APOLLO SYSTEM

OPERATION GUIDE *H series*

Industrial
Radio Remote Controller

Oct 2009

FCC ID No.: PCSAPOLLO11282004 CE **English version**

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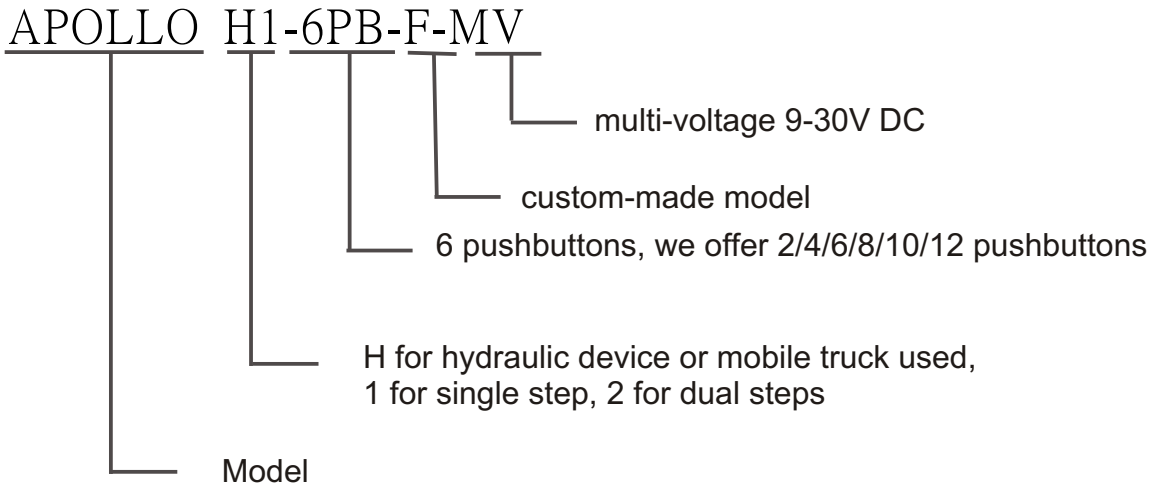


Note: The device complies with part 15 of FCC Rules. Operation is subject to the following two conditions:
(1)This device may not cause harmful interference , and
(2)This device must not accept any interference received, including interference that may cause undesired operation.
The FCC require the user to be notified that any changes or modifications made to this device that are not expressly approved by 3e may avoid the user's authority to operate the equipment.

To comply with FCC RF exposure requirement, this device and its antenna must no be co-located or operating in conjunction with any other antenna or transmitter.

INTRODUCTION

To satisfy various requests in remote controller, we are now finally researched a high quality, industrial grade remote controller --- APOLLO system. Provided from 4 to 12 push buttons as standard models, also provided up to 18 push buttons on demand, further on you can decide if taking with reserved functions or not, and really feel the convenience!

APOLLO system, a reliable, durable remote controller, which can be instead of the original wired control when the environment is too dangerous, something as electroplate field, steel factory, or the field with high temperature. Of course, it can also raise the producing efficiency!

Except the dust / water / oil proof casing, APOLLO can even resist strong shock, or the extreme weather. Our professionalism surpass the original design, improved possible faults, the section assembled push button parts save lots of pennies from unnecessary spend, which can also easily up-grade to different models.

Your equipment does not have to adapt the remote controller, but it can really become an accessory! Once the transmitter housing has to be renewed, you can just exchange the damaged section, but not the whole one. Only the reasonable spend can be accepted, in this point, we have considered thoroughly in APOLLO system.

Take instant fix holder, APOLLO receiver makes installation steps much faster and easier. The internal diagram / components scheme are hundred percent precision but not complex, easy to understand and repair, specially save time in periodic maintenance. Components have been placed into a tough control box, protection ups to IP65, contains dust / water / oil and ultraviolet, light weight, easy carry on, save energy and time in device installation.

MODELS OPTION

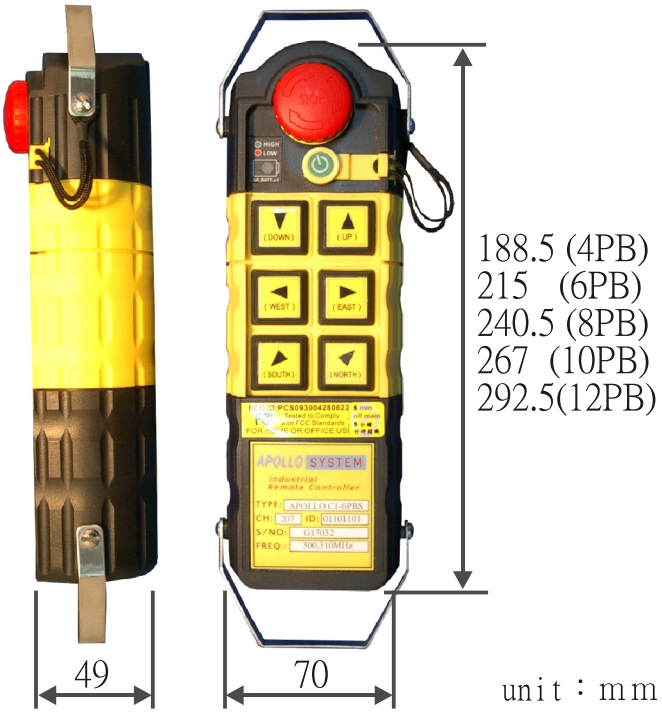
Model No	description
ONE STEP	
H1-2PB-MV	2 pushbuttons, w/ EMS stop button
H1-4PB-MV	4 pushbuttons, w/ EMS stop button
H1-6PB-MV	6 pushbuttons, w/ EMS stop button
H1-8PB-MV	8 pushbuttons, w/ EMS stop button
H1-10PB-MV	10 pushbuttons, w/ EMS stop button
H1-12PB-MV	12 pushbuttons, w/ EMS stop button
TWO STEPS	
H2-2PB-MV	2 pushbuttons, w/ EMS stop button
H2-4PB-MV	4 pushbuttons, w/ EMS stop button
H2-6PB-MV	6 pushbuttons, w/ EMS stop button
H2-8PB-MV	8 pushbuttons, w/ EMS stop button
H2-10PB-MV	10 pushbuttons, w/ EMS stop button
H2-12PB-MV	12 pushbuttons, w/ EMS stop button

※Two steps can be apllied as speeding up for heavy load

TRANSMITTER

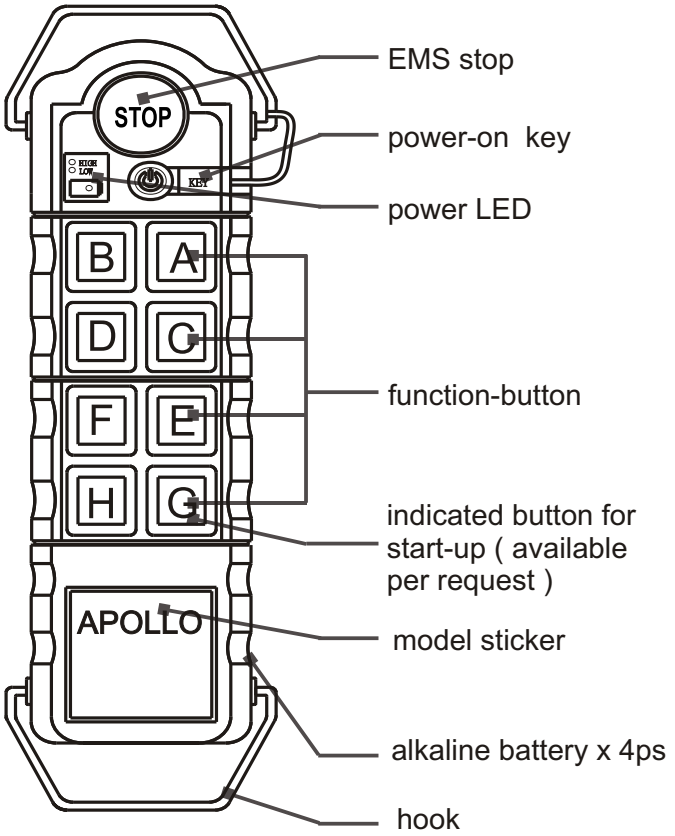
SPECIFICATION :

Frequency range: 433 MHz (20 channels)
868 MHz (20 channels)
Channel spacing: 60KHz
Transmitting power: < 10mW (10dBm)
Antenna: Internal type, impedance as 50Ω
Security codes: 256 sets
Operation temperature: 0˚C ~ +70˚C
Enclosure: IP65
Source voltage:
4xAA (1.5V)alkaline batteries
or nickel rechargeable batteries
Consumption: < 7mA
Size: 217x70x49 mm (H1-6PB-MV)
Weight: 515g (H1-6PBMV)



(fig. 1)

OPERATION STEPS:



(fig. 2)

HOW TO START UP THE APOLLO UNIT:

1. Power on receiver.
2. Insert the transmitter power-on key, turn on the mushroom .
3. Press any button and release to start-up receiver.

APOLLO SYSTEM-SPECIAL PUSHBUTTON TO START UP IF REQUESTED, STEPS AS FOLLOWS:

1. Power on receiver.
2. Insert the transmitter power-on key, turn on the mushroom .
3. Model with/ up 6 pushbuttons, simply press the right bottom button and release to start up the unit.

HOW TO TURN OFF THE APOLLO UNIT:

1. Press down the mushroom (at this moment, the internal MAIN contact will be OFF).
2. Pull out the transmitter power-on key.
3. Shut down the receiver.

STATUS INDICATOR :

APOLLO transmitter has a dual-color indicator (green*/red**) to show various status as follows:

Stand-by	green indicator light is blinking once every 4 sec. (mushroom is on)
operation	green indicator light is blinking once every 1 sec. (mushroom is on)
Power off	No indicator light is blinking. (mushroom is off)

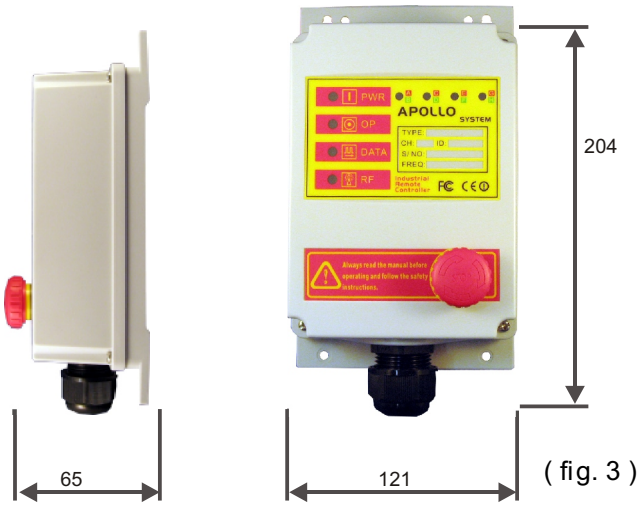
Green*: battery power sufficient.
Red : battery power low. Please re-new 4pcs of AA/UM-3 (1.5V) alkaline batteries or nickel rechargeable batteries immediately.**

RECEIVER

SPECIFICATION:

Frequency range: 868MHz (20 channels)
433MHz (20 channels)
Channel spacing: 60KHz
Antenna: Internal type, impedance as 50Ω
MOSFET: 5A, 30V DC
Operation temperature: -10˚C ~ +70˚C
Enclosure: IP67
Source voltage: 12V/24V DC
Consumption: < 12W
Size: 204x121x65 mm
Weight: 700g (excluding cable)

BOX 1.2



(fig. 3)

STATUS INDICATOR:

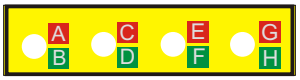
APOLLO receiver has a 4-LED indicator to show various status illustrated as below and to provide a simple judgement for operation & after -service.

lillustration	description
	Power LED Green when power on
	Operation LED GREEN when start-up. Light OFF when EMS stop pressed or power off
	Data LED OFF when TX is pressed (in operation). RED when button released RED LED blinking slowly when data not corresponded on TX & RX pr or interference RED LED blinking fast when ID codes unmatch
	Frequency LED RED when TX pressed (in operation) Light OFF when button released. RED LED blinking irregularly when interference incurred

Please **NOTE** that the DATA will **NOT** be lighted (off) when using its own transmitter , it means the transmitted signal has been received by receiver and decoded correctly.

