vibrators installed in the system.

Number of start-ups required	Type of main panel	Code
From 8 to 24 start-ups	Main panel type A/PLC	543000A
From 25 to 60 start-ups	Main panel type B/PLC	543001A
From 61 to 100 start-ups	Main panel type C/PLC	543002A
From 101 to 132 start-ups	Main panel type D/PLC	543003A





ELECTRIC PANEL



VIBRAVAR

Electronic vibration frequency converter. Allows the frequency with which the electric vibrators are powered to be continuously varied from 0 Hz to the maximum value tolerated by the actual electric vibrators themselves.



VIBRALOGIC

PLC for computerized management of all the functions in the system, also in the absence of the remote control. It can handle up to 854 electric vibrators.



VIBRATEL*

Remote control conforming to Directive R&TTE N° 99/5/EC. Allows the system to be operated and monitored by remote control.



VIBRALASER*

The reflecting laser system used to create a fully automatic system without the need for operators.



VIBRAGEST*

Software that administers, memorizes, displays and prints the vibration parameters effectively used in the forms.



TELEASSISTANCE*

Thanks to teleassistance, maintenance engineers can get in touch with the Italtibras technicians in order to check/change/upgrade the functional parameters and operating conditions of the system.

* Optional.

The vibrating frequency regulating panels

CFV panels are fixed devices for regulating the vibration frequency by means of the VIBRAVAR inside. Simple use, easy to maneuver, compact and safe: these are the main features of the CFV panel. CFV is the technological evolution of the conventional electromechanical frequency converter, the advantage being that it provides variable frequency in a linear way. On specific request, it can also be fitted with controls, protections and operating components.

Technical specifications

CFV can be used to power the following electric vibrator models:

Type of starting	Electric vibrators type	CFV-037P P 3,7 kW	CFV-056P P 5,5 kW	CFV-075P P 7,5 kW	CFV-112P P 11 kW
One at time	ITV-VR/600 • ITV-VR/600-RS1-S02	8	13	16	24
	ITV-VR/1000-BSH • ITV-VR/1000-RS-BSH	1	4	6	10
	ITV-VR/1200-BSH • ITV-VR/1200-RS-BSH	1	4	6	10
	ITV-VR/1210 • ITV-VR/1210-RS	2	5	7	10
	ITV-VR/2010 • ITV-VR/2010-RS	0	3	4	8
	ITV-VR/2510 • ITV-VR/2510-V	0	0	2	4
	ITV-VR/3300	0	0	0	1
Two at time	ITV-VR/600 • ITV-VR/600-RS1-S02	6	12	16	24
	ITV-VR/1000-BSH • ITV-VR/1000-RS-BSH	0	0	2	6
	ITV-VR/1200-BSH • ITV-VR/1200-RS-BSH	0	0	2	6
	ITV-VR/1210 • ITV-VR/1210-RS	0	2	4	8
	ITV-VR/2010 • ITV-VR/2010-RS	0	0	0	4
One at time	ITVAF 6/600-S02 • ITVAF 6/600-RS1-S02	8	13	16	24
	ITVAF 6/1000-S02-BSH • ITVAF 6/1000-RS-S02-BSH	1	4	6	11
	ITVAF 6/1200-S02-BSH • ITVAF 6/1200-RS-S02-BSH	1	4	6	11
	ITVAF 6/1220-S90 • ITVAF 6/1220-RS-S90	1	3	5	9
	ITVAF 6/1510-S90 • ITVAF 6/1510-RS-S90	0	1	2	5
	ITVAF 6/2010-S90	0	0	0	2
	ITVAF 6/3300	0	0	0	1
	ITVAF 9/1110-S90 • ITVAF 9/1110-RS-S90	0	3	5	11
	ITVAF 9/1510-S90 • ITVAF 9/1510-RS-S90	0	0	1	5
Two at time	ITVAF 6/600-S02 • ITVAF 6/600-RS1-S02	6	12	16	24
	ITVAF 6/1000-S02-BSH • ITVAF 6/1000-RS-S02-BSH	0	0	2	6
	ITVAF 6/1200-S02-BSH • ITVAF 6/1200-RS-S02-BSH	0	0	2	6
	ITVAF 6/1220-S90 • ITVAF 6/1220-RS-S90	0	0	0	4
	ITVAF 9/1110-S90 • ITVAF 9/1110-RS-S90	0	0	0	2



