Why is there an interlock in clean rooms?

The PHARMABLOCK Tecnodimensione system is the answer.

The logic of mutual-acknowledgement interlocking doors for the controlled transit of people and/or materials has proved to be the most effective solution to protect from contamination the clean rooms of research laboratories, pharmaceutical industries, hospitals, nuclear stations, food industries and generally of all environments where accesses must be managed and controlled rigorously, yet in absolute peace of mind and safety.

At first glance the development of an interlocking system, ***which for example locks one door when another one is opened and vice versa, would seem an easy task*** but it is not exactly so.

The more you closely analyze the typical issues of clean rooms and the more you realise which and how many variables complicate the task.
The situation can become even more complex if several doors have to interact with one another with transit logics that depend in part and/or in whole from specific procedures, modes, timings, emergency situations, etc., that is from an enormous amount of tasks that are interconnected.
In addition to this, one must also take into account a series of practical aspects connected with the installation of the door frames, the mechanical and electromechanical characteristics of locks, and the routing and wiring of the driving, signalling and management systems cables...

Lastly the final installation must also be designed so that it can be easily serviced and cleaned with detergents, without leading to the accumulation of debris that could contaminate clean rooms... This alone confirms the complexity of this technology and underlines the importance of relying on an experienced and qualified partner to professionally design and develop appropriate interlocking systems and logics.

Tecnodimensione, a leading company in the security field, has leveraged its precious know-how, acquired and broadened in over 35 years of work in the industrial and commercial fields both in Italy and abroad, to design this new line of systems with “Click&Go” technology.

The word “Click&Go” summarises all Tecnodimensione’s engineering technology, which is designed to satisfy all the basic needs in “one go” and provide customers with a whole range of professional interlocking systems for clean rooms.

However, PHARMABLOCK devices are also available with FLEXICON technology to be interfaced with any management unit including PLC, microprocessor boards, or traditional electronic units.
(Require the specific section “Devices and Systems with Flexicon technology”.)

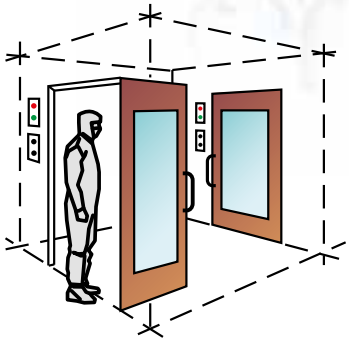
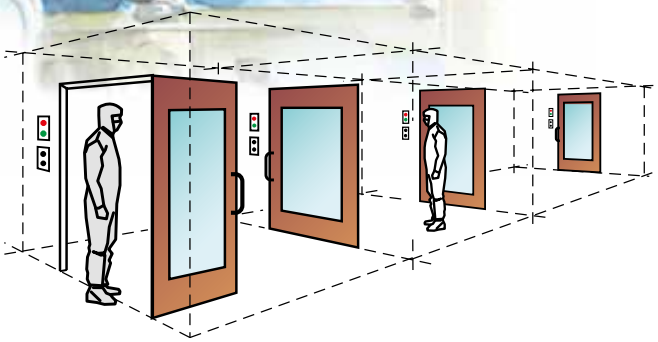


Diagram - Mutual acknowledgement interlocking system with two doors



Multiple configuration for interlocking 3, 4 or more doors without virtually any limits