FUNCTION-LED INDICATOR:

APOLLO receiver also has an 8 function-LED to indicate the corresponded MOSFET is ON when button A/B/C/D/E/F/G/H is pressed.

lillustration	description
	Function LED RED lighted when button A, C, E & G is pressed OFF when button released. GREEN lighted when button B,D,F & H is pressed, OFF when button released

INSTALLATION STEPS:

NECESSARY TOOLS:

It would be very easy to install APOLLO receiver, the necessary **tools** are as following:

Long nose pliers diagonal cutting pliers cross head screwdriver
Hexagonal head wrench multimeter Electric drill Cable and feeder

STEPS:

Fix the wired pendant in safe position.

1. Ensure the original wired control of crane is correct.

2. Ensure shut down the main power source of crane before installation.

3. Mount in a firmed site where the receiver can be seen easily by operator.

4. Keep away the mounted site from motors, relays, cables, high voltage wiring and devices, or the protrusion of building where crane moves. Select a firmed site without metal shielding around.

5. Do not install the other same channel remote controller within 50 meters.

6. Ensure the wiring layout correctly and safely.

7. Test each motion / function after installation, ensure transmitter output have the same motion as the original wired control.

8. Fix the wired pendant in safe position.

Caution

(a) Ensure the output contact as Main / A / B/ will not exceed 5A (see Wiring diagram after page 18).

(b) Please make sure to mount the receiver where it is easily reached the EMS stop according to EC machinery directive.

(c) Please check the EMS stop on receiver at least every week to keep the good condition and for longer life.

(d) Please double check the wiring diagram after receiver's installation, then turn the power on.

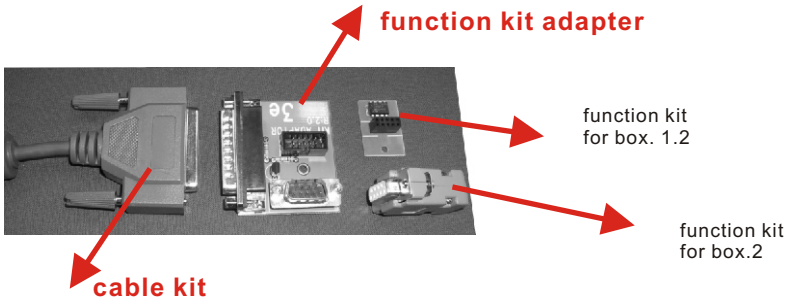
(fig. 4) (example for fix / install receiver)

FUNCTION SETTING

APOLLO system has complete setting software, which accepts different requests from customers. An extra Function Kit may be needed for custom-made settings. (See fig.5,6)

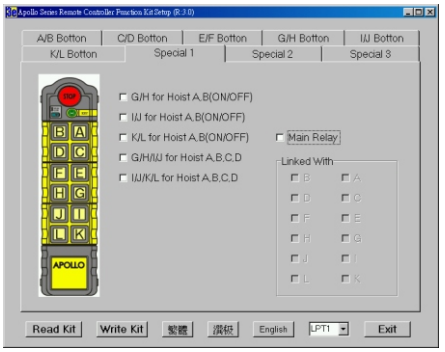
FUNCTION KIT:

1) The function setting program is available to operate under **Windows 2000 & XP version.**
2) The function kit has to extra plug in the JP3 (DB9 pin) on **RECEIVER** decoder (relay) board to work the function setting.
3) Operation steps:
   *Clip ' start ' in Windows 2000/ XP
   **Select ' program '
   ***Select ' Apollo '
   ****Clip ' project AP3 ' ....set up program starts now



(fig. 5)

software photo sample



(fig. 6)

Every set of motion (A/B, C/D, E/F, G/H, I/J, K/L) all can be set function per customer's Need. Function setting options are as the following:

1) **Interlock ex-work setting**, when pressing A and B simultaneously, no function output , this is for security reason.

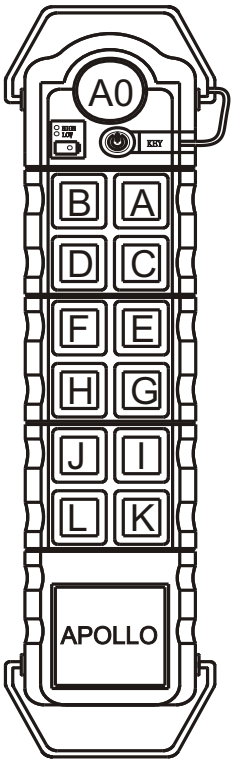
2) **Non-Interlock** For some occasions if the interlock is not necessary, just clip the ' non-interlock ' function.

3) **K13 main relay** is set for oil pump to be linked with each function (movement), this is also done ex-work already..

4) **For more setting functions required**, please review the ' function table '.

NOTE !!
Every set of motion (A/B, C/D, E/F, G/H, I/J, K/L) is interlocked to each other as factory setting. That means to press button A/B simultaneously , there is no function output for security reason...versa.

FUNCTION TABLE:



(fig. 7)

button	function	interlock	button	NON-interlock	A/B on/off	A/B/C/D on/off		main relay link (ID)
A0	EMS STOP*							
A	normal*	YES*	toggle	NO*	NO	NO		YES
B	normal*		toggle					YES
C	normal*	YES*	toggle	NO*	NO	NO		YES
D	normal*		toggle					YES
E	normal*	YES*	toggle	NO*	NO	NO		YES
F	normal*		toggle					YES
G	normal*	YES*	toggle	NO*	YES	YES	NO	YES
H	normal*		toggle					YES
I	normal*	YES*	toggle	NO*	YES		YES	YES
J	normal*		toggle					YES
K	normal*	YES*	toggle	NO*	YES	NO		YES
L	normal*		toggle					YES

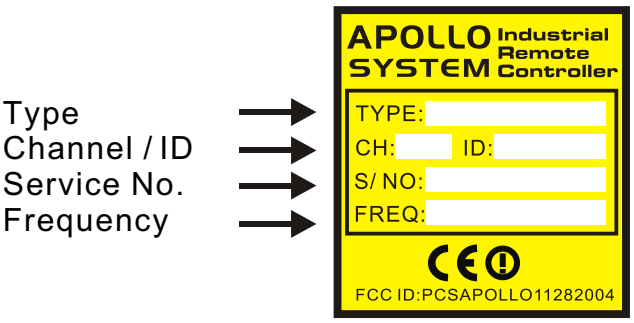
*set-up already ex-work.

PRECAUTION

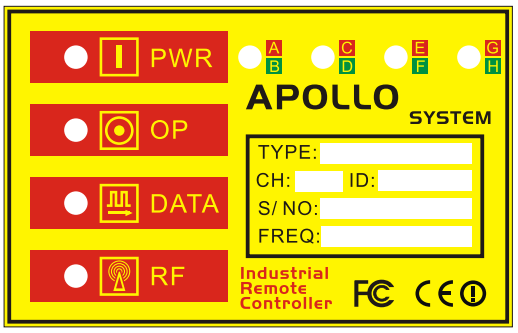
- For safety consideration, complete training can only be offered / authorized to the operator.
- Please read thoroughly the operation manual before using APOLLO system.
- Regular maintenance / testing can extend the components' life, malfunction will also be found prior.
- Before operating the transmitter please check by power-on key to ensure the battery power is sufficient. If not, please change a whole set of new batteries. For a long term period without operation we suggest you to take out of the batteries.
- Do NOT try to change or move the internal components without authorization, please contact your supplier, or the professional engineer who has the experience in industrial remote controller for maintenance / repairs.
- When the remote controller be struck by lightning, please stop operation and contact

ID LABEL

Every APOLLO system has its identification PC label, which defines the **device's type, ID, service number, frequency and channel**. For any inquiry please advise your supplier the service number for a faster solution.



(fig. 8) transmitter ID label



receiver ID label (fig. 9)

SPARE PARTS LIST

TRANSMITTER		RECEIVER	
spare parts	abbreviation	spare parts	abbreviation
Top casing (incl. EMS-stop button, Power-key, stainless steel hook)	TOC	Box 1.2 receiver casing for H1-2,4,6,8,10,12PB and H2-2,4,6,8,10,12PB used (incl. nylon cable glands, EMS stop,Rubber shock-proof nut, 2pcs of Instant firm Holder)	BOX 1.2
2 push buttons casing (incl. laser printed symbol & rubber cover)	2TH	Receiver High Frequency part	RFP
4 push buttons casing (incl. laser printed symbol & rubber cover)	4TH	H1-2/4PB-MV decoder & relay board	HDD41
Bottom casing (incl. battery case, Stainless steel hook)	BOC	H1-6PB-MV decoder & relay board	HDD61
Transmitter high frequency part	TFP	H1-8PB-MV decoder & relay board	HDD81
H1-4PB-MV encoder board	ED41	H1-10PB-MV decoder & relay board	HDD101
H1-6PB-MV encoder board	ED61	H1-12PB-MV decoder & relay board	HDD121
H1-8PB-MV encoder board	ED81	H2-2/4PB-MV decoder & relay board	HDD42
H1-10PB-MV encoder board	ED101	H21-6PB-MV decoder & relay board	HDD62
H1-12PB-MV encoder board	ED121	H2-8PB-MV decoder & relay board	HDD82
H2-2/4PB-MV encoder board	ED42	H2-10PB-MV decoder & relay board	HDD102
H2-6PB-MV encoder board	ED62	H2-12PB-MV decoder & relay board	HDD122

H2-8PB-MV encoder board	ED82	Cable 0.75mm2 x 8 (colored wires)	CAP08
H2-10PB-MV encoder board	ED102	Cable 0.5mm2 x 16	CAP16
H2-12PB-MV encoder board	ED122		
Nylon belt for transmitter	NB		
transmitter sleeve	TS		

TROUBLE SHOOTING

We have come across problems that are not associated with wireless remote control unit but are crane/hoist or the device is subjected to control. Therefore it is essential that before trouble shooting, the problem is identified to be relating the wireless remote control unit.

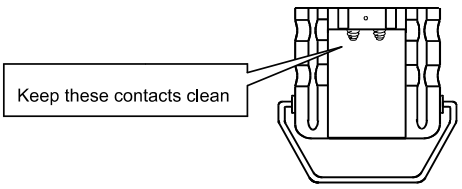
When malfunction occurs, please check APOLLO system per the following stating or the brief trouble shooting chart step by step, or contact your supplier if device still can not be operated normally.

IF: Press any push button in transmitter but there has no output, the indicator does not show....
Possibility: Check if the power-key has been inserted.

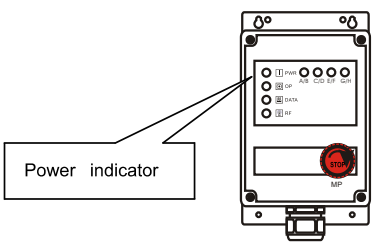
IF: The power-key has been inserted, but still has no output, the indicator also does not show...
Possibility: Check if the EMS-stop push button has been pressed, if so, turn to " on "
*Under the normal operation, EMS-stop push button shall **not** be pressed down.*

IF: The EMS-stop push button has been turned to " On " , the power-key is inserted, but still has no output, the indicator does not show either...
Possibility: Check if batteries have been inserted, or the power is sufficient. Renew a whole set of batteries and place with correct poles directions, and keep these contacts clean. (See Fig 10)

Press push button and see if green indicator is responded to blink as 1 time per sec. If no, contact your supplier immediately.



(fig. 10)



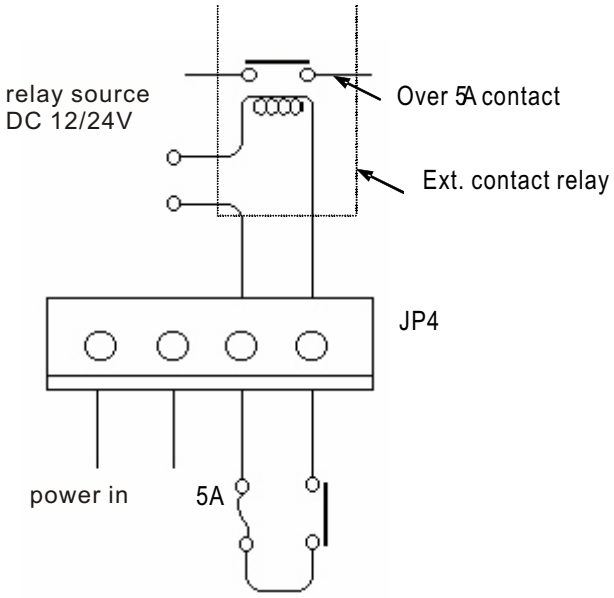
(fig. 11)

IF: Power on the receiver, but power indicator (see fig. 11) does not light...
Possibility: Power has not been sent to receiver. Check if F1 fuse is burn and renew a 0.5A fuse.*

IF: Replaced a new 0.5A fuse, but still be burn after power on...
Possibility: Receiver's internal circuit has some problems. Please contact your supplier.