Optionals:

- electromechanical operating and protecting components of a number equal to that of the vibrators (automatic switches and operation disconnectors);
- 3P+G output sockets for connecting the electric vibrators.

Code	Type	Input				Output			
		Max. power KVA	Max. current A 400V	Voltage V	Frequency Hz	Max. power KVA	Max. current A	Voltage V	Frequency Hz
543049A	CFV 037P 42V	8.0	10.0	400*	50**	6.7	80.0	42	0-200
543049B	CFV 037P 400V	8.0	10.0	400*	50**	6.7	8.4	400	0-200
543050A	CFV 056P 42V	11.3	13.6	400*	50**	10.6	126	42	0-200
543050B	CFV 056P 400V	11.3	13.6	400*	50**	10.6	13.3	400	0-200
543051A	CFV 075P 42V	13.6	16.4	400*	50**	12.8	153	42	0-200
543051B	CFV 075P 400V	13.6	16.4	400*	50**	12.8	16.1	400	0-200
543052A	CFV 112P 42V	20.4	24.5	400*	50**	19.1	228	42	0-200
543052B	CFV 112P 400V	20.4	24.5	400*	50**	19.1	24.0	400	0-200

* the supply voltage can vary from 380 to 480 V.

** the supply frequency can vary from 48 to 62 Hz.

Conformity to the European Directives:

Low Voltage 73/23/EC, Electromagnetic compatibility 89/336/EC.

CFV comprises:

- electric panel with front door measuring 1350 (height) x 700 (width) x 350 (depth) mm;
- manual threepole main door-locking knife switch with fuses;
- VIBRAVAR inverter with EMC filter;
- keyboard on the panel front for controlling and programming purposes;
- 400V-42V transformer (only in the 42V models).

MULTIVAR

The mobile vibration frequency regulator

The MULTIVAR mobile high variable frequency actuators (Italvibras patent N° M0980000021) meet the increasing demands from building sites where reinforced concrete is precast, for equipment able to facilitate the task.

MULTIVAR can power up to 8 electric vibrators at the same time with 42V or 400V ratings at variable frequencies.

Simple to use, easy to manoeuvre, compact and safe: these are the main features of the MULTIVAR frequency regulator.

MULTIVAR is the ideal substitute for the conventional electromechanical frequency converter, the advantages being linear frequency variation with full controls, protection and operating components, ready to power electric vibrators.

Technical specifications

Multivar can be used to power the following electric vibrator models:

