

SMARTSLAVE

User Manual



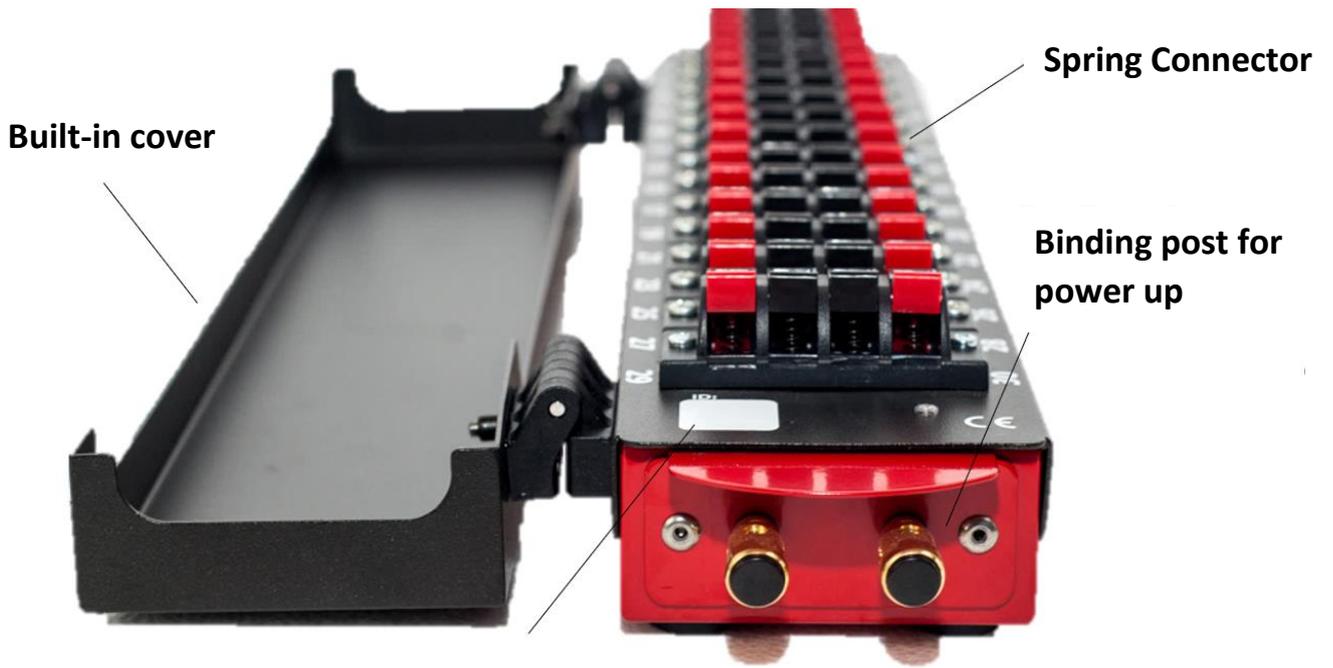
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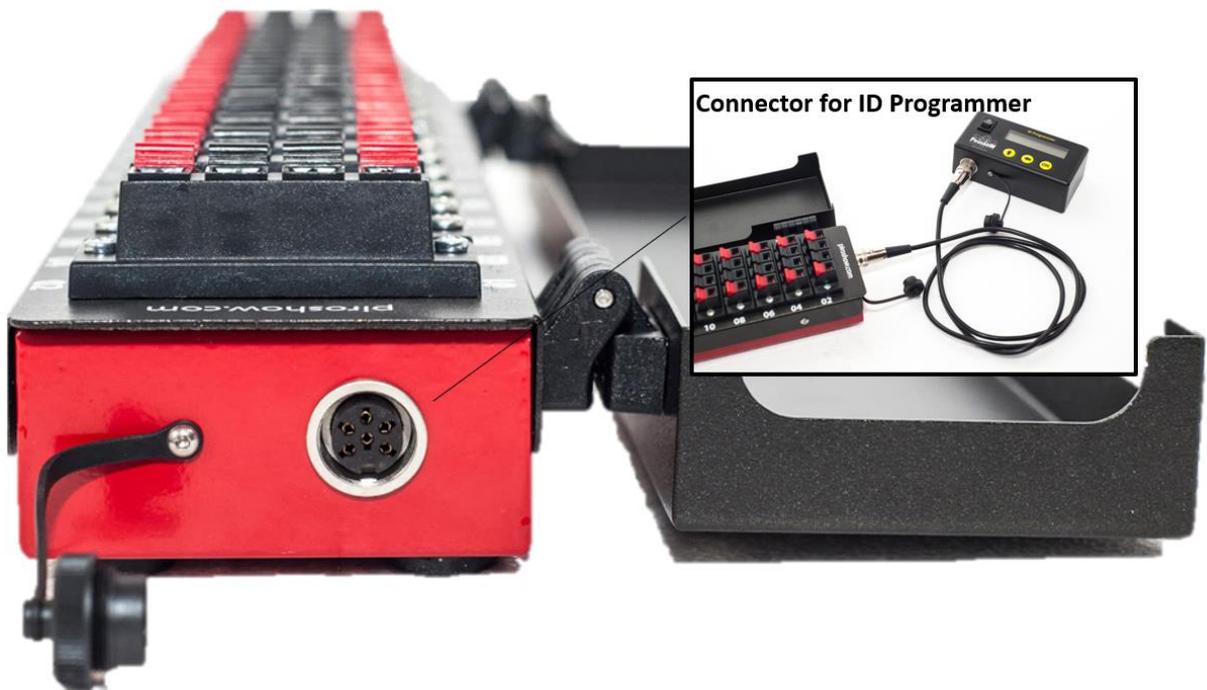
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Write the ID of your SmartSlave