IF: F2* fuse has not been burn...
Possibility: The power input has some problems. Check if the input voltage is correct, if the input voltage has no problem, find out the reason of abnormal voltage, or contact your supplier.

IF: The indicator of output Main contact has light, but its relay has no output... Possibility: The fuse of Main contact, F2 is broken. Renew another 5A fuse.



(fig. 12)

F1: power fuse (0.5A)*
F2: protection fuse (5A)*

Caution

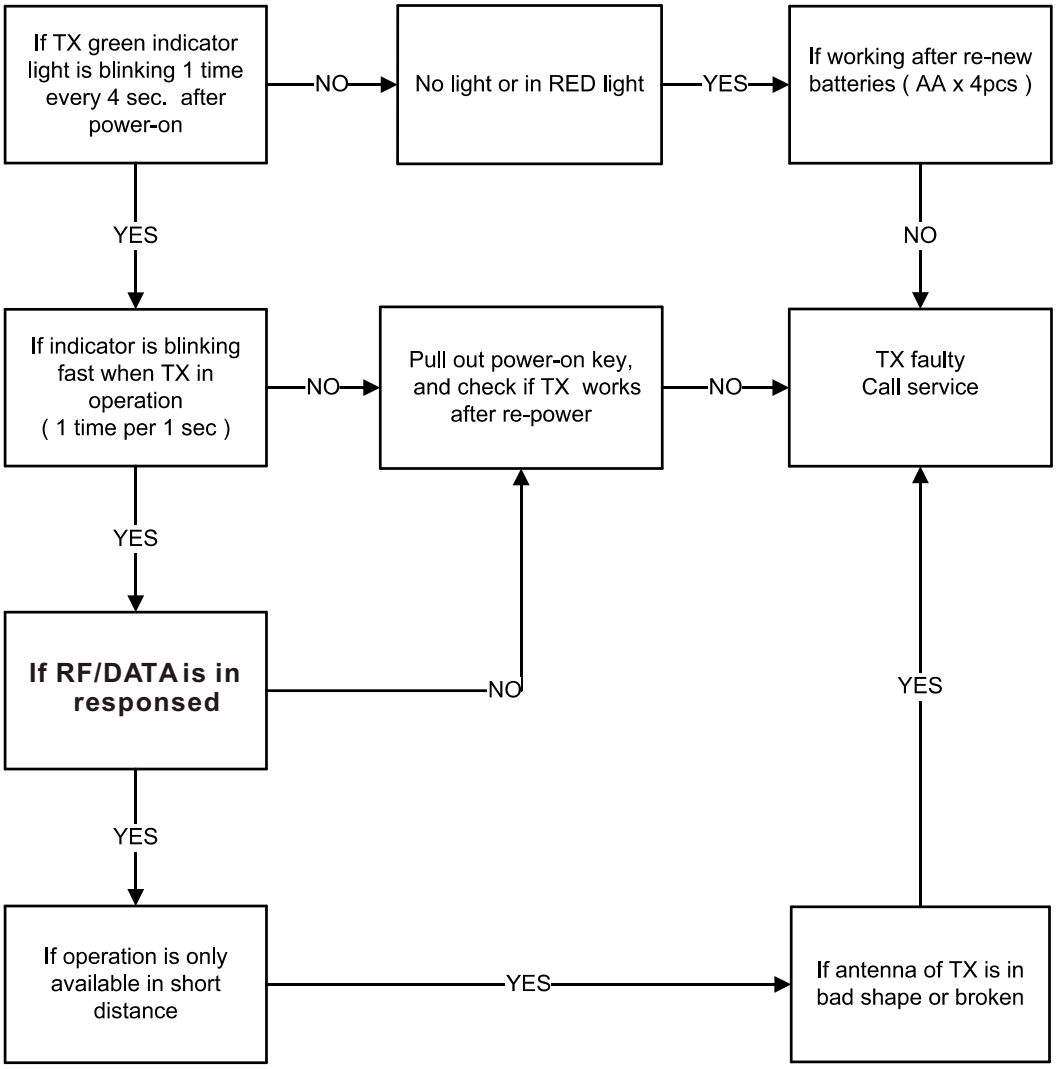
Every fuse be taken shall not over 5A, if larger output contact current is requested, use another larger amp relay to control its relay. (see left diagram)

For example, if a fuse which over 5A be taken, it may cause Main output contact be melt as overheat, and can not break, this will cost much more in repairing.

Please do follow the trouble-shooting steps, or we shall have no direct/indirect duty for any of your property loss!

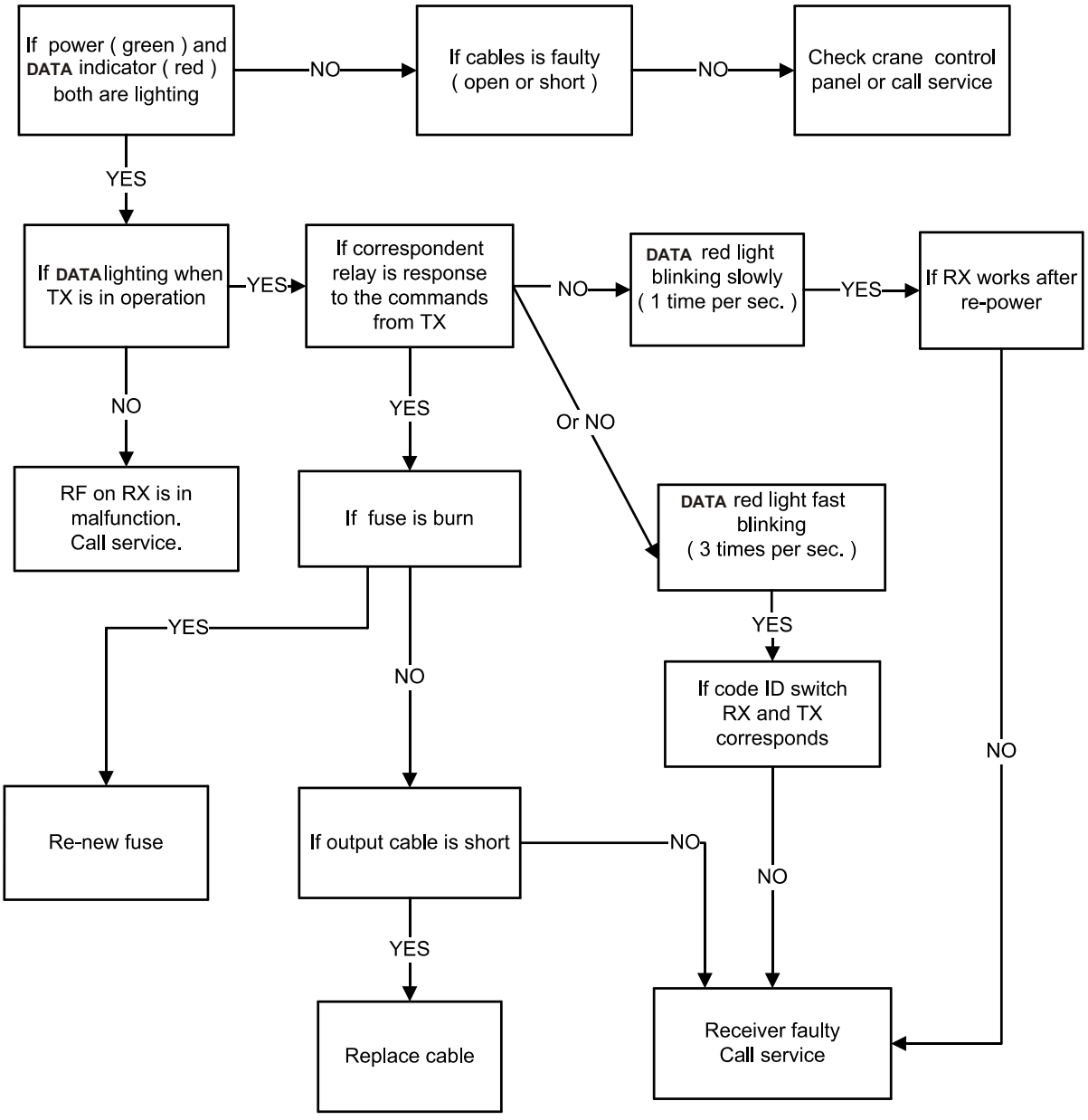
Apollo System- Transmitter (TX)
General trouble shooting

NOTE:
Please make certain the following status before trouble shooting.
(1) The hoist/crane or device is subject to control works
(2) The TX outlook is in good condition without any leakage
(3) Receiver works.



Apollo System- Receiver (RX)
General trouble shooting

NOTE:
Please make certain the following status before trouble shooting:
(1) The crane or device being subject to control works.
(2) The RX outlook is in good condition without any leakage
(3) Transmitter works.

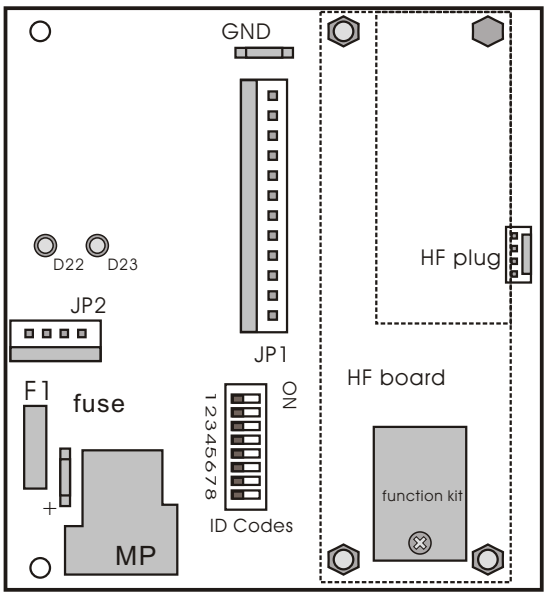


APOLLO (H series)
INSTALLATION WIRING DIAGRAM

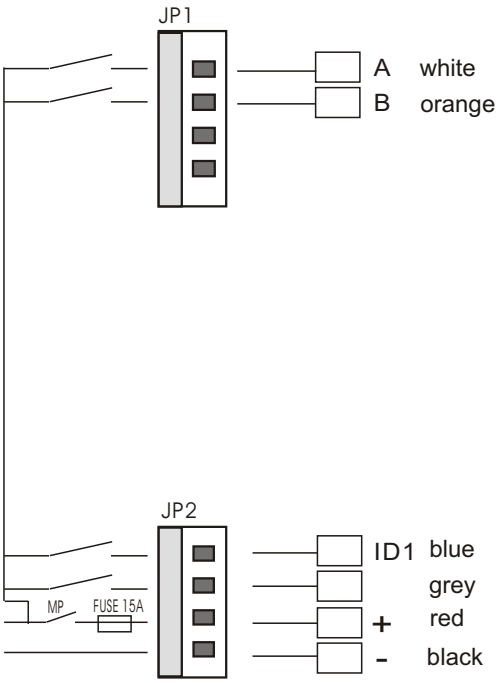
The models listed are standard only,
the custom-made design is available

APOLLO H1-2PB-MV Installation Wiring Diagram

encoder board



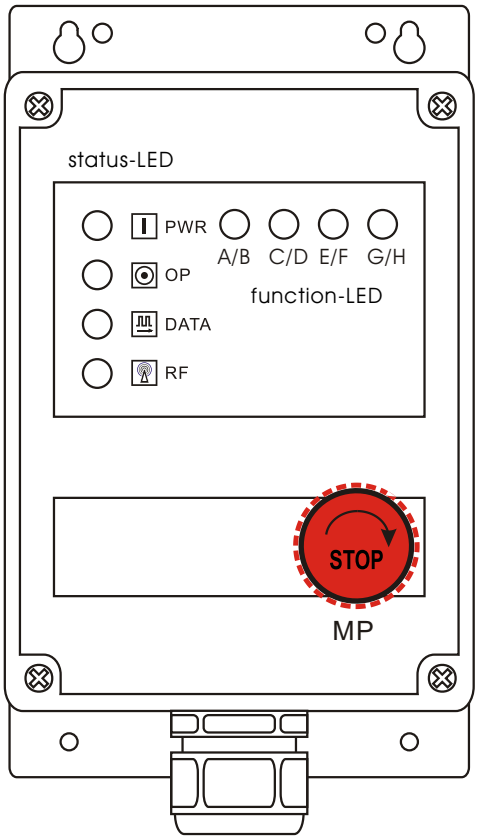
Internal wiring



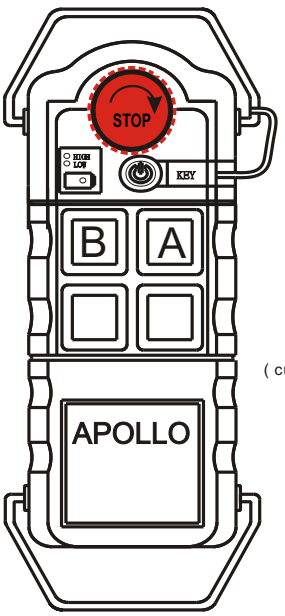
Features:

1. ID1 main relay is set for oil pump to be linked with each movement.
2. Furnished with control cable 2M long.
3. Wrecker button legend is available on demand.
4. Each set of motion (ex.K1/K2) is set with interlock ex-work.

