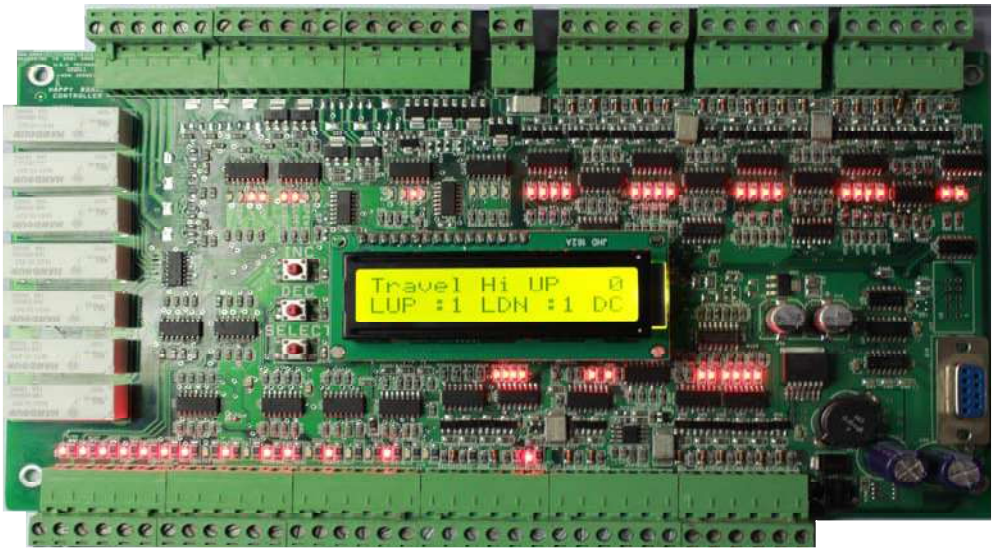
SMARTEC Technologies

Happy Board Controller

Arabic User Manual

HV3211

Version:8.1p



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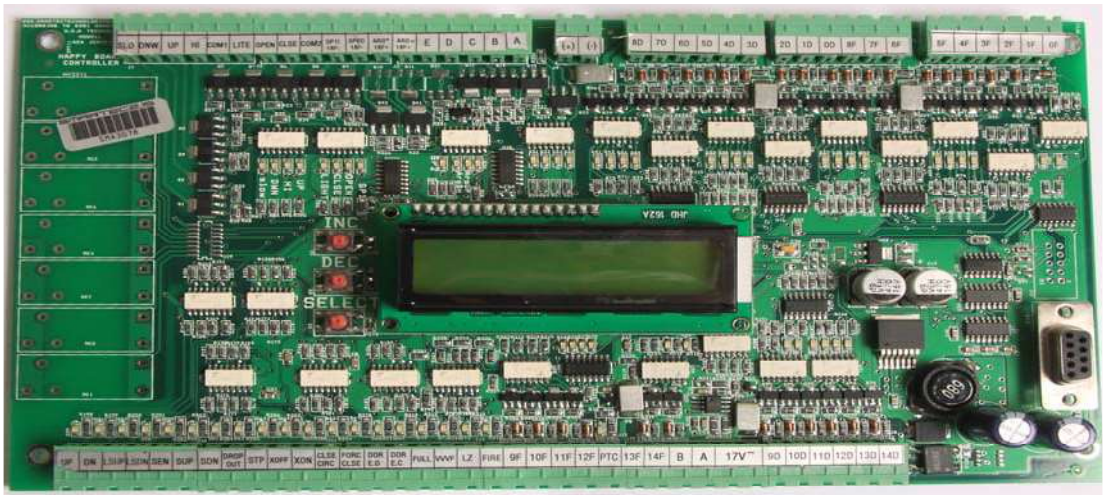
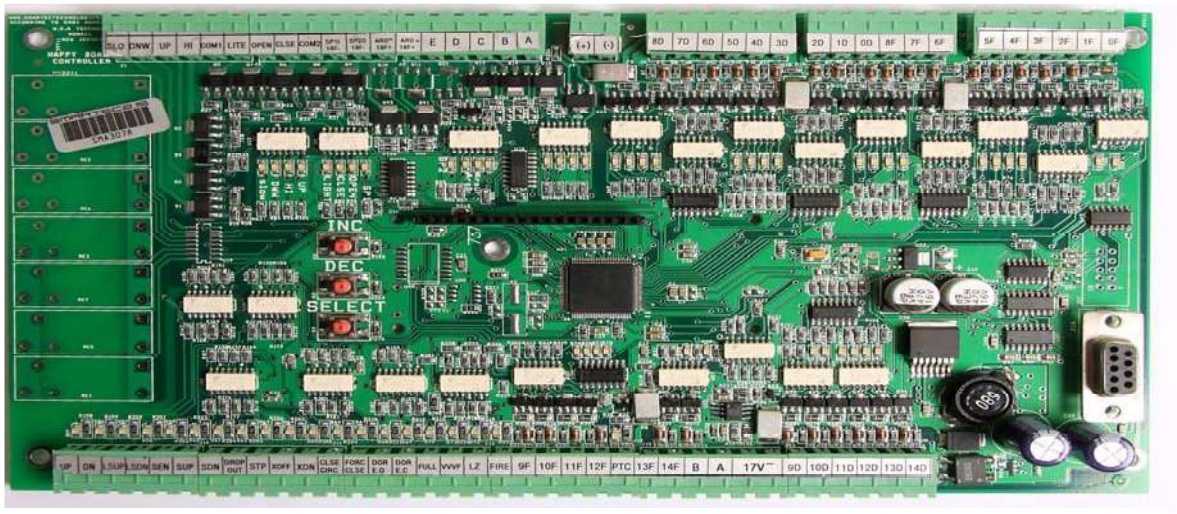