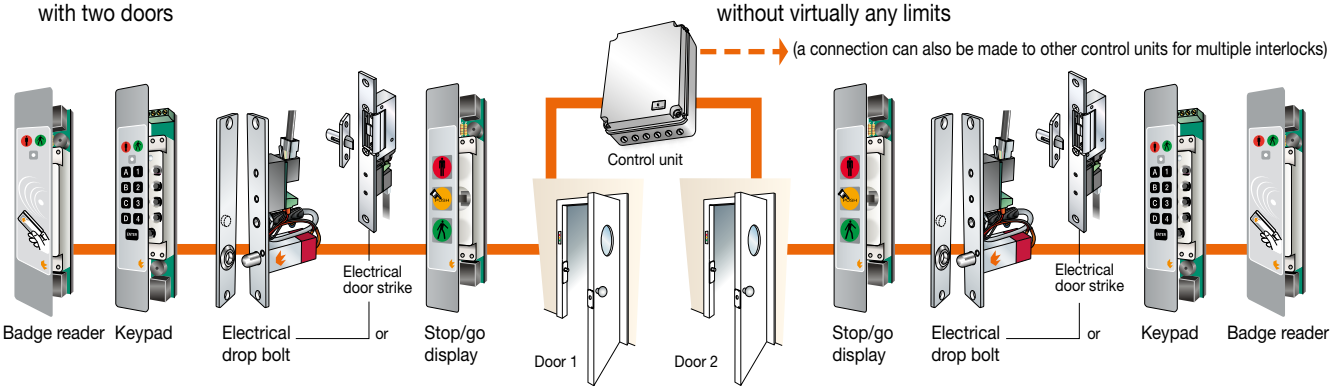


Diagram of the equipment required to configure a door interlocking system with mutual acknowledgment