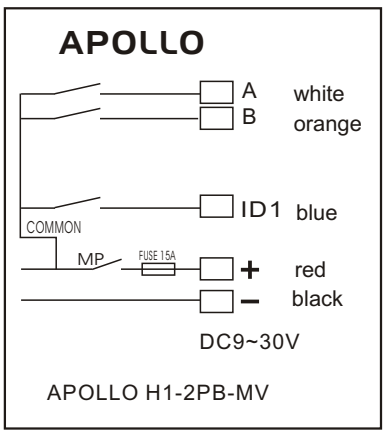
receiver



transmitter

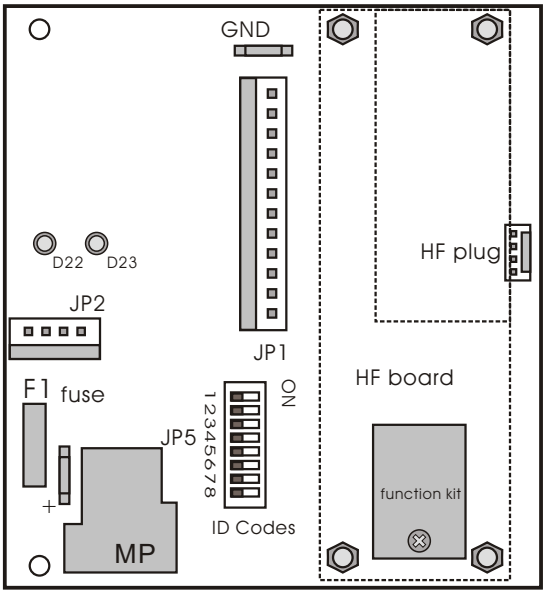


button legend
(custom-made on demand)

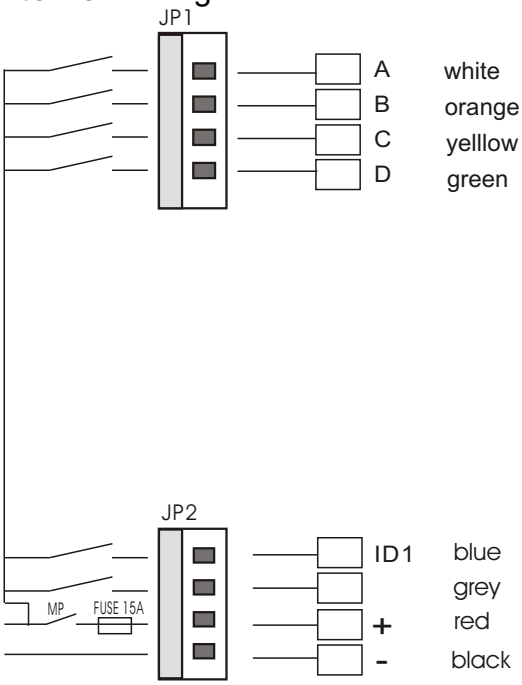


APOLLO H1-4PB-MV Installation Wiring Diagram

Encoder Board



Internal wiring



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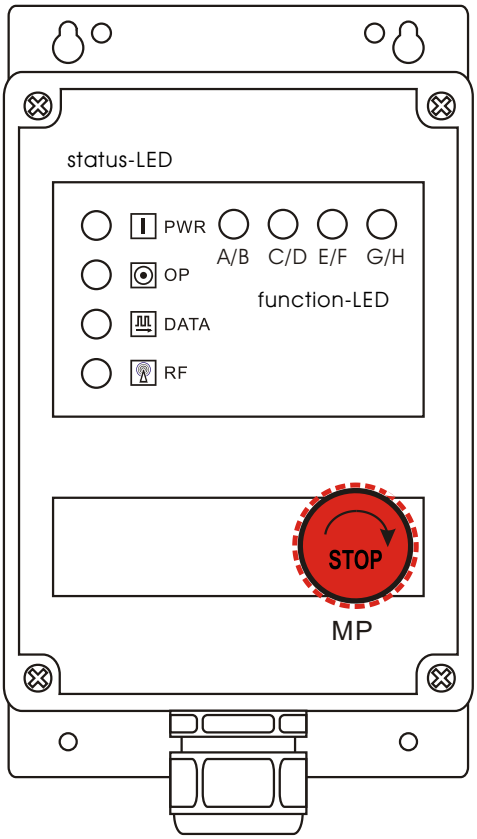
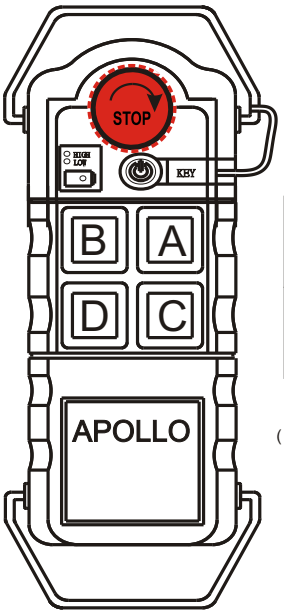
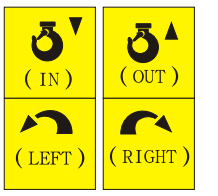
receiver

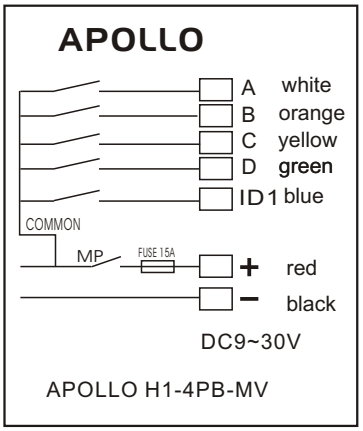


transmitter



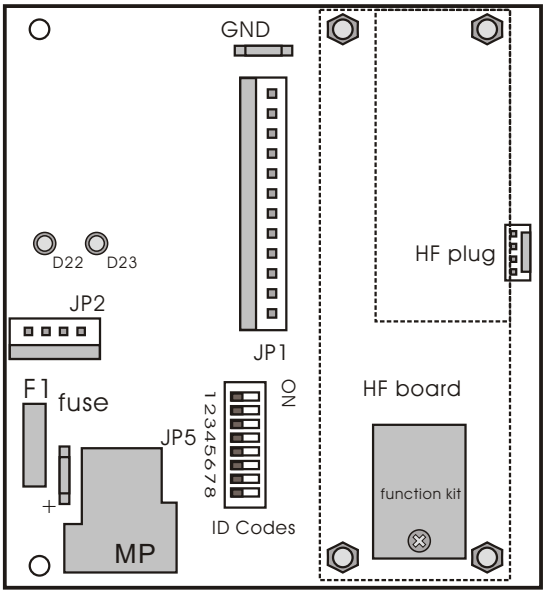


button legend
(custom-made on demand)

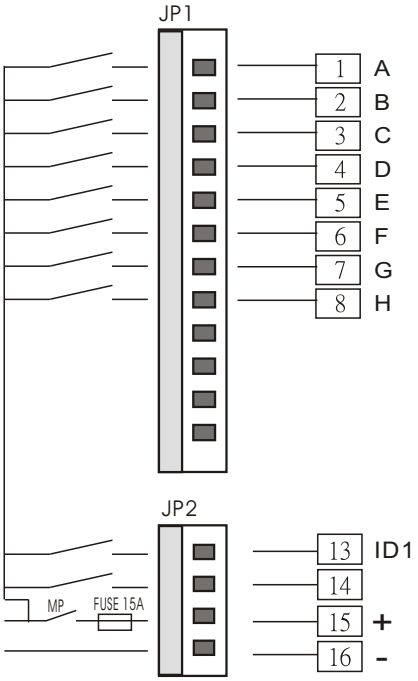


APOLLO H1-6PB-MV Installation Wiring Diagram

Encoder Board



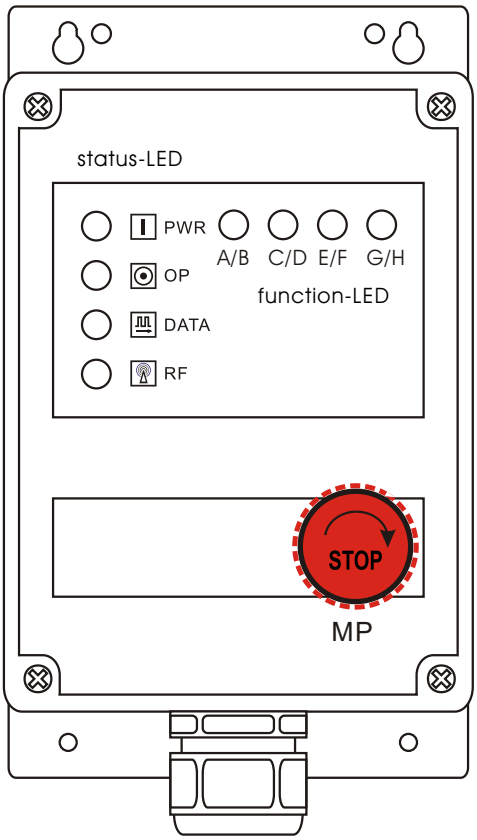
Internal wiring



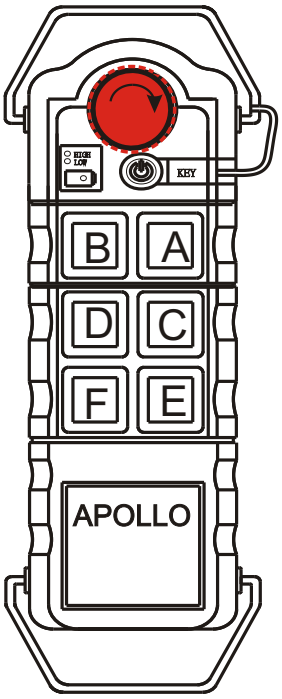
Features:

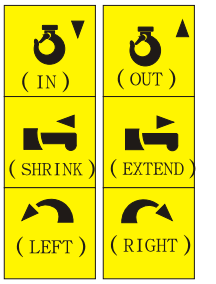
1. ID1 main relay is set for oil pump to be linked with each movement.
2. Furnished with control cable 2M long.
3. Wrecker button legend is available on demand.
4. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