Type of starting	Electric vibrators types	MV-4-056P P 5,5 kW	MV-4-075P P 7,5 kW	MV-6-075P P 7,5 kW	MV-6-112P P 11 kW	MV-8-112P P 11 kW
One at time	ITV-VR/600 • ITV-VR/600-RS1-S02	4	4	6	6	8
	ITV-VR/1000-BSH • ITV-VR/1000-RS-BSH	4	4	6	6	8
	ITV-VR/1200-BSH • ITV-VR/1200-RS-BSH	4	4	6	6	8
	ITV-VR/1210 • ITV-VR/1210-RS	4	4	6	6	8
	ITV-VR/2010 • ITV-VR/2010-RS	3	4	4	6	8
	ITV-VR/2510 • ITV-VR/2510-V	0	2	2	4	4
	ITV-VR/3300	0	0	0	1	1
Two at time	ITV-VR/600 • ITV-VR/600-RS1-S02	4	4	6	6	8
	ITV-VR/1000-BSH • ITV-VR/1000-RS-BSH	0	2	2	6	6
	ITV-VR/1200-BSH • ITV-VR/1200-RS-BSH	0	2	2	6	6
	ITV-VR/1210 • ITV-VR/1210-RS	2	4	4	6	8
	ITV-VR/2010 • ITV-VR/2010-RS	0	0	0	4	4
One at time	ITVAF 6/600-S02 • ITVAF 6/600-RS1-S02	4	4	6	6	8
	ITVAF 6/1000-S02-BSH • ITVAF 6/1000-RS-S02-BSH	4	4	6	6	8
	ITVAF 6/1200-S02-BSH • ITVAF 6/1200-RS-S02-BSH	4	4	6	6	8
	ITVAF 6/1220-S90 • ITVAF 6/1220-RS-S90	3	4	5	6	8
	ITVAF 6/1510-S90 • ITVAF 6/1510-RS-S90	1	2	2	5	5
	ITVAF 6/2010-S90	0	0	0	2	2
	ITVAF 6/3300	0	0	0	1	1
	ITVAF 9/1110-S90 • ITVAF 9/1110-RS-S90	3	4	5	6	8
	ITVAF 9/1510-S90 • ITVAF 9/1510-RS-S90	0	1	1	5	5
Two at time	ITVAF 6/600-S02 • ITVAF 6/600-RS1-S02	4	4	6	6	8
	ITVAF 6/1000-S02-BSH • ITVAF 6/1000-RS-S02-BSH	0	2	2	6	6
	ITVAF 6/1200-S02-BSH • ITVAF 6/1200-RS-S02-BSH	0	2	2	6	6
	ITVAF 6/1220-S90 • ITVAF 6/1220-RS-S90	0	0	0	4	4
	ITVAF 9/1110-S90 • ITVAF 9/1110-RS-S90	0	0	0	2	2



Code	Type	Input				Output			Dimensions			
		Max. power KVA	Max. current A 400V	Voltage V	Frequency Hz	N. outputs	Voltage V	Frequency	Height mm	Width mm	Length mm	Weight kg
543036A	MV-4-056P 42V	11.3	13.6	400*	50**	4	42	0-200	1000	650	1200	130
543036B	MV-4-056P 400V	11.3	13.6	400*	50**	4	400	0-200	1000	650	1200	195
543037A	MV-4-075P 42V	13.6	16.4	400*	50**	4	42	0-200	1000	650	1200	135
543037B	MV-4-075P 400V	13.6	16.4	400*	50**	4	400	0-200	1000	650	1200	205
543038A	MV-6-075P 42V	13.6	16.4	400*	50**	6	42	0-200	1000	650	1200	145
543038B	MV-6-075P 400V	13.6	16.4	400*	50**	6	400	0-200	1000	650	1200	215
543039A	MV-6-112P 42V	20.4	24.5	400*	50**	6	42	0-200	1000	650	1200	150
543039B	MV-6-112P 400V	20.4	24.5	400*	50**	6	400	0-200	1000	650	1200	250
543053A	MV-8-112P 42V	20.4	24.5	400*	50**	8	42	0-200	1000	650	1200	150
543053B	MV-8-112P 400V	20.4	24.5	400*	50**	8	400	0-200	1000	650	1200	250

* the supply voltage can vary from 380 to 480 V.
 ** the supply frequency can vary from 48 to 62 Hz.

Conformity to the European Directives

Low Voltage 73/23/EC, Electromagnetic compatibility 89/336/EC.

MULTIVAR comprises:

- a wheel-mounted structure;
- 3P+G power flex and plug for connecting to the 400V 50Hz electricity main;
- threepole main disconnector;
- VIBRAVAR inverter with EMC filter;
- control console with programming and operating keyboard;
- 400V-42V transformer (only in 42V models);
- electromechanical operating and protecting components (remote control switches, thermal protections and fuses);
- 3P+G output sockets for connecting the electric vibrators.

