



BAUER

FOR A GREEN WORLD



Q&A IRRIFAST

1. What is IrriFast?

IrriFast is the solution for faster and smarter pivots, revolutionizing agricultural irrigation by providing higher speed and detailed information about the equipment, resulting in a significant increase in efficiency and longevity of field equipment for producers.

Irricontrol, a company of the Bauer Group, continues its tradition of bringing innovation to agricultural irrigation with the launch of IrriFast. This new product stands out for optimizing the irrigation time of the pivots, reducing the need for maintenance, and making it easy to identify problems in each tower of the equipment.

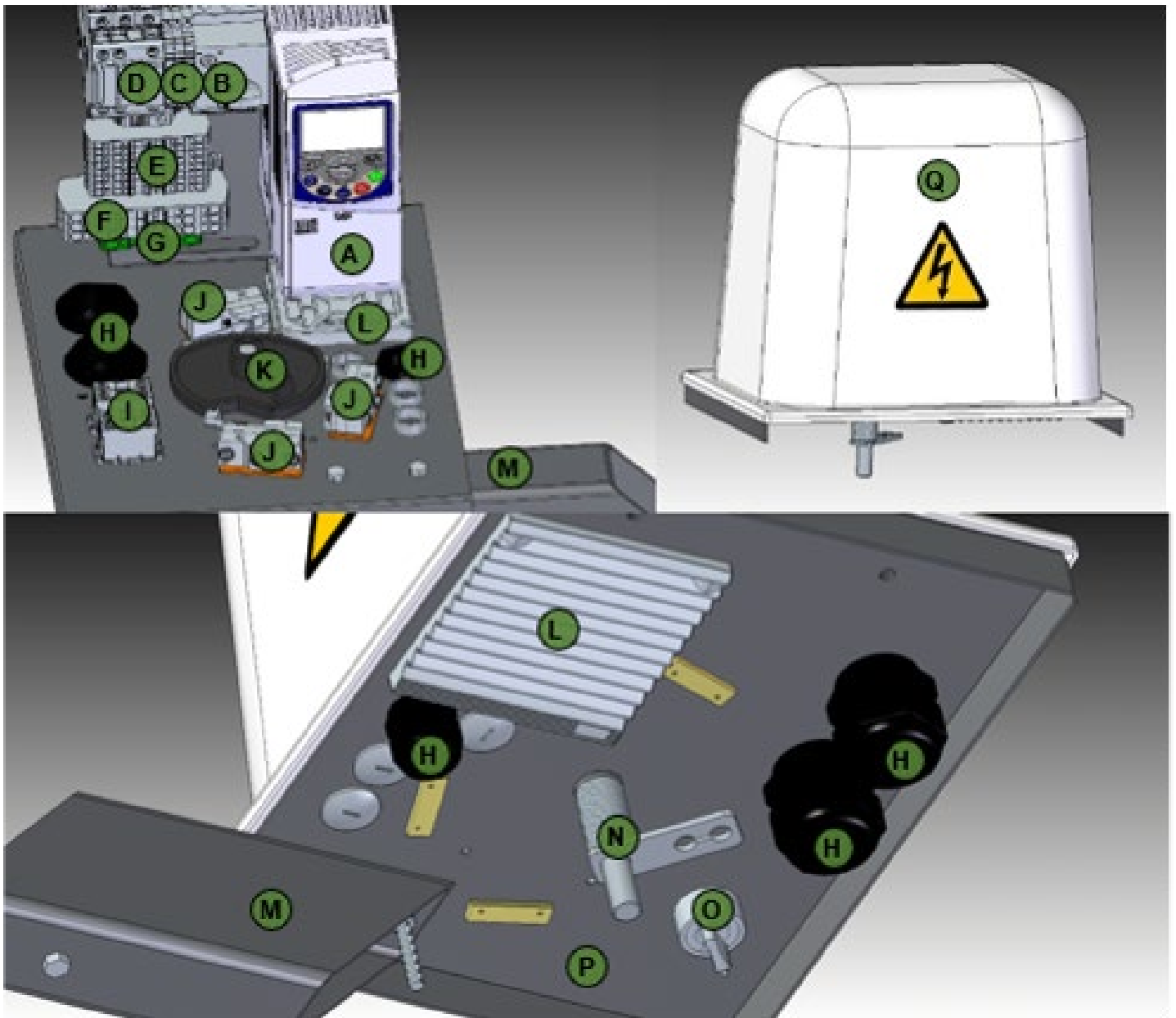
Among the challenges faced in the field is the need to reduce the operating time of the pivot in situations such as fertigation, chemigation, or in cases of emergency irrigation. In addition, the conventional cycle of turning on and off the pivot's drive motors currently can reduce the lifetime of the motor/reducer, harming the product's life cycle.