Happy Elevator Control System

Can be up to 15 floors down collective in a single board



Product Specification
WE906-06

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Rev.8.1p

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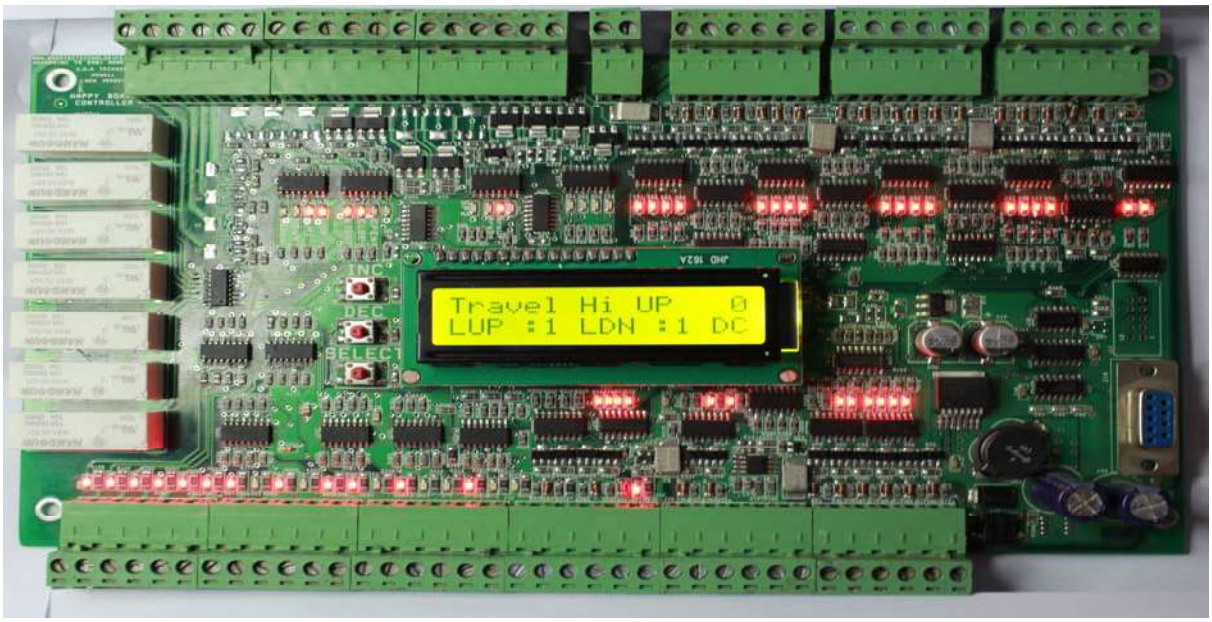
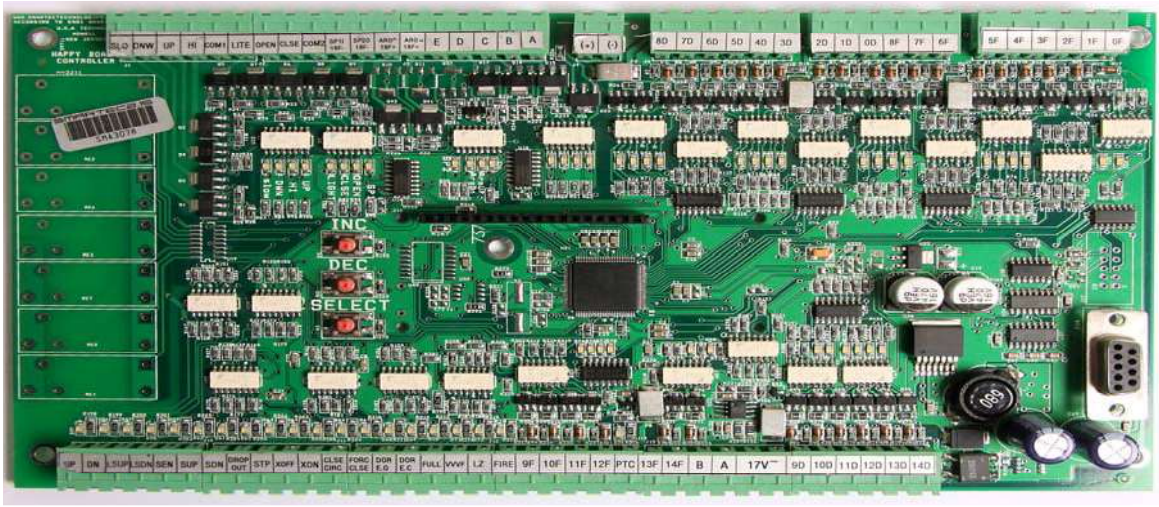