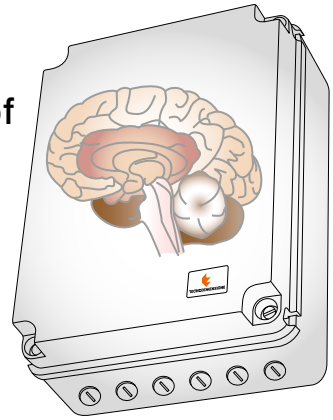
PHARMATRONIX

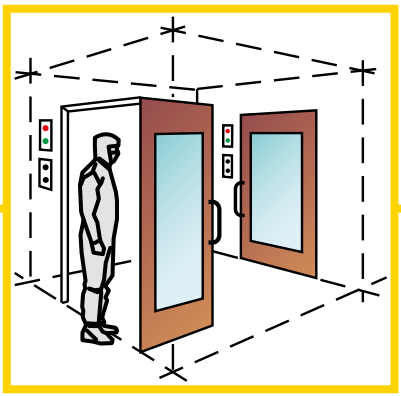
microprocessor-based

PROFESSIONAL TECNODIMENSIONE CONTROL UNIT

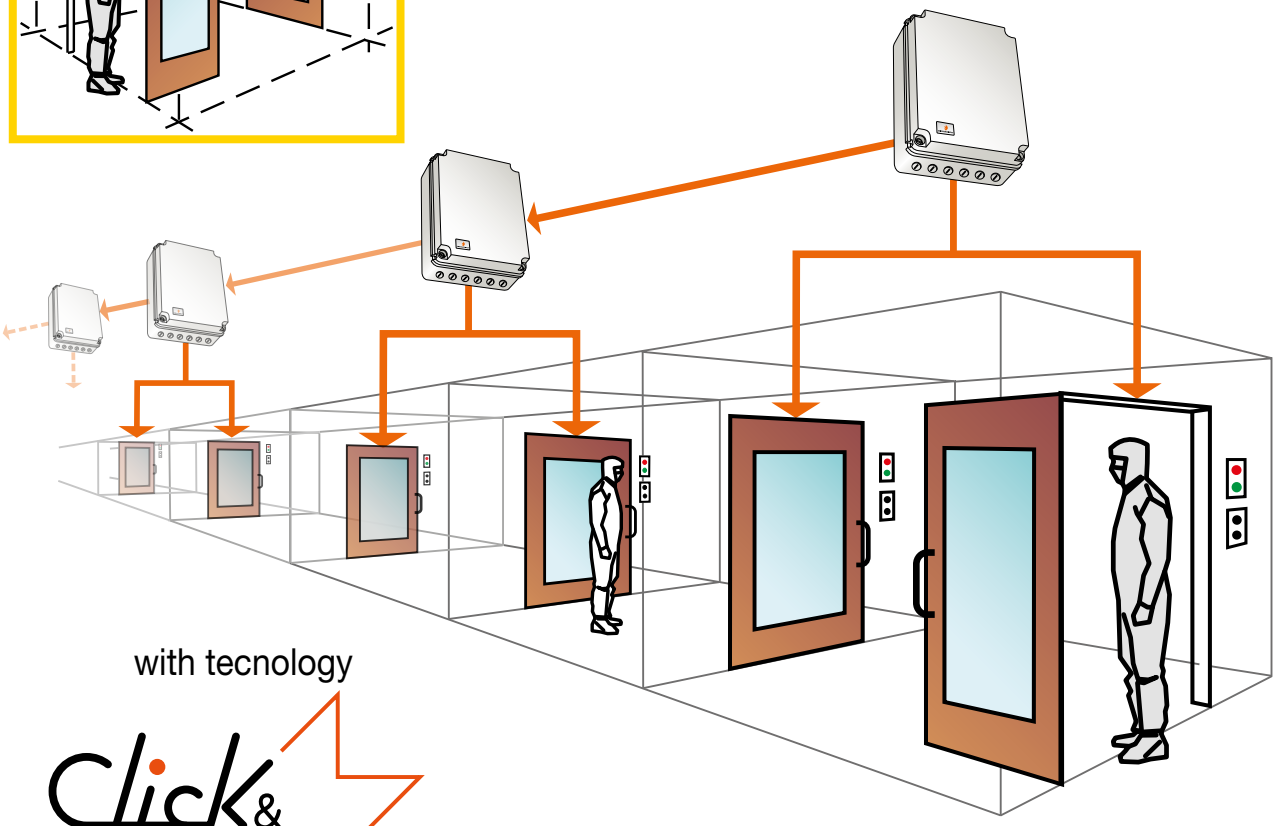
is the brains behind the management of clean room doors

Interlock control units of a two-door system interlocked...





...and in “cascade” for multiple interlocks of 2...4...8...12 doors

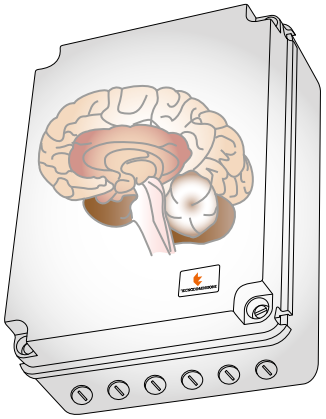


with tecnology

Click & GO ZEROTIME®

TECNODIMENSIONE

security with style



Microprocessor-based PHARMATRONIX
PROFESSIONAL TECNODIMENSIONE CONTROL UNIT

This unit is the “brains” of the system because it hosts all the interlocking logics and drives electric locks, Stop/Go displays and accessories (readers, keypads, etc.). The unit is also able to supply power to the whole system in case of emergency.

One unit... for 3 different needs.

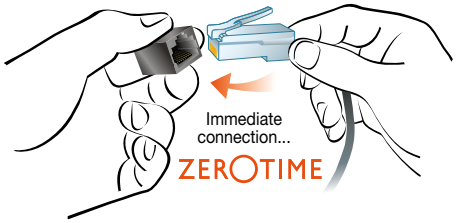
1st Immediate installation = **Click&Go ZEROTIME**

2nd It can be instantly programmed in several modes thanks to the micro DIP-SWITCHES = **MULTISELECT**

3rd It has a modular configuration that can be expanded in “cascade” for multiple interlocks of 2...4...8...12 doors, without limitations = **EXPANDER**

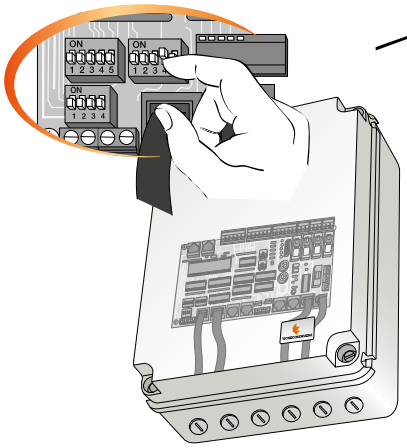
PERFECT FOR THE MANAGEMENT OF CLEAN ROOMS.