To solve these problems, IrriFast was developed, a solution that provides higher operating speed, smooth starts and stops of the motor/reducer and precise identification in case of unexpected stops, ensuring more efficient and lasting operation of the irrigation system.

2. What are the internal components of IrriFast?

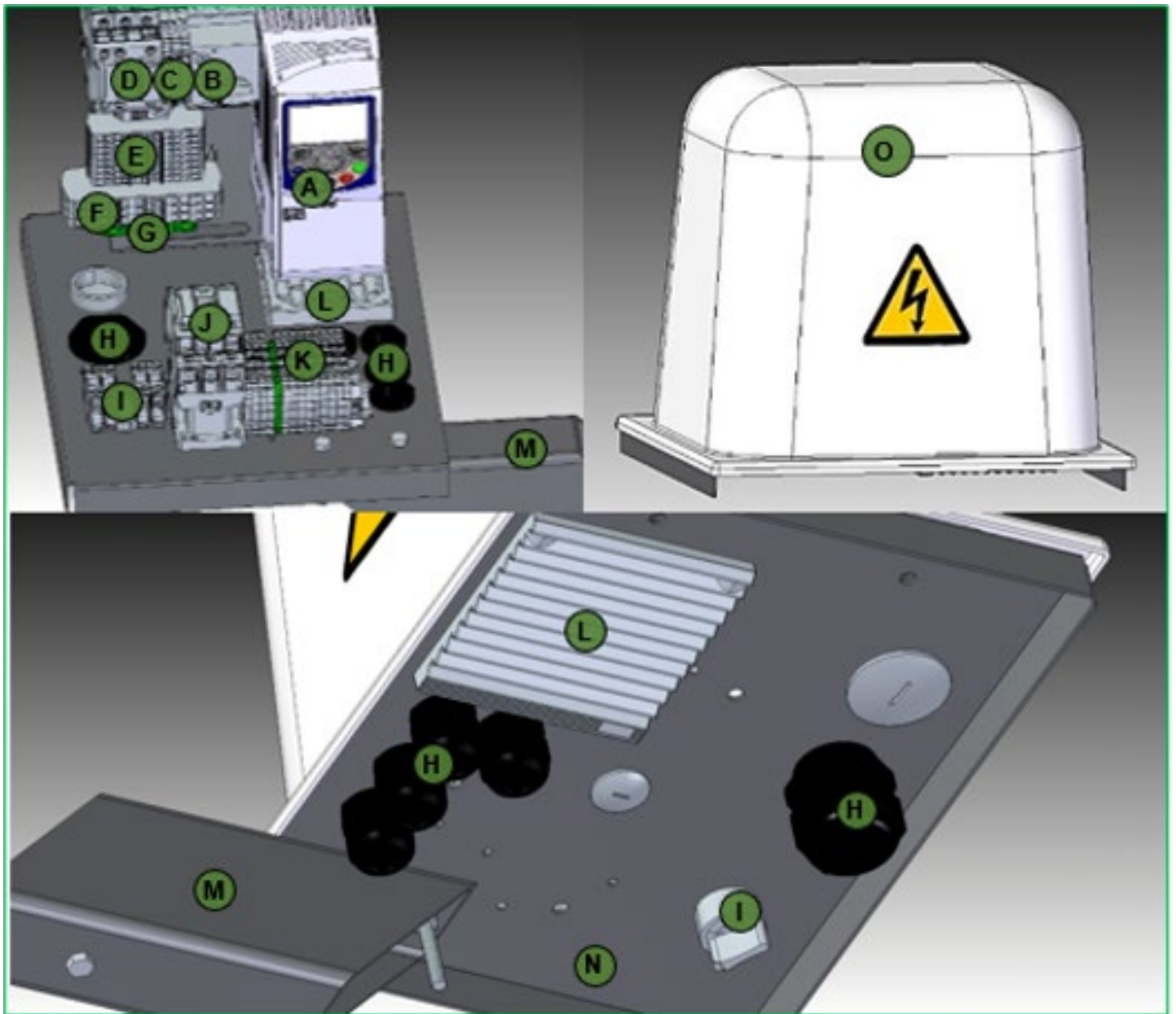
The IrriFast Alignment Control Boxes Standard and End Tower Control Box are products of the highest technology, integrating a variety of mechanical, electrical, and electronic elements. These components work in harmony to ensure precise and efficient control of the irrigation system, providing reliable and high-performance operation.

