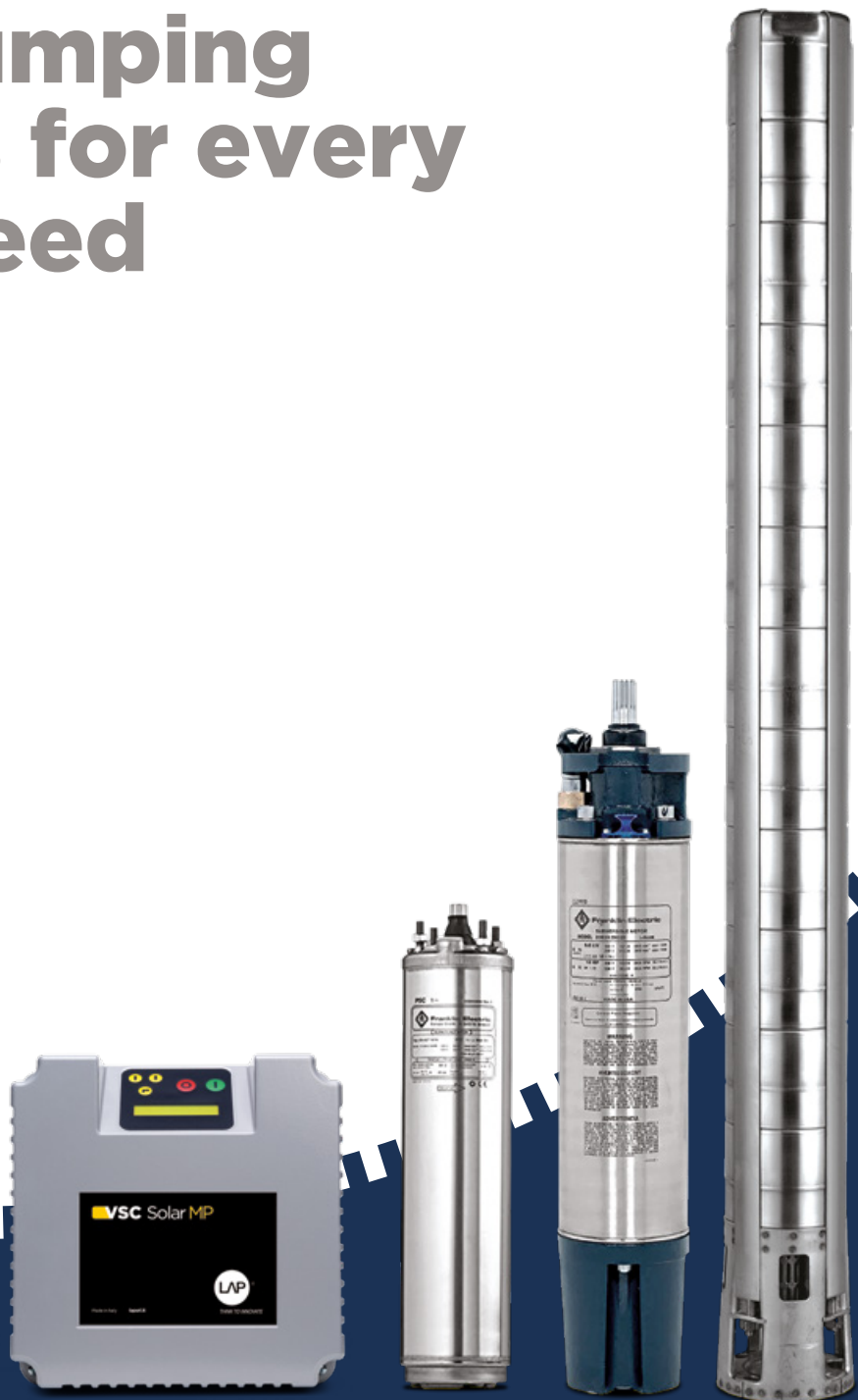


# **VSP** Solar pumps **MP**

**Solar pumping  
systems for every  
water need**

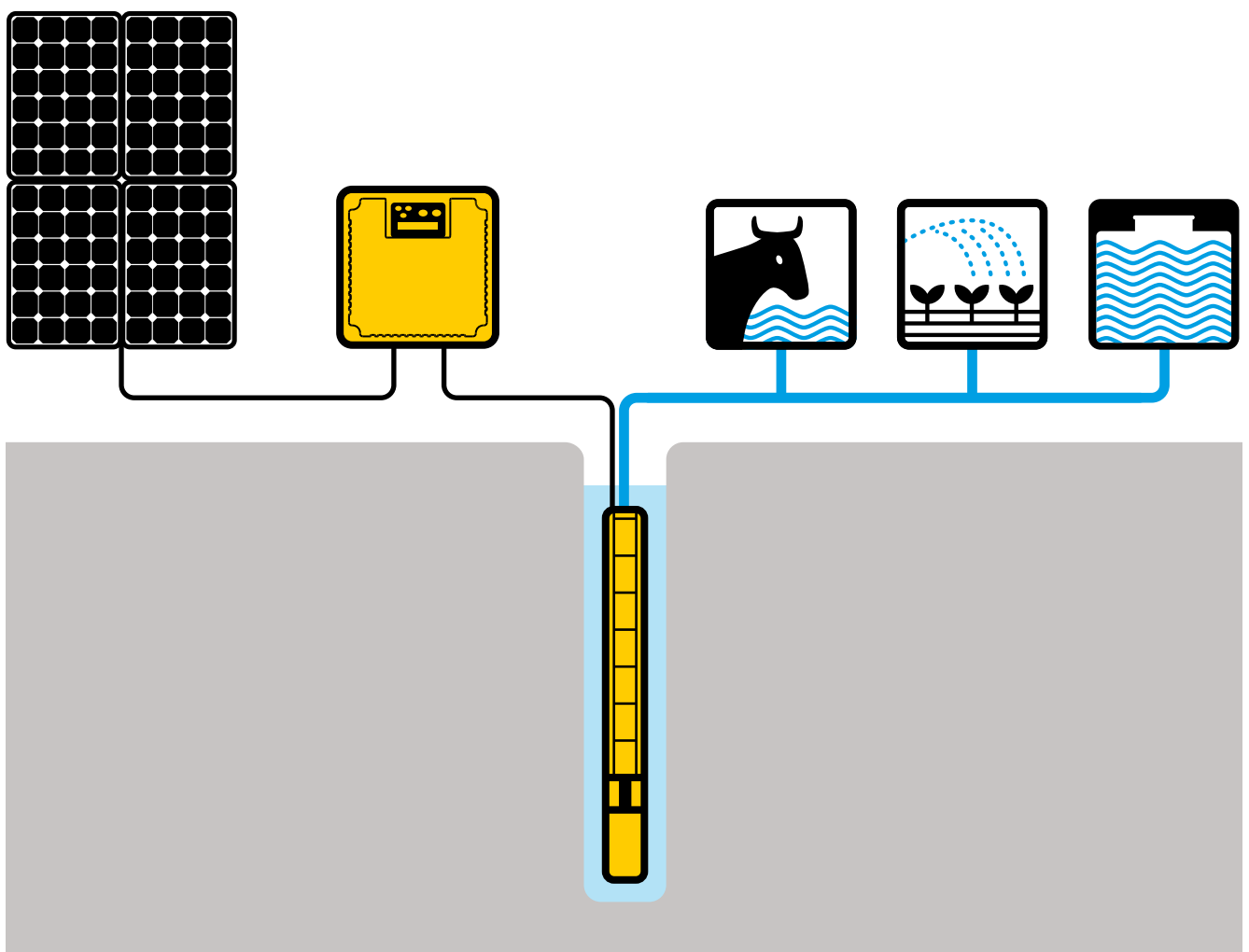


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**VSP systems are created to meet the widest variety of pumping applications using solar energy.**

The combination of VSC Solar MP inverters with the complete range of stainless steel submersible pumps ranging from 4” to 10” offers a solution of superior quality, unique in its reliability, variety and performance.