1st Click&Go



Insert the plug connector... snap it in place... that’s all you need for a perfectly working system...
Click&Go!

2nd MULTISELECT

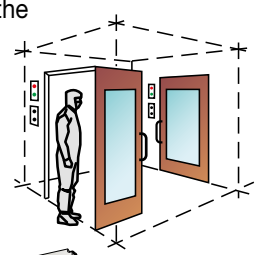


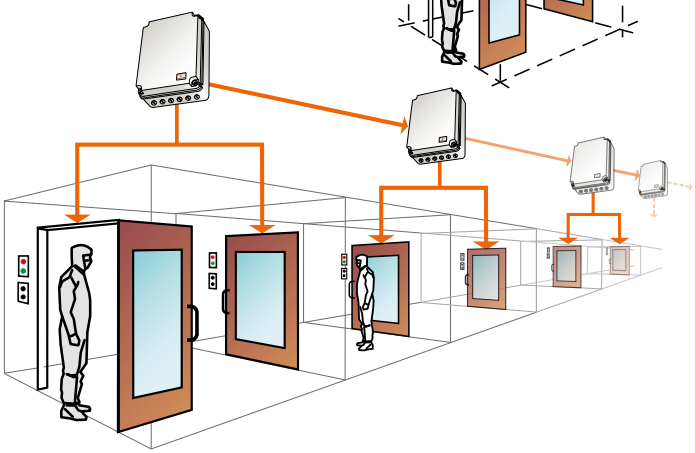
Microprocessor-based PHARMATRONIX with two channels

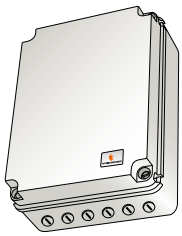
Tecnodimensione systems can be immediately adapted to all plants, depending on their configuration, both during commissioning and after start-up.
As it does not require changes to the control unit or the installation of new connection lines, it is the ideal solution to meet current and future customers’ needs.
It is in fact sufficient to use the DIP-SWTCHES integrated in the control unit to immediately select or change the default programs for each interlocking logic, configuration and timing.
Pharmatronix can be programmed in several modes because ...
...it’s **MULTISELECT!**

3rd EXPANDER

PHARMATRONIX is designed to allow the configuration in “cascade” of multiple interlocks of 2... 4... 8... 12 doors, without limitations. By connecting a Pharmatronix control unit with two channels to the subsequent ones, it is possible to flexibly set-up a multiple interlock, so that the opening of one door prevents the opening of all or part of the other doors and vice versa...
...it’s **EXPANDER!**







Click&GO ZEROTIME®

MICROPROCESSOR-BASED
PHARMATRONIX

With quick fitting 8 pole RJ45 plug to simplify installation and wiring

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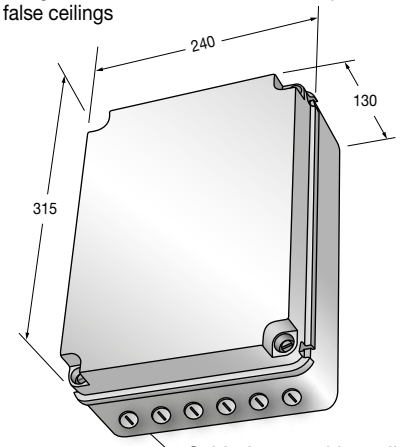
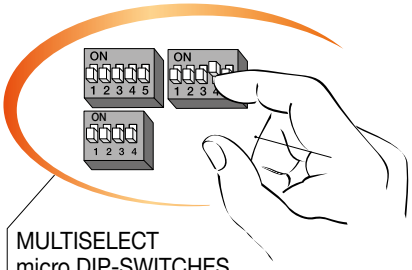
January 2024

TECNODIMENSIONE®

This unit is the "brains" of the system because it hosts all the interlocking logics and drives electric locks, Stop/Go displays and accessories (badge readers, keypads, etc.). The unit is also able to supply power to the whole system in case of emergency.