Introduction

Every SmartSlave has an independent and double internal circuit: the first part, than needs 5V only, has the function to allow the operations of ID assignation and line test, the second part of 50V(a voltage that is really more high than the modules of other factories) is the one that prime the ignition.

The two connectors with silver bushings have the function to receive the power source from the Power Box and to establish the communication through electric wire, a simple telephone wire.

ATTENTION: do not confuse these connectors with a TRIGGER ENTRY!!! The SmartSlaves have no battery so they will never work!

The internal circuit that rules the function of the SmartSlave is an exclusive avantgarde Piroshow Project that guarantee to the pyrotechnician the possibility to plan, economy and reliability warranty that you cannot find products of other companies:

- the external power source system through the double and powerful battery of the Power Box allows a constant alimentation for every module with exit voltage of the Power Box of 50V,
- there no possibility of lack of voltage for the length of the connction wire, and allows always the possibility to connect at least 15 igniter in series for every channel with the lesser number of modules for the show.-the control of the charge is entrust to the Power Box so this prevent in advance the possibility of short circuit. Reliability warranty,
- the exclusive internal Piroshow circuit allows the passage on the connction wire (a simple electric/telephone wire) in the power source and in the communication of transmission of the state of the SmartSlave to the Master FullPower or Master Full,
- there a big money saving respect of the use of the 4 poles wire you need for the products of other companies,
- the two chromed bushings used as entries for the power source/data transmission cable are projected to have no polarity.SmartSlave will be always functioning, despite of the order of insertion. Really easy to use e time saving in the disposition.

The connector that is on the other side of the SmartSlave respect of the two entry bushings is protected by a hermetic screw cap and have the only function to connect the SmartSlave to the ID Programmer for the operations of ID assignation and the system test.

1 Guaranteed fire voltage

- Igniters in parallel: insert two or more igniters in the same couple of connector. The electronic of the SmartSlave does not support connection of igniters in parallel.

- Igniters in series: an only igniter is connected to the connector, but the electric wire of the igniter are connected through UYB connectors.

The SmartSlave supports the connection igniters in series.

The number of connector you can use is variable and depends on the same causes:

- On the distance of the Power Box: higher is the length of the wire that connect the devices, higher is the physical effect of voltage loss on the line.
- On the number of SmartSlaves connected to the Power Box: higher is the number of the SmartSlaves connected, lesser is the voltage for each of them (fire voltage).

Considering this aspects, Piroshow guarantees to all the pyrotechnicians the presence of 30V of fire voltage (in exit) for every SmartSlave connected to the Power Box even when 16 SmartSlaves are connected (the maximum number). Having 30V means you can connect even 15 igniter in series for each of the 30 channels of the SmartSlave!!

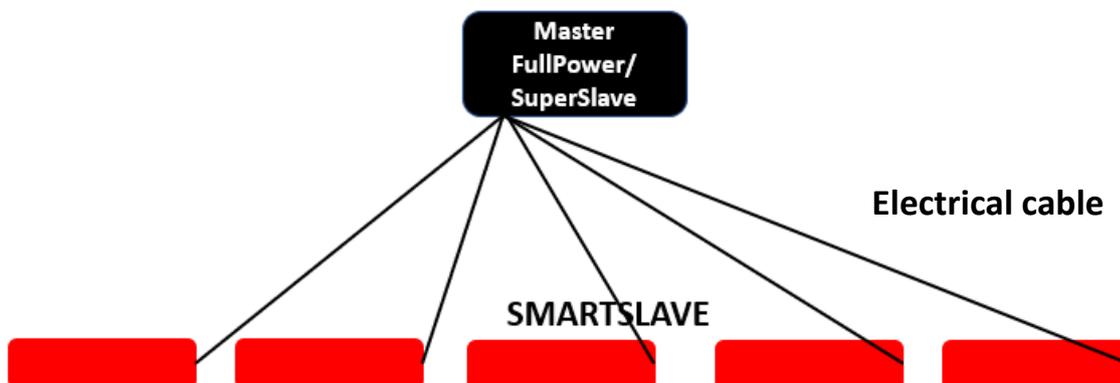
Connect the igniter before connecting the SmartSlave to the Master FullPower or SuperSlave.