Happy Elevator Control System

Can be up to 15 floors down collective in a single board + Relay



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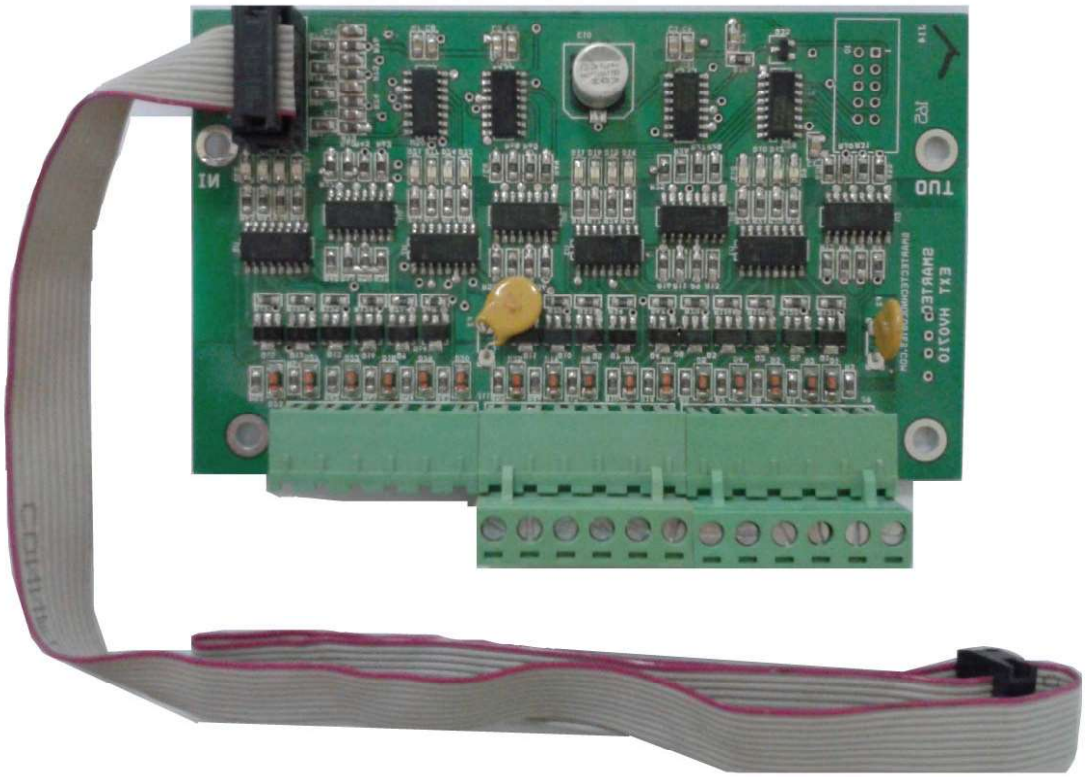