Whatever the demand for water, there is always a VSP system that can satisfy it.

VSC Solar MP is able to convert DC voltage coming from solar panels into AC voltage for powering any pump driven by a three phase motor.

Pump speed is constantly adapted to available solar irradiation thus maximising the amount of pumped water and making possible operation even in conditions of low sunlight.

VSC Solar MP also offers complete pump protection against surges, overloads and dry running.

VSC Solar MP is built entirely of aluminium to ensure maximum cooling and durability. Other metal parts are made using AISI 304 stainless steel and therefore resistant to corrosion.

Two independent external fans and an internal fan provide perfect cooling.

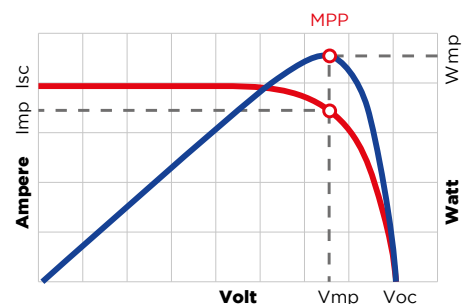


## MPPT: always the maximum power available

Based on the varying conditions of solar irradiation and temperature, MPPT (Maximum Power Point Tracking) maximises the electrical power drawn from the panels and therefore the amount of water pumped.

The greater the solar irradiation the faster the pump's rotation speed, and consequently water flow increases.

When solar irradiation decreases (due to clouds or the different times of day), the pump reduces frequency and therefore the flow, but it continues to provide water until the irradiation falls below a minimum level necessary to ensure operation.



## Monitoring parameters

VSC Solar MP is equipped with a backlit alphanumeric display and is designed to monitor key electrical parameters like input voltage, power, current and motor power factor.

It is also possible to connect a pressure or flow sensor to monitor performance levels. The diagnosis menu logs inverter and motor hours, operating statistics, and the last eight alarms.

The programming menus are password-protected to prevent unwanted tampering.

## Advanced connectivity

VSC Solar MP can be connected to:

- An alarm
- A motor run/stop signal
- A pressure sensor or a flow sensor for monitoring
- Up to four digital inputs for pump start and stop (float switch, level sensors, etc.)
- Modbus RTU

## Complete pump protection

VSC Solar MP is able to protect the pump against overload and dry running.

Dry running protection is performed by monitoring the motor's power factor and therefore probes are not required.

VSC Solar MP also protects itself against surges and overheating.

## Complete range of 4", 6", 8", 10" submersible pumps

- Fully AISI 304 stainless steel.  
AISI 316 available on request.
- Stainless steel impellers and diffusers for maximum efficiency and reliability.
- Maximum sand content: 50 g/m<sup>3</sup>.



## Three-phase 4", 6", 8" water filled submersible motors

- Encapsulated and resinated stator\* to grant maximum insulation and heat dissipation.
- Protection degree IP68.
- Insulation class F.
- Max water temperature: 30°C, minimum speed 0.08 m/s.
- Removable lead connector.
- Cable for drinking water applications, VDE/ACS/KTW compliant.
- No-wear, water-lubricated thrust bearing.
- AISI 316 version available on request.