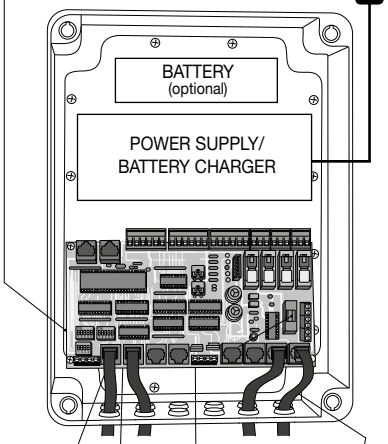
PHARMATRONIX control unit
designed to be wall mounted and/or placed on false ceilings

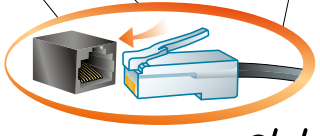




MULTISELECT micro DIP-SWITCHES for the immediate selection of default programs

230V - 50/60 Hz mains





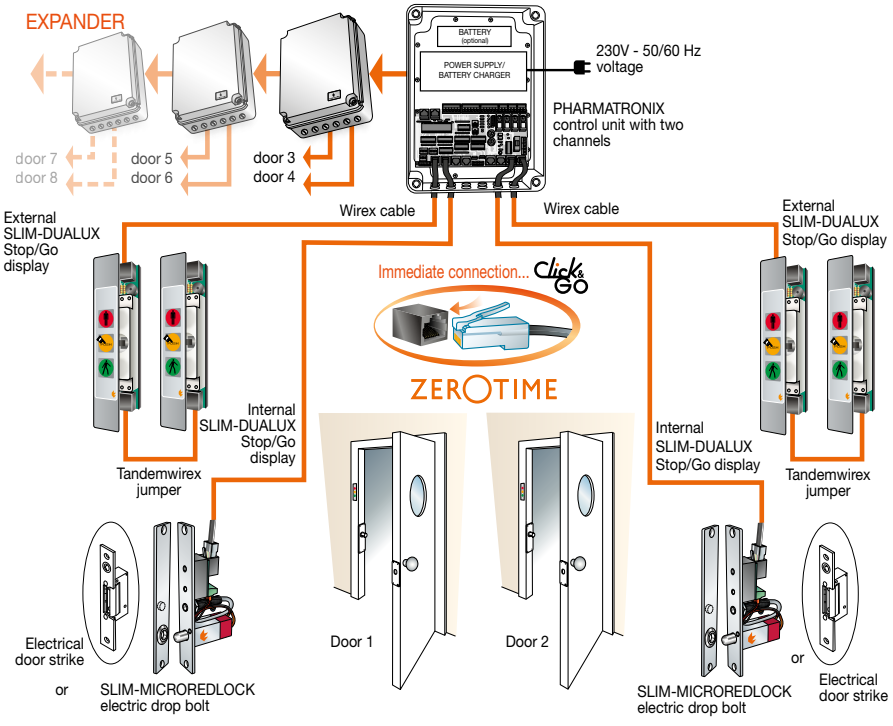
Immediate connection... Click&GO

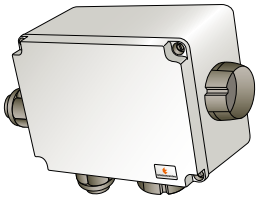
ZEROTIME

Ordering information		Q.ty
MODELS		**N°**
"Multiselect" control unit: multifunctional and programmable in several modes. The "Expander" model, that can be expanded by connecting in cascade 2 or more control units, enables to immediately create multiple interlocks of 2, 4, 6 and 8 doors, without limitations. **It is ideal for "clean rooms".**		
Models for 2 channels (12 VDC power supply)		
Microprocessor-based PHARMATRONIX control unit with 2 channels, designed to manage 2 interlocked doors with "Multiselect" logic and to be programmed in several modes. "Expander" model, expandable for multiple interlocks (see section Default programs). With "ClicK&Go" technology and RJ45 8-pole quick fitting female connecting plugs. Enclosed in an plastic impact-proof cabinet (240 x 315 x 130mm). Supplied with 12 Vdc/1,3A stabilised power supply (no battery charger). For 230 Vac/50 ÷ 60 Hz mains.	**034746A221W**	
Microprocessor based PHARMATRONIX control unit with two channels for the management of two doors. This model has the same characteristics of the one described above, but is supplied with an anti-blackout 12 Vdc/2, 7A power supply and battery charger. For 230 Vac/50 ÷ 60Hz mains.	**034746A222W**	
Models for 2 channels (24 VDC power supply)		
Microprocessor based PHARMATRONIX control unit with two channels for the management of two doors. This model has the same characteristics of the one described above, but is supplied with a 24 Vdc/1,5A power supply and battery charger for 230 Vac/50 ÷ 60 Hz mains.	**034746A422W**	
Models for 4 channels (12 VDC power supply)		