2 Modality of connection of the SmartSlaves

1. "Spokes" connection

Every SmartSlaves is connected to the Master FullPower or SuperSlave through a separated electric wire.

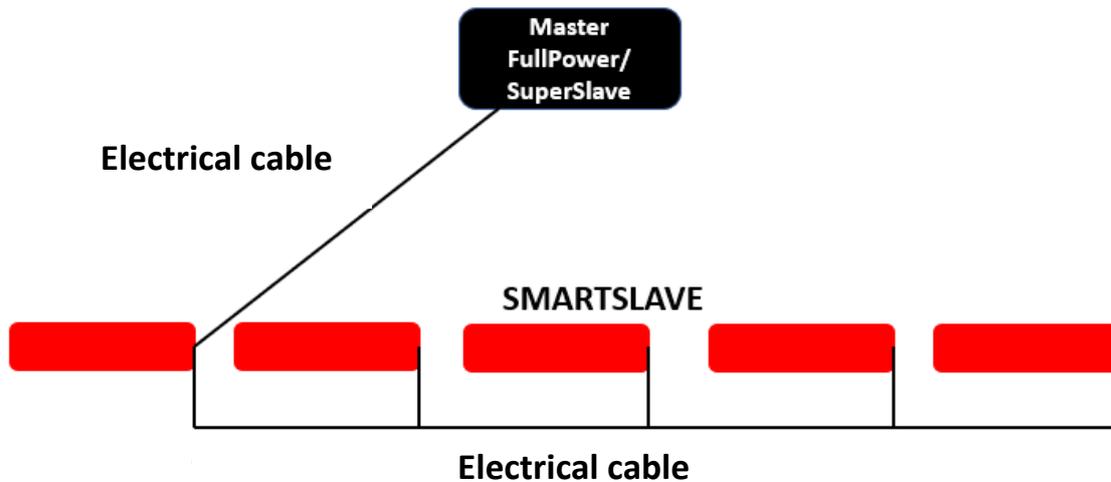
With this configuration, Piroshow guarantees the voltage of 30V per SmartSlave even at the distance of 1km for single connection wire.



2. "Cascade" connection

When you use this modality, only the first SmartSlave of the system is connected to Master FullPower or SuperSlave.

The other SmartSlaves are instead connected each other at “cascade”, alike an only wire that connect all the SmartSlaves.



If the distances of the connection wire or wires are higher it is necessary to have 30V of Fire, Piroshow suggests to use an electric with the section higher of the standard of at least 1.5 mm² for every conductor.

Once placed the fireworks and done the connection, verify the real voltage is now possible through the line test operation through the ID Programmer, Master Full, Master FullPower or Master Manual.

Considering that every igniter use 2V to be operating, you can know how many igniter you can connect in a very simple way: exit voltage/2

ex. $30/2=15$

ex. $43/2=21$

ex. $26/2=13$

The internal electronics of the SmartSlave and the system of power source through Master FullPower or SuperSlave allow to have a minimum interval between an ignition and the other of only 0,05 sec.

Even if it is possible (when each connector is connected to one only igniter), Piroshow suggests the pyrotechnician to not to execute two or more channels at the same time but to use the guaranteed big fire voltage by connecting in series more igniter to execute simultaneously.

Warranty conditions

All the Piroshow product are covered by international warranty for flaws, bugs or malfunctions following the European Directive 1999/44/CE and the Italian D.Lgs. 206/2005.

If the product you receive is not functioning or bad functioning the customer has the right to the substitution or the right of withdrawal, after the immediate communication following the laws.

All the Piroshow products are high tech condensate, the warranty on the right function extend for two years from the date of purchase and depends on the right use of the product, on the right maintenance and on the lack of alteration.