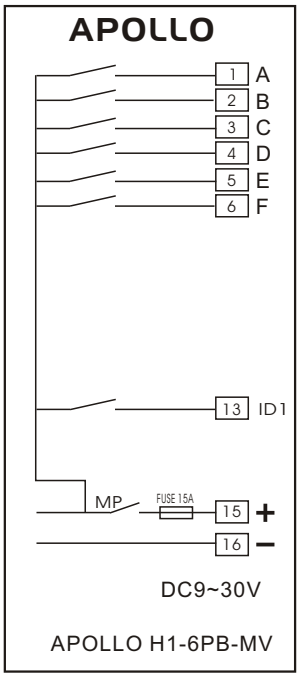


transmitter



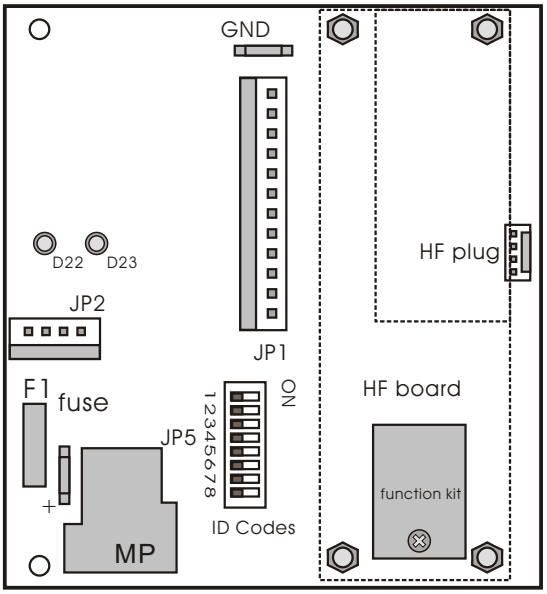


button legend
(custom-made on demand)

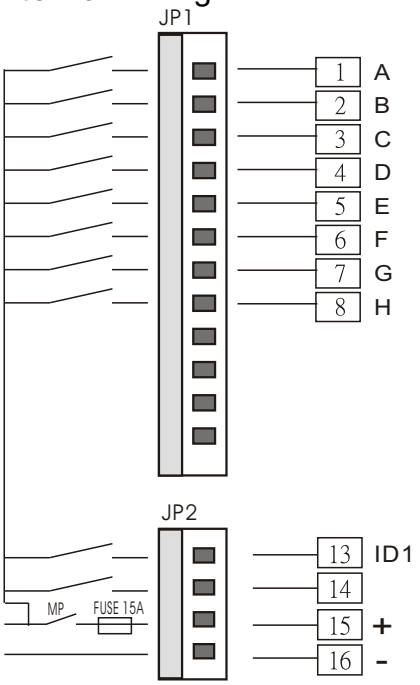


APOLLO H1-8PB-MV Installation Wiring Diagram

Encoder Board



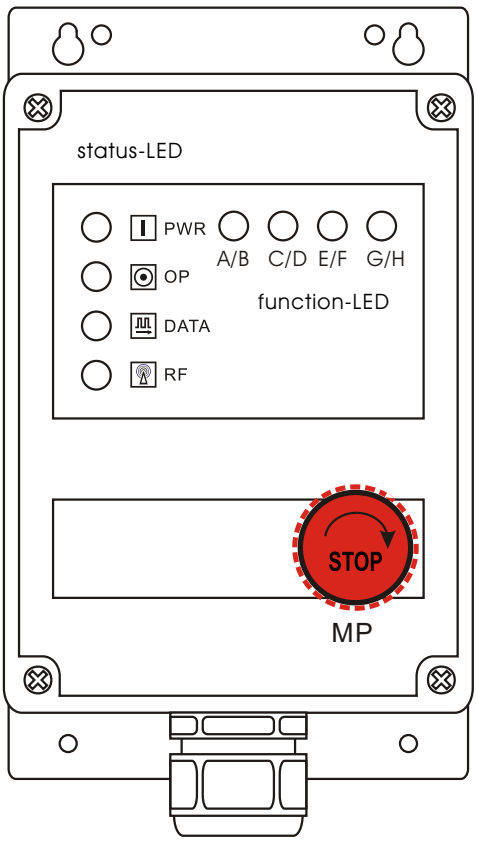
Internal wiring



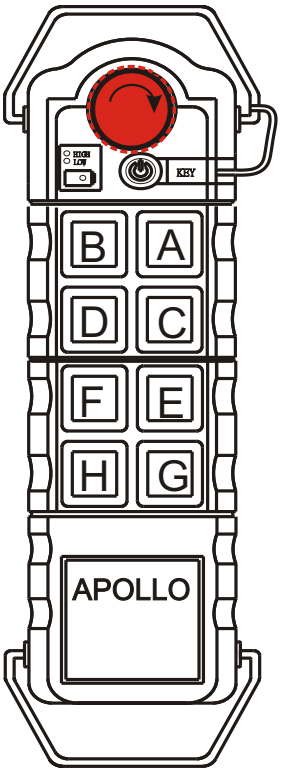
Features:

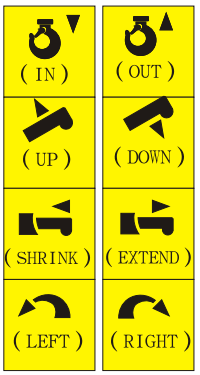
1. ID1 main relay is set for oil pump to be linked with each movement.
2. Furnished with control cable 2M long.
3. Wrecker button legend is available on demand.
4. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

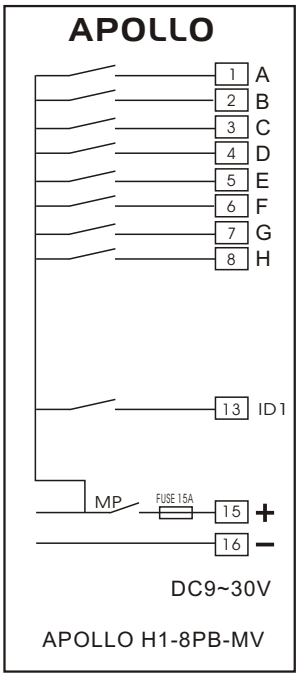


transmitter



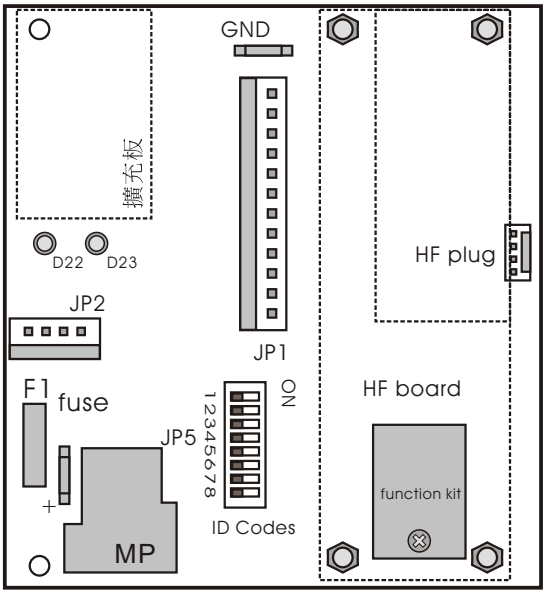


button legend
(custom-made on demand)

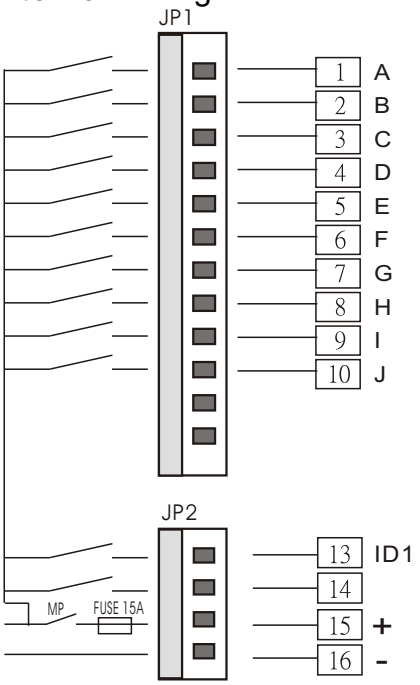


APOLLO H1-10PB-MV Installation Wiring Diagram

Encoder Board



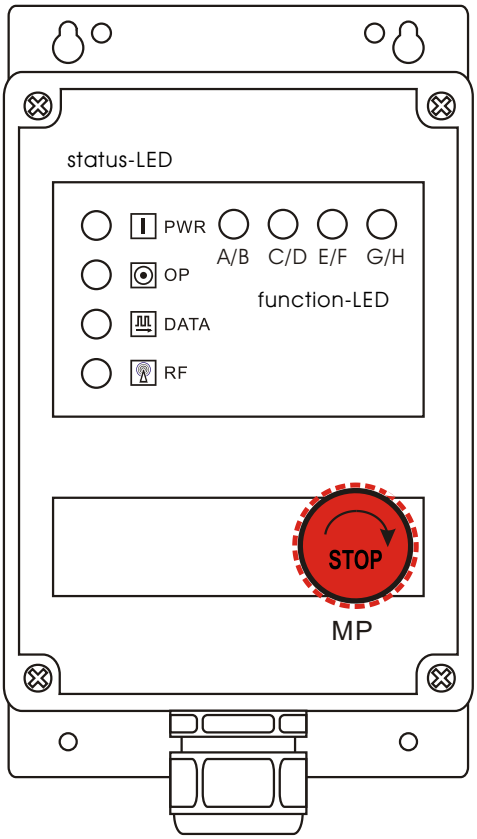
Internal wiring



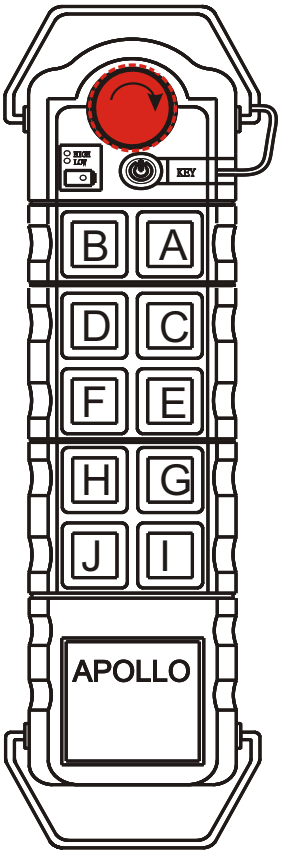
Features:

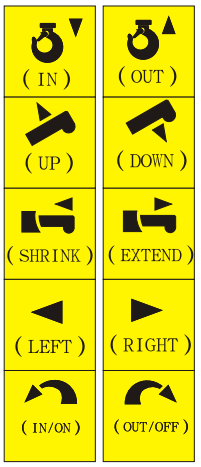
1. ID1 main relay is set for oil pump to be linked with each movement.
2. Furnished with control cable 2M long.
3. Wrecker button legend is available on demand.
4. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

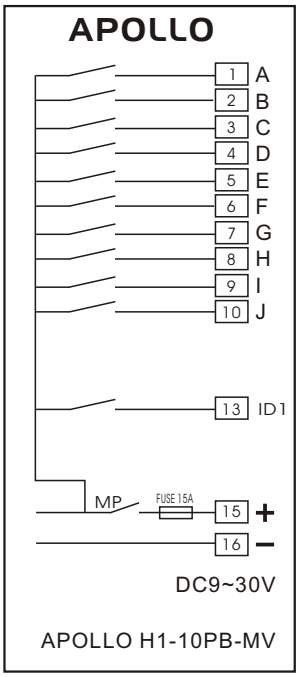


transmitter



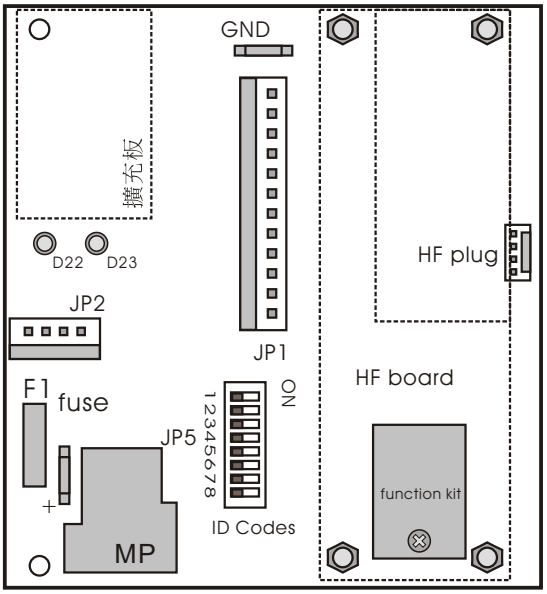


button legend
(custom-made on demand)