VIBRAVAR

The electronic vibration frequency regulators

Designed for exclusive use with Italvibras electric vibrators, VIBRAVAR fully resolves the primary problem of vibration frequency variation in production processes where vibrating machines or systems are used. VIBRAVAR can continuously vary the powering frequency of the electric vibrators from 0 Hz to the maximum value tolerated by the actual vibrator itself.

In brief, VIBRAVAR can be used to:

- start and stop, reverse and continuously vary the operating frequency from zero to top rate within the envisaged range by means of the local control panel or a remote control;
- program starting and stopping times according to specific needs;
- select 7 pre-programmed frequencies with the remote control;
- establish frequency variation by means of a signal between 0 and 10 V.D.C., between 0 and 20 mA, or by means of a 5V TTL logic level pulse chain from an external source;
- reverse the spinning direction at maximum frequency even when the electric vibrators have a high moment of inertia;
- obtain a full check-control both by means of the display on the local panel and via remoted warning signals.

Technical specifications

Input:

380V-480V ($\pm 10\%$), 48 Hz-62 Hz threephase power supply.

Output:

0 to 480V voltage rating, frequency from 0 to 400 Hz, sinusoid PWM coded with programmable carrier frequency.

Mechanical protection:

IP20.

Environmental specifications:

max 1000 m without derating; ambient temperature from 0° to 40°C; relative humidity from 5 to 95% without condensation.

Certifications:

UL, CSA, CE; EN 50081-1, 2; EN 55011 Class A & B; EN50082-1,2;
IEC 801 1, 2, 3, 4, 6, 8 for EN 50082-1, 2; EN 60204-1; PREN 50178.

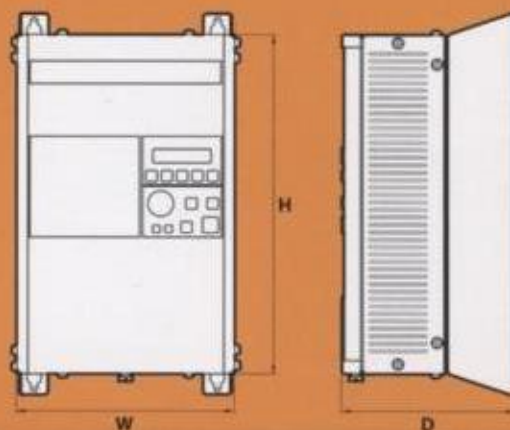
Conformity to the European Directives:

Low Voltage 73/23/EC, Electromagnetic compatibility 89/336/EC.

Choice of the VIBRAVAR

Proceed in the following way to choose the right VIBRAVAR:

- a) find the rated current I_n on the data plate of the electric vibrator you wish to use and multiply it by the number of electric vibrators;
- b) multiply the result by the safety factor = 1.88;
- c) choose the type of VIBRAVAR that has the output current (see table) immediately above the calculated current value.



Each VIBRAVAR is equipped with:

- protection against power supply voltage variations beyond the indicated tolerance limits for overloads, short-circuits on the output, leakage towards earth and overtemperatures. Faults are indicated on the display.
- no-break components to maintain the preset function even in the event of a power failure lasting no longer than 500 milliseconds.

Code	Type	Power rating kW	Input Power kVA	Input Current A	Output Power kVA	Output Current A	H mm	W mm	D mm	Weight kg	Code EMC filter
542539A	VR 022PII	2.2	5.1	6.4	4.2	5.3	290	215.9	180.5	5.5	542575A
542540A	VR 037PII	3.7	8.0	10.0	6.7	8.4	290	215.9	207	6.7	542575A
542541A	VR 056PII	5.5	11.3	13.6	10.6	13.3	350	260	212	15.9	542584A
542542A	VR 075PII	7.5	13.6	16.4	12.8	16.1	350	260	212	15.9	542584A
542543A	VR 112PII	11.0	20.4	24.5	19.1	24.0	350	260	212	15.9	542584A
542544A	VR 150PII	15.0	23.0	28.0	22.0	27.0	350	260	212	15.9	542584A
542545A	VR 180PII	18.5	33.0	40.0	31.0	39.0	476.3	276.4	225	22.7	542577A
542546A	VR 225PII	22.0	38.0	46.0	36.0	45.0	476.3	276.4	225	22.7	542577A
542547A	VR 370PII	30.0	48.0	58.0	48.0	60.0	701	301.8	225	38.6	542578A

The Italtvibras production range



MVSI

The most extensive range of industrial electric vibrators on the market. Range from 0 to 250 kN.