Norms of validity of the warranty:

- Each module have to be used after the reading of the user manual and the instructions it contains.
- Be always sure that not authorized people will not go on the field of the show and interfere with the ignition system.
- The Piroshow modules are appointed to the ignition of fireworks so the their safety and the safety of the show **depends even** on the right execution of the norms of the single fireworks. Be sure to have a special regard to the ones that are sensible to electromagnetic fields.
- The Piroshow products that are indicated as resistant to atmospheric agents have to be used with the case hermetically closed. In case this is not possible, the pyrotechnician have to cover the modules to protect them with an adequate covering.
- Where expressly indicated, the Piroshow products are resistant to heat and to the ashes produced during the execution of the show. Anyway do not position the module too near the fireworks. In any case, the Piroshow module are not resistant to flames.
- The exits, the doors, and the entries that allow the communication e the wiring between the Piroshow modules are guaranteed in their impermeability only trough a correct use. The hermetic top have to be **perfectly closed**, in exception of the time you need to connect the wires for the show execution.
- Use only intact product for the show. If you think there is any problem, do not use the module and do not try to reparations. The use of a not intact module put at risk the health of the pyrotechnician, of his assistants and to public of the show! The inspection and the test of the module is basic in case of rent from other fireworks companies!
- All the connectors and the entries have to be cleaned after the shoe.
- Piroshow is the only company that can repair and do the maintenance service. Considering the assembly method and the internal technology, the opening of the module is not authorized and is cause of decline of the warranty

Safety regulations

The following rules have to be followed to better understand the more relevant safety regulations. The safety regulations were born from our experience and from the daily contact with our customers and permit the safe application of all the components of our of remote-controlled ignition systems. Piroshow is happy to receive further suggestions from the pyrotechnicians to improve the indications that regard the safety in the execution of the shows.

The following safety regulations are part of the instructions of all our systems.

The instructions have to be made available for all the people that are in contact with this aspect of your company.

Every technical system can potentially cause errors.

An erroneous use, damages, usury an ageing advance the introduction of errors.

The Piroshow electronic system of ignition is the most valid support for the pyrotechnician for the electronic ignition of the show and to exalt his artistic creativity, but is in relation with materials, firework, that are dangerous.

This is the motivation that made this rules.

1. Smoking and keeping tools that can make sparks is always forbidden in the zone of the show.
2. Implement all the anti-fire actions and aid actions you need based on the fireworks you use.
3. Respect the National rules, the technical rules and the user instructions of the fireworks and their clauses.
4. Be sure that unauthorized people can't access to the fireworks and ignition systems.
5. Respect the safety zones following the laws and the producer norms. Maintain the extraneous at the right distance from the barriers.
6. The instructions of the producer of the fireworks have to be respected.
7. The use of the installation of ignition have to be done after the right preventative measures.
8. The Piroshow products that are indicated as resistant to the atmospheric agents have to be use with the case with the case hermetically closed. In case this is not possible, the pyrotechnician have to cover the modules to protect them with an adequate covering.
9. Where expressly indicated, the Piroshow products are resistant to heat and to the ashes produced during the execution of the show. Anyway do not position the module too near the fireworks. In any case, the Piroshow module are not resistant to flames.
10. Use only intact product for the show. If you think there is any problem, do not use the module and do not try to reparations. The use of a not intact module put at risk the health of the pyrotechnician, of his assistants and to public of the show! The inspection and the test of the module is basic in case of rent from other fireworks companies!
11. Storms or electrostatic fields that take place before the storm can make chance ignitions. When you notice a storm is arriving, Piroshow suggest to stop the execution of your work for the show and to put in safety the materials you have already put in.
12. The igniters have to be connected in the specific terminal or quick clips, have the cure that the Slave 30 CH 100V, Easy Fire, SmartSlave modules are off or without connections that provide alimentation. Every pyrotechnic effect is anyway to be consider active in the moment the wires are connected to the unit of ignition regardless the system is set On or Off.
13. Always control the integrity of the electric wire you connect to the igniters.
14. Avoid that the fuse and the respective wire have contact with material than can conduct electricity if there is any risk of electrostatic charges.
15. Always control the integrity of the electric system wires.
16. Avoid all the sources of early ignition, alike high voltage of electric, magnetic and electromagnetic fields and sources of voltage.
17. Mobile phones, radio transmitters and all the instrument with internal batteries are a underestimate danger: if used at the same time of the use of the igniters can be cause of chance ignitions. BE CAREFUL!

18. Fireworks, depending on their composition, can produce ionized gas. These gas made the air conductor of electricity. Ionizing processes, if are near the wires of high voltage can made deadly overlaps for the people in the vicinity. Consider that air currents on the field can be different from the ones that are in the height of some meters.
19. Use wires long enough for your safety and for the safety of the system.
20. During the test or the simulation of the show is better that no pyrotechnician and no person is near the position of the fireworks, even if the testing process of Piroshow systems are extremely safe.