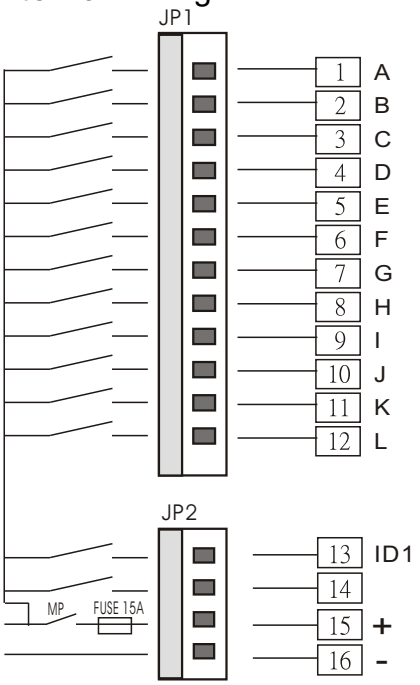


APOLLO H1-12PB-MV Installation Wiring Diagram

Encoder Board



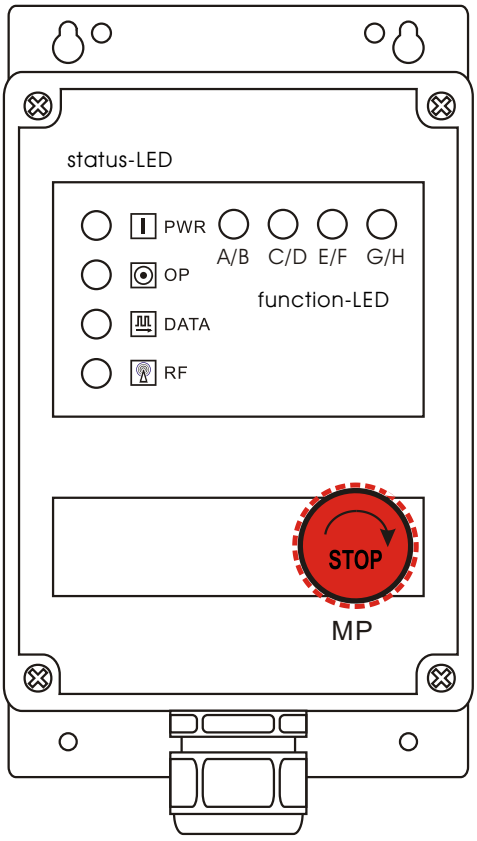
Internal wiring



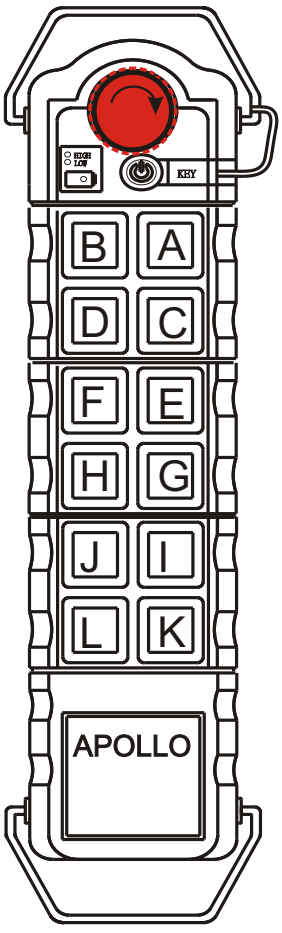
Features:

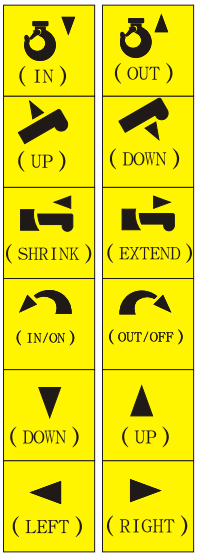
1. ID1 is set for oil pump to be linked with each movement.
2. Furnished with control cable 2M long.
3. Wrecker button legend is available on demand.
4. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

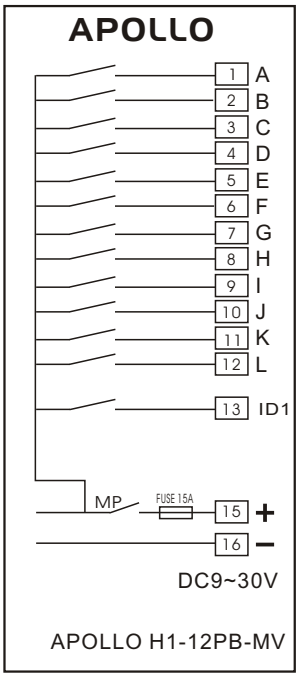


transmitter



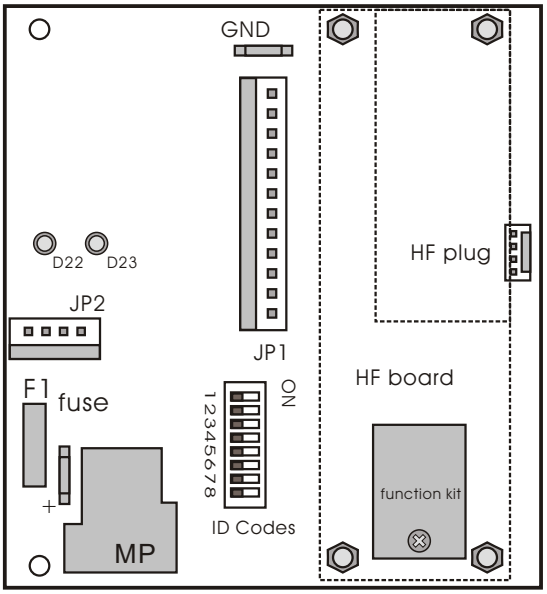


button legend
(custom-made on demand)

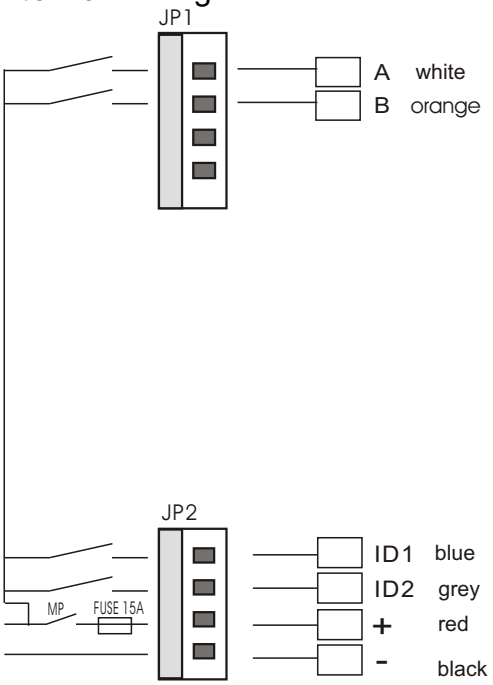


APOLLO H2-2PB-MV Installation Wiring Diagram

Encoder Board



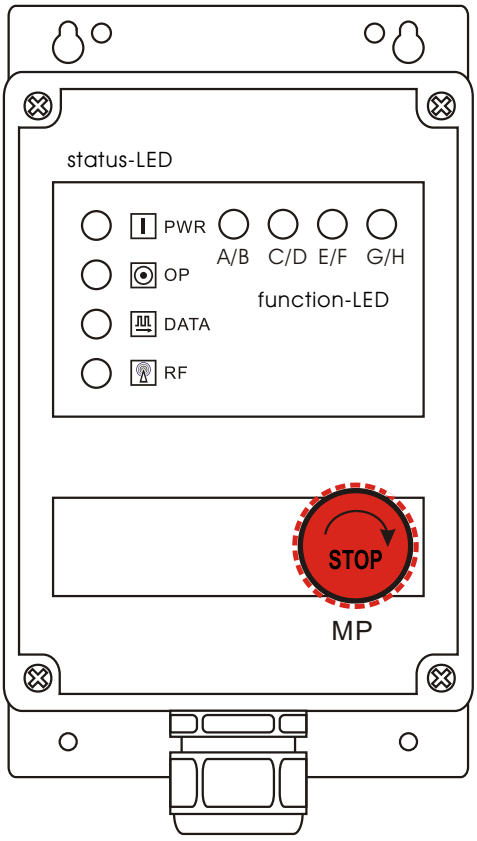
Internal wiring



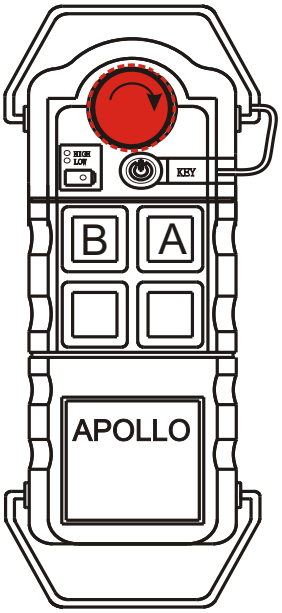
Features:

1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

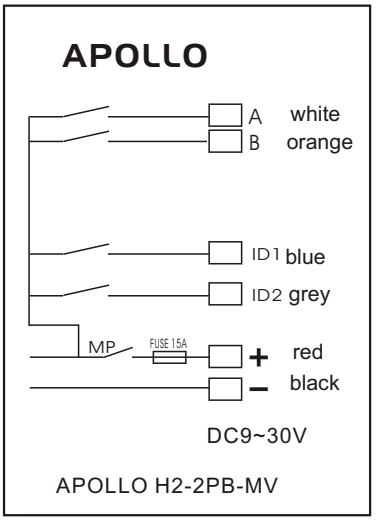
receiver



transmitter

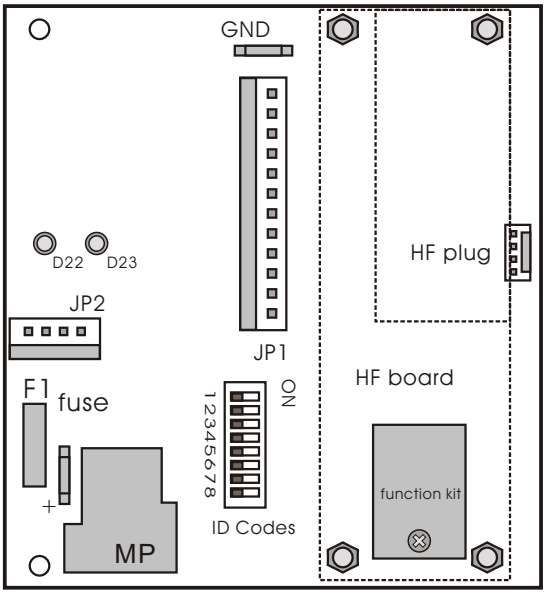


button legend
(custom-made on demand)

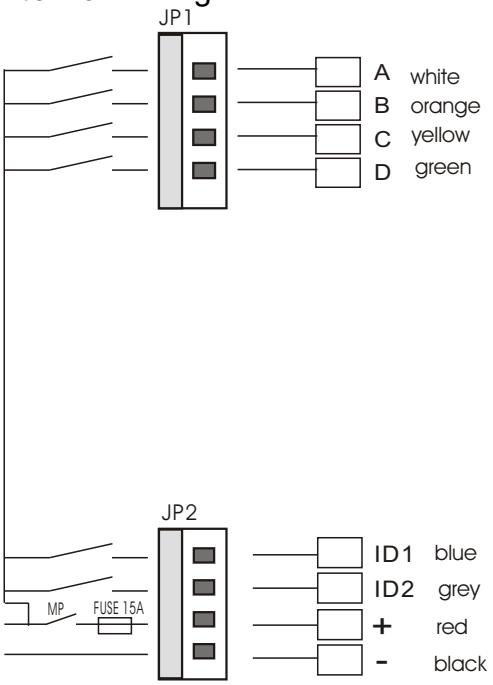


APOLLO H2-4PB-MV Installation Wiring Diagram

Encoder Board



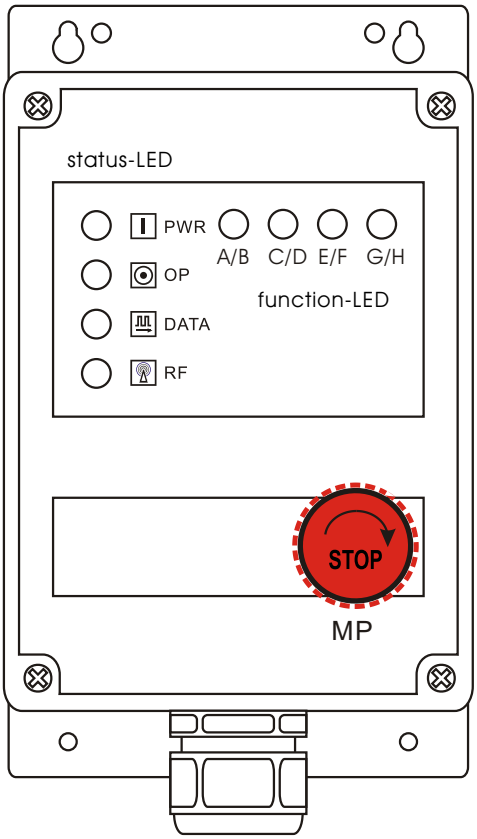
Internal wiring



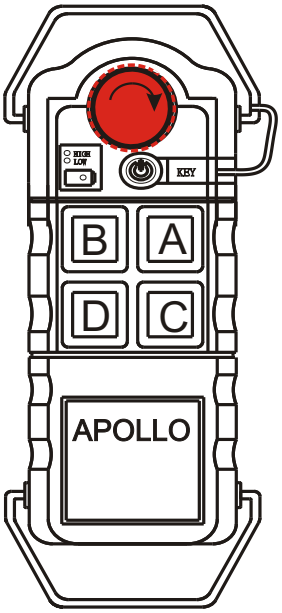
Features:

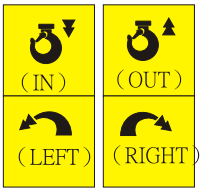
1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

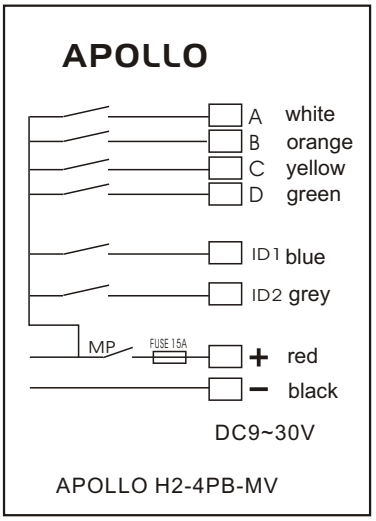


transmitter



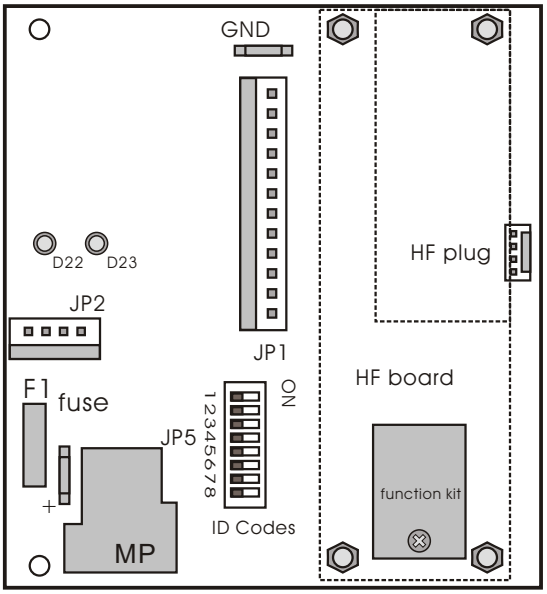


button legend
(custom-made on demand)

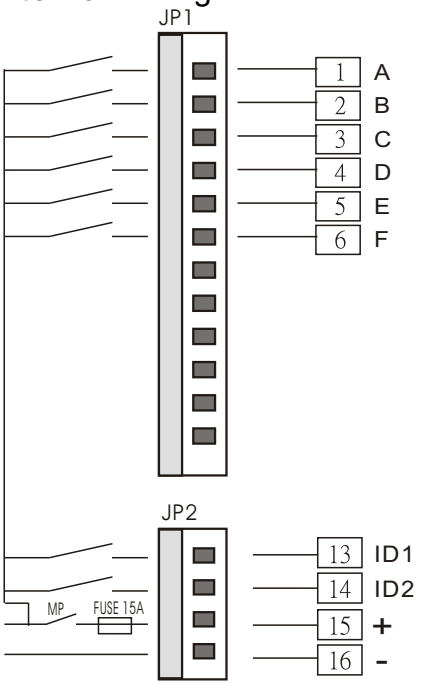


APOLLO H2-6PB-MV Installation Wiring Diagram

Encoder Board



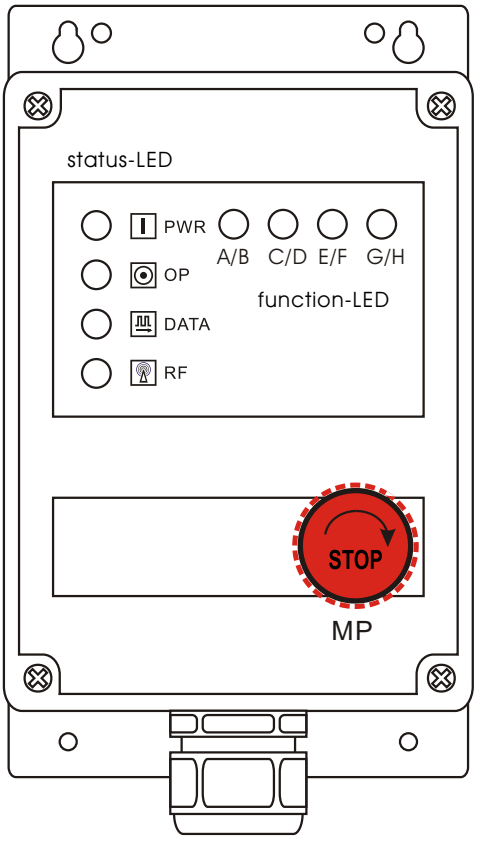
Internal wiring



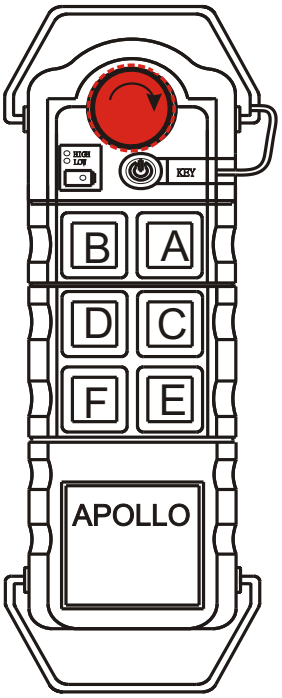
Features:

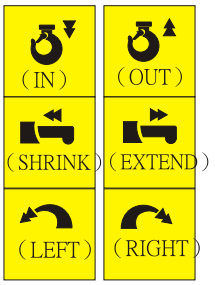
1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

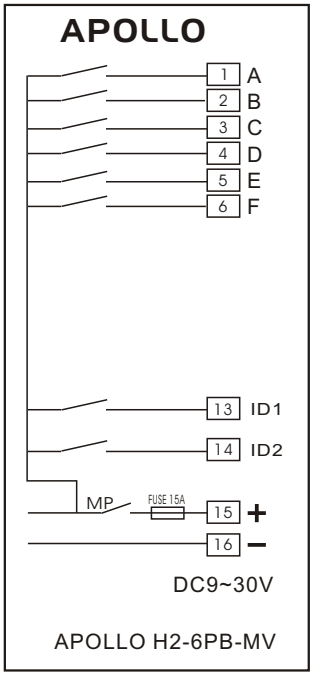


transmitter



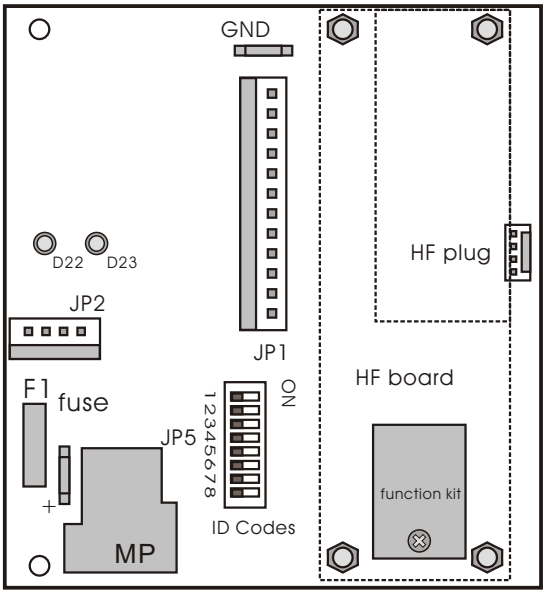


button legend
(custom-made on demand)

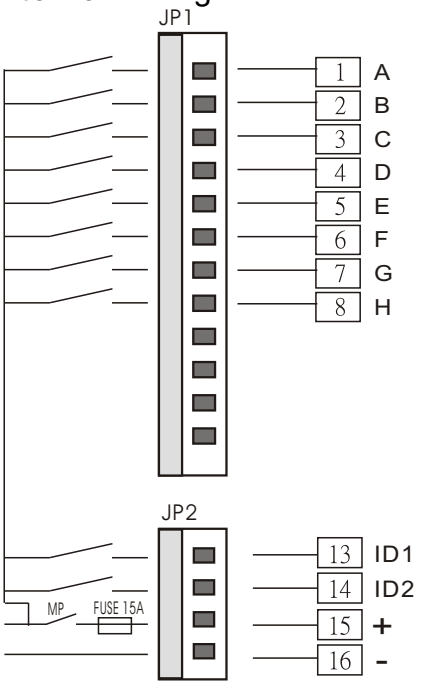


APOLLO H2-8PB-MV Installation Wiring Diagram

Encoder Board



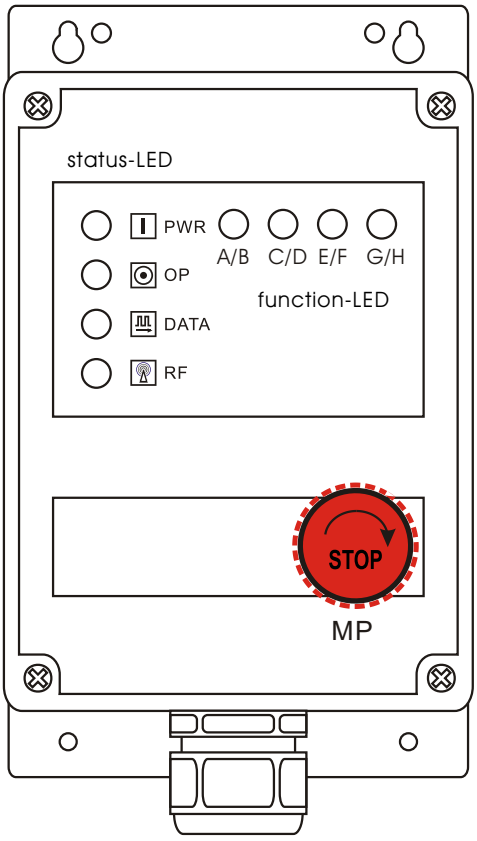
Internal wiring



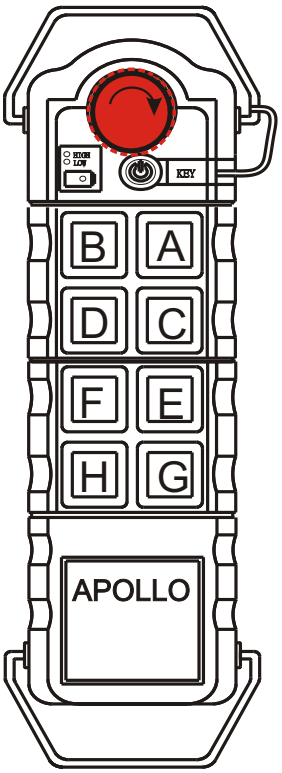
Features:

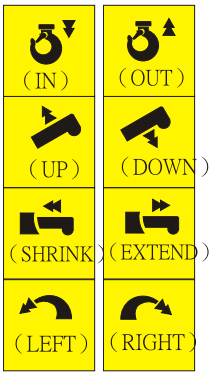
1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