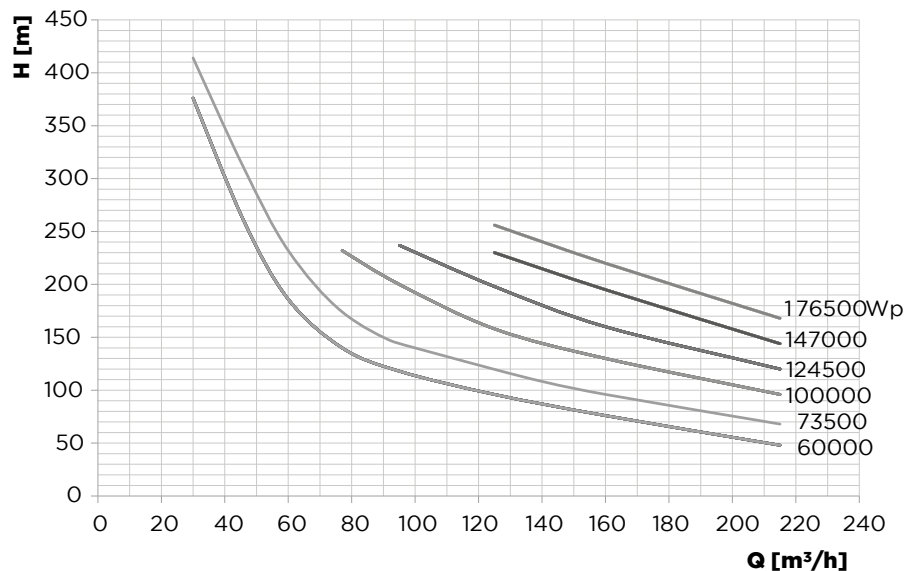
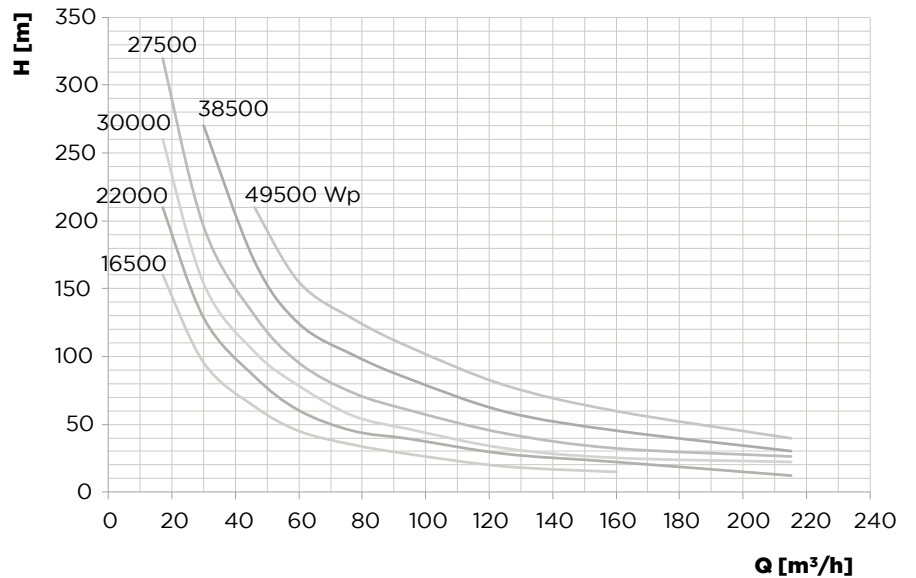
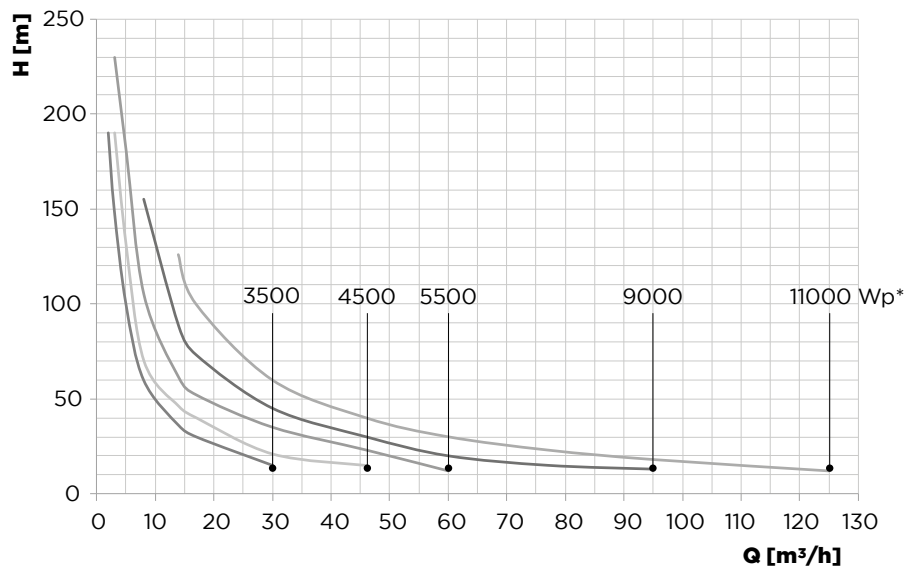
\* as alternative, if required, rewindable motors with a PE2/PA winding insulation can be supplied.