Irrifast Alignment Control Box



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|----------|------------------------|----------|---------------------------------|
| A | Frequency Inverter; | I | Contact Block; |
| B | Motor Circuit Breaker; | J | Final Cannon Contactor; |
| C | Interface Relay; | K | Terminals for Peripherals; |
| D | Contactor; | L | Ventilation Grille with Filter; |
| E | Command Terminals; | M | Fixing Support; |
| F | Power Terminals; | N | Base Plate; |
| G | Grounding Terminals; | O | Cover. |
| H | Cable Glands PGs; | | |

IrriFast End Tower Control Box



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|----------|------------------------|----------|--------------------------------|
| A | Frequency Inverter; | I | Contact Block; |
| B | Motor Circuit Breaker; | J | Microswitches |
| C | Interface Relay; | K | Cam; |
| D | Contactor; | L | Ventilation Grille with Filter |
| E | Command Terminals; | M | Fixing Support; |
| F | Power Terminals; | N | Lever Assembly; |
| G | Grounding Terminals; | O | Analog Switch; |
| H | Cable Glands PGs; | P | Base Plate; |
| | | Q | Cover. |

3. How is the protection of IrriFast? What is this contactor and this motor circuit breaker for?

The protection of IrriFast is guaranteed by the motor circuit breaker and the contactor, in addition to the grounding system, common in all pivots. These components protect the equipment against atmospheric discharges, either through grounding or segregation of the aerial cable when the pivot is off, in addition to the SPDs in the control panel, common in Bauer control panels. And there is still the inherent protection of frequency inverters, added to the motor circuit breaker to prevent damage to the motor/reducer assembly.

- The motor circuit breaker serves to ensure operational safety and the integrity of electrical systems. It is calibrated to trip when the electric current exceeds a predefined limit, offering precise and reliable protection against overloads.
- In the prevention of short circuits, the frequency inverter constantly monitors the electric current flowing to the motor. If an abnormally high current is detected, indicative of a short-circuit or overload condition, the device can react quickly, reducing or interrupting the power supply to the motor-reducer.
- Grounding is the intentional connection of an electrical system to a soil or earth with good electrical conductivity, with the aim of ensuring the safety of people and electrical equipment.

4. Which alignment system should be used together with IrriFast?

Both existing systems work very well with IrriFast. However, even for long pivots, the cable alignment system can be dispensed with due to the good operation of the system with a simple alignment system.

5. What are the voltage limits of IrriFast operation?

The IrriFast Control Boxes operate with a voltage of 340 VAC to 510VAC. It is crucial to ensure the quality of the voltage supplied to the system, to ensure its performance and product longevity. Significant fluctuations in voltage or inadequate electrical supply can negatively affect the functionality of the equipment, resulting in premature wear or operational failures.

6. Does it work for single-phase pivots?

Even in situations where the electrical network is not three-phase, the system can be employed in situations of single-phase 220Vac power supply. However, it is always important to consult the dealership or Bauer, so that an analysis of the conditions of use of the system can be evaluated.

7. Which motor-reducer model is recommended for this solution? Is it the same model on all towers?

The 1.5 UMC and 2.5 UMC models are recommended, the latter being the most suitable for situations of irregular terrain.

8. Does it work on all pivots or only Bauer pivots?

The system works on new and existing Bauer pivots. Customers with existing pivots should be advised that if IrriFast will be installed, there is a possibility that the gear motor with standard application is already on its operating limit or is at the end of its service life. These factors could have a negative effect on the IrriFast operation.

9. How does the acceleration and deceleration process of IrriFast work?

The IrriFast Standard Control Boxes are installed on each of the drive towers, located between two spans of the Bauer pivot. This model is connected to the CX Control Rod M8X300 INOX and employs microswitches to detect the angulation between the segments of the pivot, aiming to control the rotation of the motor-reducers. The operating frequency of the motor-reducers is continuously adjusted, according to the needs, to keep the angulation between the spans as close as possible to zero degrees.

10. What is the maximum speed of IrriFast?

The current speed obtained with the system is 400 m/h. There is a possibility to increase the speed even more, but for this, it is necessary that a suitable motor-reducer is used in the pivot.

11. Although it is not yet available, how will the tower misalignment detection system work? (Coming soon)

A misalignment signal will be sent to the panel controller through its communication with the inverters. (Coming soon)

12. In a Bauer pivot, can I put IrriFast in half of the towers and another half the conventional box?

Although this condition may work with the system, the indication is that this hybrid model of control boxes should not be used, as the benefits would be “cut” in half. Also, the calibration of the alignment condition between an IrriFast control box and a conventional one are different, which could cause unwanted traces due to the difference in alignment between the different technologies.