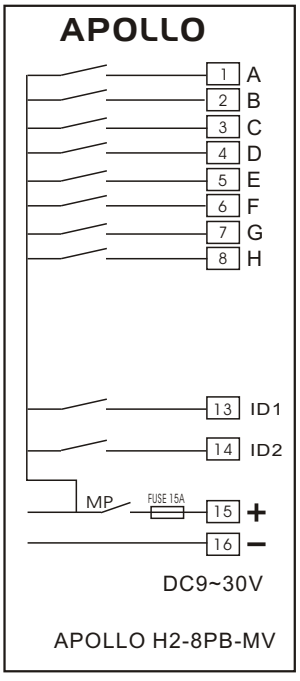


transmitter



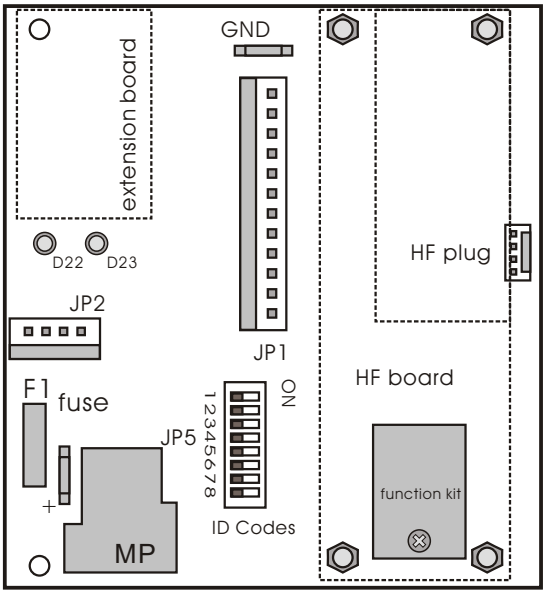


button legend
(custom-made on demand)

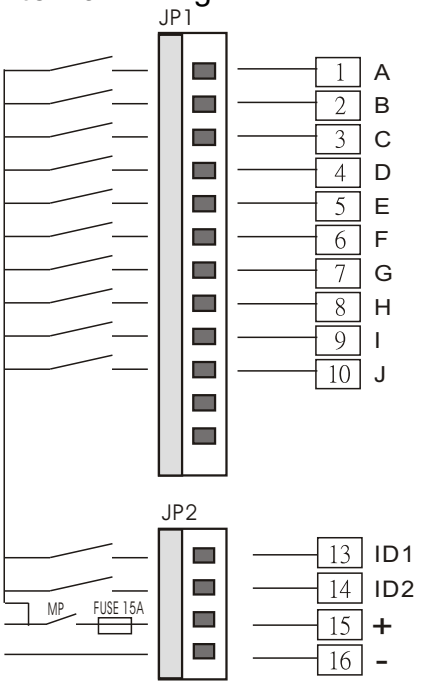


APOLLO H2-10PB-MV Installation Wiring Diagram

Encoder Board



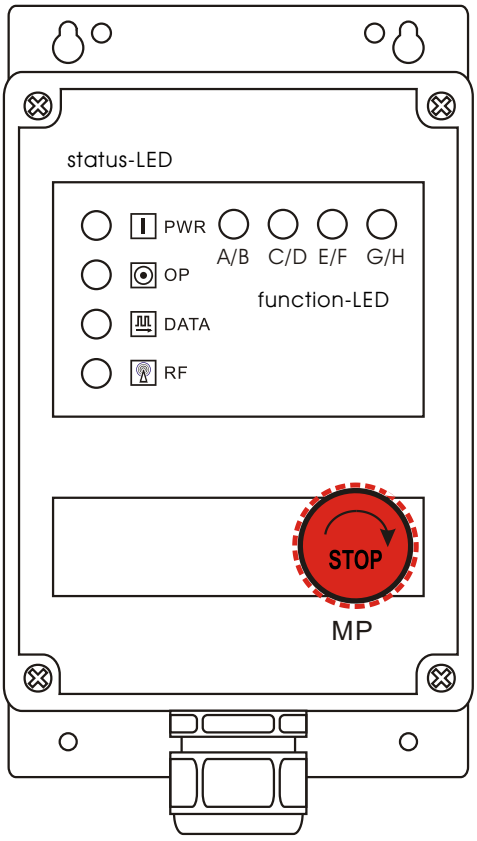
Internal wiring



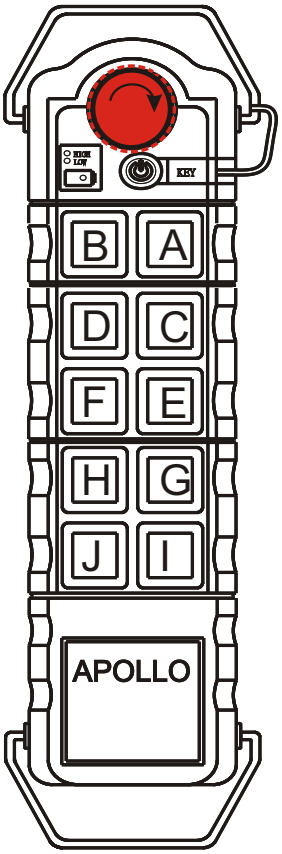
Features:

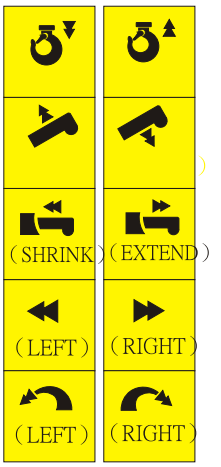
1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

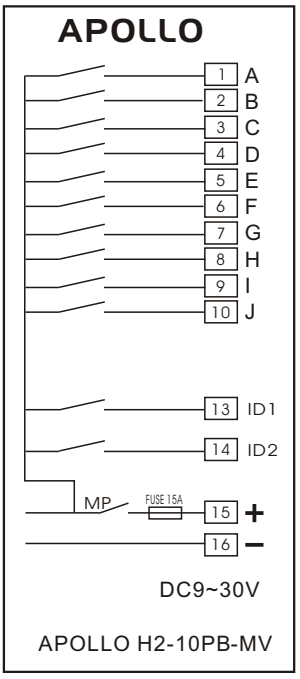


transmitter



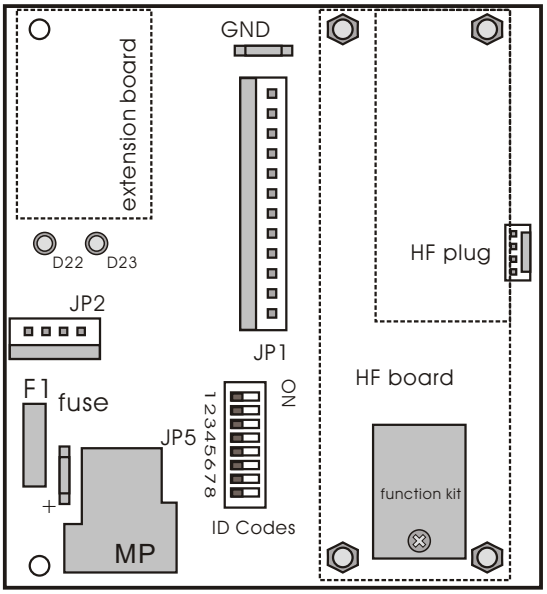


button legend
(custom-made on demand)

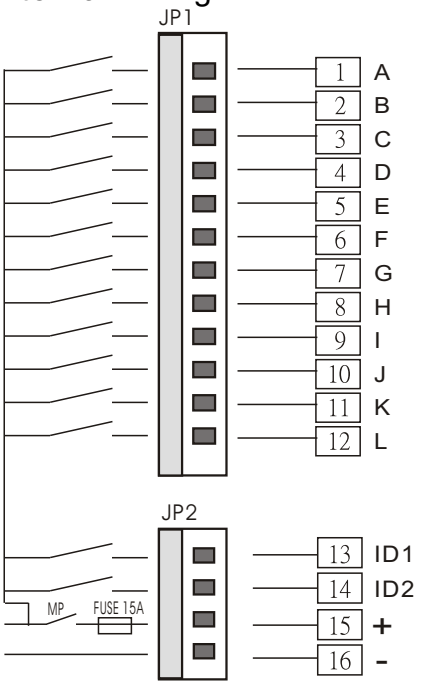


APOLLO H2-12PB-MV Installation Wiring Diagram

Encoder Board



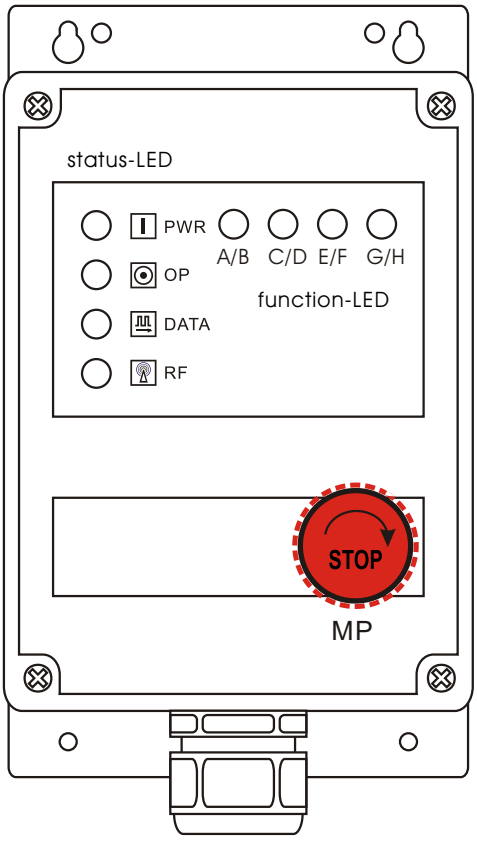
Internal wiring



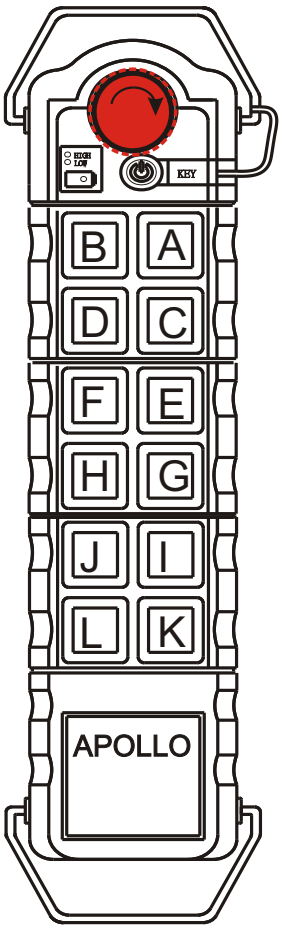
Features:

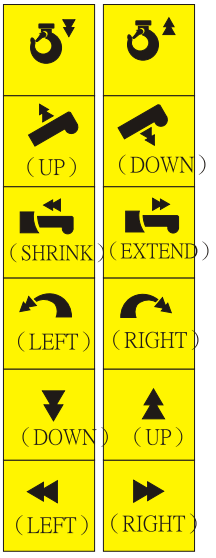
1. ID1 is set for oil pump to be linked with each movement.
2. ID2 is set up for speed up.
3. Furnished with control cable 2M long.
4. Wrecker button legend is available on demand.
5. Each set of motion (ex.K1/K2) is set with interlock ex-work.

receiver

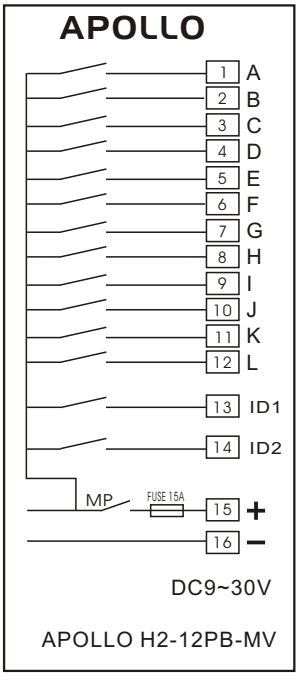


transmitter





button legend
(custom-made on demand)



LIMITED ONE YEAR WARRANTY

The equipment is warranted for one year from date of purchase against defects in materials or workmanship provided it was purchased from 3-Elite or authorized dealer.

This warranty does not cover equipment which has been abused or damaged by careless handling or shipping, OR damaged by nature disaster such as earthquake, typhoon etc.

The careless handling including self-change components, antenna, voltage; or circuits, and switches increased would be deemed as end of warranty, user should cover the repairing fee.

Should any defect develop, we will, at our option, repair or replace any defective parts without charge for either parts or labour. If we cannot correct the defect in your equipment, we will replace it at no charge with a new one. We will pay for the cost of returning your merchandise to you.

This warranty applies only to items returned to us, shipping costs prepaid, within one year from the date of purchase.

STANDARD ACCESSORY

- ☐ transmitter x 1
- ☐ receiver x 1
- ☐ handbook x 1
- ☐ screw x 4
- ☐ transmitter sleeve x 2
- ☐ shoulder strap x 1