# Performance

The range of VSP pumps is composed of 14 different hydraulic stages with a nominal flow from 2 to 215 m<sup>3</sup>/h. The number of stages varies according to the required head.

In this way it is possible to satisfy the most varied water requests. The table shows the maximum performance attainable by each type of hydraulics with the maximum number of stages.

Model	Max stages	Q m <sup>3</sup> /h	H m
VSP 2	75	2	300
VSP 3	52	3	230
VSP 5	44	5	180
VSP 8	37	8	150
VSP 14	25	14	120
VSP 17	40	17	480
VSP 30	54	30	410
VSP 46	35	46	300
VSP 60	30	60	230
VSP 77	20	77	255
VSP 95	20	95	250
VSP 125	12	125	250
VSP 160	10	160	200
VSP 215	7	215	175



# VSC Solar MP technical specifications

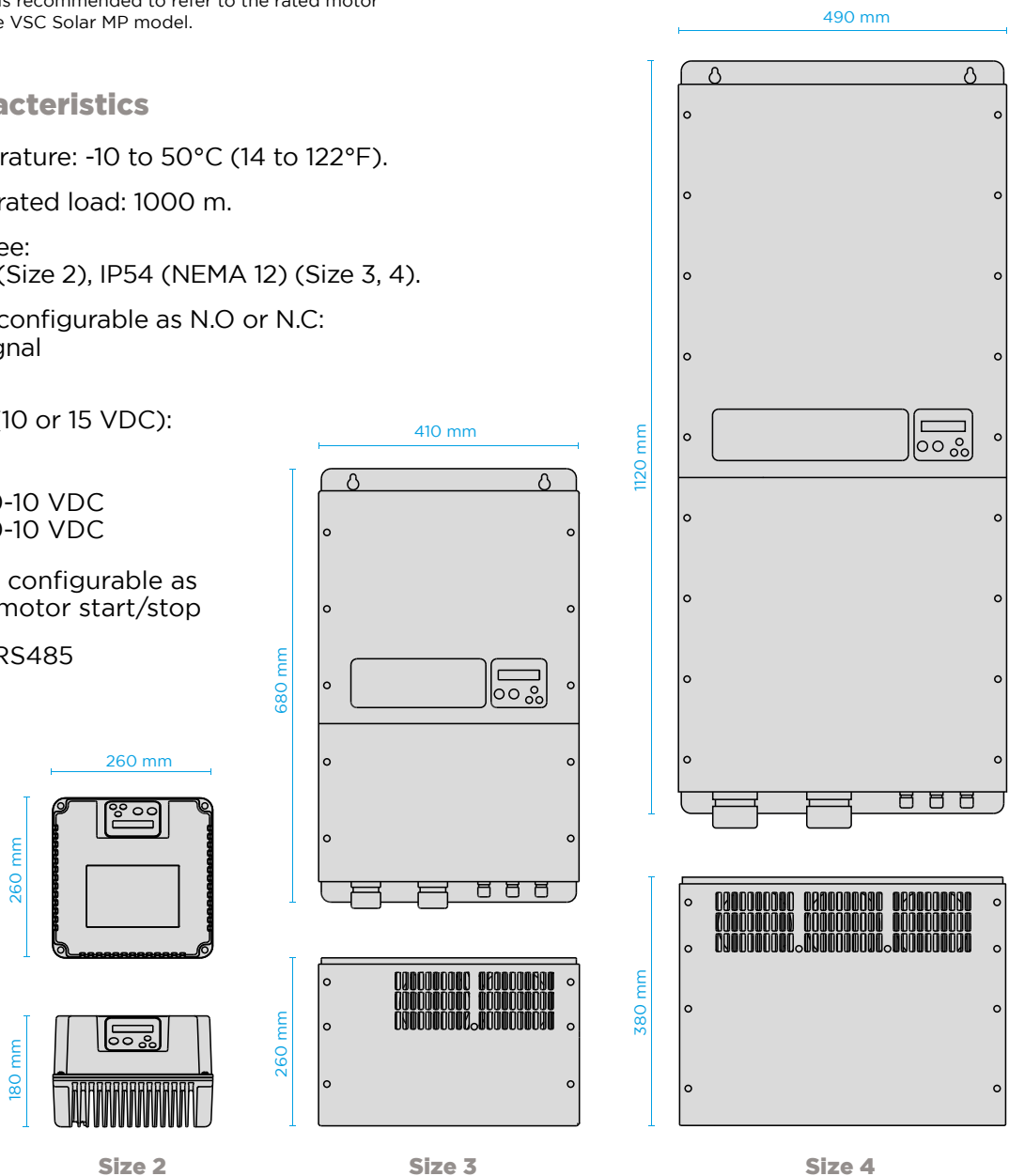
Model	Vin VDC	Vin, P1 nom* VDC	Max Vout VAC	Max I out A	Typical motor P2** VAC	Typical motor P2** kW	Weight Kg	Size
VSC Solar 212 MP	160 - 650	> 320	3 x 230	12	3 x 230	2,2	8,2	2
VSC Solar 409 MP	320 - 850	> 560	3 x 400	9	3 x 400	3	8,3	2
VSC Solar 412 MP	320 - 850	> 560	3 x 400	12	3 x 400	4	8,5	2
VSC Solar 415 MP	320 - 850	> 560	3 x 400	15	3 x 400	5,5	8,5	2
VSC Solar 418 MP	320 - 850	> 560	3 x 400	18	3 x 400	7,5	8,5	2
VSC Solar 425 MP	320 - 850	> 560	3 x 400	25	3 x 400	11	8,5	2
VSC Solar 430 MP	320 - 850	> 560	3 x 400	30	3 x 400	15	8,7	2