MVSI explosion-proof version

MVSI electric vibrators designed for the atmosphere potentially explosive. Range from 0 to 218 kN.



MUSS

Electric vibrators in AISI 316L stainless steel for the chemical, petroleum chemistry, food, pharmaceutical processing sectors.



CDX

Explosion-proof electric vibrators for operation in potentially explosive atmosphere (Eex d-UL-C.S.A.). Range from 0 to 218 kN.



MICRO

Electric vibrators designed for continuous service in processes where a lower centrifugal force is required. Range from 0 to 640 kN.



MUCE

Direct current vibrators (12 or 24 V) designed for continuous service on mobile machines. Range from 0 to 2 kN.



MTF

Vertical electric vibrators with side flange. Range from 0 to 11 kN.



MVB

Vertical electric vibrators with side flange and shaft projecting on both sides. Range from 0 to 68 kN.



MVB-FLC

Vertical electric vibrators with central flange and shaft projecting on both sides. Range from 0 to 68 kN.



VB

Vertical electric vibrators with double tapered flange. Range from 0 to 24 kN.



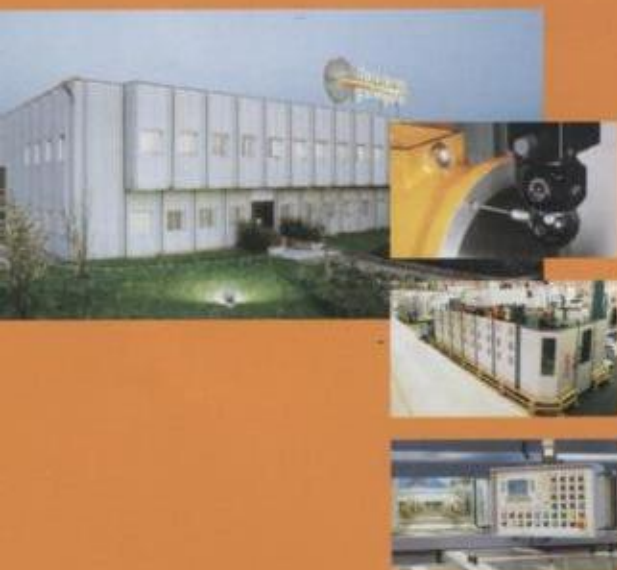
ITU-VB

Variable high frequency electric vibrators with fixed or cradle connection for industrial building sector. Range from 0 to 90 kN.



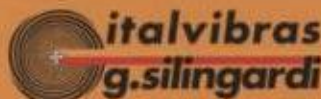
ITUHF

Fixed high frequency electric vibrators (6000 or 9000 rpm) with fixed or cradle connection. Range from 0 to 27 kN.



Italtvibras: specialization from the market leader.

When it comes to producing electric vibrators, Italtvibras G. Silingardi SpA has been market leader since 1959. These high quality, tough and reliable electric vibrators are flanked by the competence achieved through numberless applications in all industrial sectors. But Italtvibras vibrators are particularly reliable in the most critical conditions of use. Along with CE and IP 66-7 (degree of mechanical protection) certifications, the vibrators have also obtained certifications for potentially explosive atmospheres: for Europe, CESA notification that testifies to production quality (EEx e - EEx d) according to Directive ATEX (94/9/EC) and U.L. C.S.A. D.J.P. Australia for the rest of the world.



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