Microprocessor based PHARMATRONIX control unit for the management of 4 doors. This model has the same characteristics of the one described above, but is supplied enclosed in a "larger" plastic cabinet (380 x 300 x 120 mm) with 2 two-channel mother boards that are already interconnected. Supplied with 12 Vdc/2,7A power supply and battery charger for 230 Vac/50 ÷ 60 Hz mains.	**034746A242W**	
Models for 4 channels (24 VDC power supply)		
PHARMATRONIX control unit with 4 channels. This model has the same characteristics of the one described above, but is supplied with a 24 Vdc/1,5A power supply for 230 Vac/50 ÷ 60 Hz mains.	**034746A442W**	

DEFAULT PROGRAMS that can be immediately selected by means of the DIP-SWITCHES:
- Single/bidirectional interlock - "Green", "red" or mixed "green/red" interlocking logic - Interlocking of doors by "room", "corridor", mixed "room/corridor" configuration - Management of pass boxes and decontamination rooms without or with timing (adjustable) - Piloting of solenoid bolts and/or electrical door strikes fail-safe/fail-secure - Control of accesses by means of code entry keypads/badge readers - Emergency release (unlock) of single door and/or the general system - Delayed "timeout" alarm for single door - Immediate alarm for "2 contiguous doors" opened simultaneously - And much more on request.

EXAMPLE OF A TWO-DOOR SYSTEM INTERLOCKED WITH PHARMABLOCK CONTROL UNIT, PERTINENT DEVICES AND WIREX FAST CONNECTING CABLES WITH "CLICK&GO" TECHNOLOGY





UNIT WITH POWER RELAY
POWER-DRIVER

With quick fitting 8 pole RJ45 plug to simplify installation and wiring

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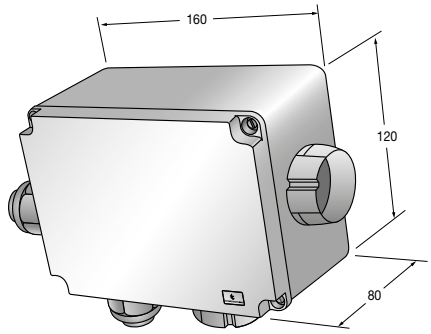
TECNODIMENSIONE®

This is the actuator unit designed to drive by means of a power control (depending on the logics and timings set by the Pharmatronix management unit) treatment and/or decontamination equipment like UV lamps, fans, etc., in addition to emergency devices like emergency lights, remote signals, etc.