VSC Solar 438 MP	320 - 850	> 560	3 x 400	38	3 x 400	18,5	28	3
VSC Solar 448 MP	320 - 850	> 560	3 x 400	48	3 x 400	22	28	3
VSC Solar 465 MP	320 - 850	> 560	3 x 400	65	3 x 400	30	28	3
VSC Solar 485 MP	320 - 850	> 560	3 x 400	85	3 x 400	37	28	3
VSC Solar 4100 MP	320 - 850	> 560	3 x 400	100	3 x 400	45	87	4
VSC Solar 4118 MP	320 - 850	> 560	3 x 400	118	3 x 400	55	87	4
VSC Solar 4158 MP	320 - 850	> 560	3 x 400	158	3 x 400	75	87	4
VSC Solar 4198 MP	320 - 850	> 560	3 x 400	198	3 x 400	93	87	4
VSC Solar 4228 MP	320 - 850	> 560	3 x 400	228	3 x 400	110	87	4
VSC Solar 4268 MP	320 - 850	> 560	3 x 400	268	3 x 400	132	87	4

\*Input voltage necessary to obtain 100% of rated motor power.

\*\* Typical motor power. It is recommended to refer to the rated motor current when selecting the VSC Solar MP model.

## Electrical characteristics

- Ambient temperature: -10 to 50°C (14 to 122°F).
- Max altitude at rated load: 1000 m.
- Protection degree: IP65 (NEMA 4) (Size 2), IP54 (NEMA 12) (Size 3, 4).
- Digital outputs configurable as N.O or N.C:
  1. Motor run signal
  2. Alarm signal
- Analog inputs, (10 or 15 VDC):
  1. 4-20 mA
  2. 4-20 mA
  3. 4-20 mA or 0-10 VDC
  4. 4-20 mA or 0-10 VDC
- 4 digital inputs, configurable as N.O or N.C, for motor start/stop
- MODBUS RTU RS485





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