	Ordering information MODELS		Q.ty N°
Control interface with 2 parallel and dedicated outputs, powered at 230 Vac/50-60 Hz, that can be directly connected to the Pharmatronix control unit by means of a Wirex structured cable using the "ClicK&Go" technology. **Ideal for possboxes in clean room equipment**			
Model with 2 control outputs			
POWER-DRIVER unit with "2 outputs" and 1 power relay with a total capacity of 16 A for 230 Vac power supplies that includes: - 1 meter "Wirex" cable (grey) with tear-resistant PG cable gland with a quick fitting 8-pole RJ45 end plug that be instantly connected to the PHARMATRONIX management unit using the "ClicK&Go" technology. - 1.5 meter long power cable with tear-resistant PG cable gland and a 16 A Euro plug (3 poles with phase/neutral/earth) to directly "input" the power from the 230 Vac/50-60 Hz power supply. Control output: - 2 output controls (timed and managed by the PHARMATRONIX unit), powered at 230 Vac/50-60 Hz, in parallel and dedicated configuration, for a total load of 16 A (that has to be divided between the 2 output sockets). These controls are made available by means of 2 universal female "output" sockets (for Schuco / USA / Euro at 16 A and/or 10 A) designed to be used with any power plug present on the equipment being driven (treatment plants, fans, UV lamps, etc.). Compact design in plastic shock proof box (dimensions 160x120x80 mm), for wall-mounting and/or installation on false ceiling.	**034746R**		
POWER-DRIVER with the same characteristics of the model above, but with "3 outputs", that is 3 parallel and dedicated power controls powered at 230 Vac/50-60 Hz, with a capacity of 16 A to be divided among the 3 corresponding outputs that represent universal female sockets.	**034746R3**		

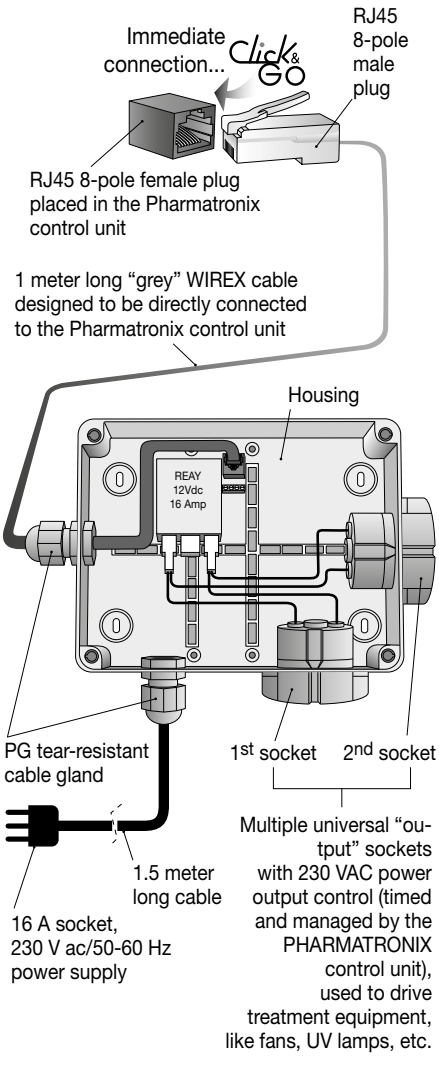
The POWER-DRIVER unit has a compact design as it is specifically enclosed in a box to prevent any direct contact with the internal power circuits. Even the terminals used for external connections are fitted with universal connecting sockets that comply with insulation standards to protect the plant installer from coming into contact with the power line during installation, use and maintenance.

POWER-DRIVER
unit with power relay
for wall-mounting and/or installation on false ceilings



(overall dimensions in mm)

POWER-DRIVER unit
(internal view)



EXAMPLE OF INSTANTANEOUS WIREX CONNECTION BETWEEN THE POWER DRIVER UNIT AND THE PHARMATRONIX CONTROL UNIT AND RELATED DEVICES