EXT- Happy up to 8 Stops Down Collective

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Happy BOARD Elevator Control System

Can be up to 15 floors down collective in a single board.

Smartec Technologies specializes in the design and production of high technology electronic products. Today's electronic product development requires the skillful blend of expert hardware and software engineering together with a spirit of creativity and innovation, tempered by the practical concerns of manufacturability, cost consciousness, testability and on-time delivery. With hundreds of successful project completions, **Smartec** is uniquely suited to engineer your concept into reality. Smartec will work with your idea, perform detailed design, construct prototype units, refine the prototype design and manufacture your electronic product. Fast accurately, on time and on budget.

General Description:

HAPPY Board Elevator Control System is a state-of-the-art high-speed Microcomputer based elevator control system that continuously collects and evaluates traffic demand patterns for each individual elevator car and the entire elevator system. Based on real time events when compared to predicted traffic conditions and anticipated system demands, the **HAPPY** Board Elevator Control System automatically modifies its dispatching parameters to optimize system operation.

Individual elements of the **HAPPY** Board Elevator Control System (Group Supervisory Panel, Car Control System, Motion Control System and Drive Control System) were created to interface in a cohesive manner to provide an elevator system with unmatched ride quality characteristics while exceeding the most stringent performance requirements.

HAPPY Board Group Supervisory Panel Operating under standard serial communications protocol, the **HAPPY** Board Group Supervisory Panel constantly monitors and analyzes changing traffic demands to predict the future movement of the entire elevator system and to create a real time traffic pattern scenario. Based in part on the following factors: (a) elevator status, (b) elevator direction of travel and hoist way position, (c) hall call assignments, (d) car call patterns, (e) door position, (f) stopping parameters, and (g) systems conditions, the **HAPPY** Board Group Supervisory Panel automatically recognizes any fluctuations in traffic conditions and immediately adjusts the system operation.

Combining real time conditions, historical traffic patterns and predicted system demand, the **HAPPY** Board Group Supervisory Control System continually creates an arrival time prediction diagram for each elevator car and constantly calculates the shortest waiting time when making a hall call assignment.

HAPPY Board Car Control System Utilizing sophisticated **Smartec's** Microcomputer technology and advanced distributed controller design concepts, the **HAPPY** Board Car Control System uses a distributed control network to provide an extremely powerful and incredibly flexible elevator control system. Operating under the Plug And Play® communications protocol (interconnected communication via high-speed serial data links), the **HAPPY** Board Car Control System continuously distributes control to specific sections of the elevator car (elevator car top, elevator car operating panel, elevator hall fixtures, etc.) to provide superior system performance.

Main Features

الميزات الأساسية

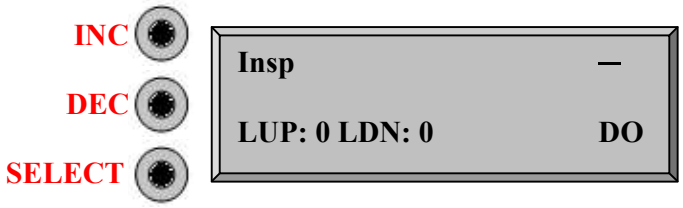
Platform	Risk processor
Type النوع	Single – Dual Speed - VVVF - Hydraulic
Mode طريقة العمل	Simplex, Simlpo & Group
Fault Capture إلتقاط الأعطال	Display more than 200 fault messages يعرض أكثر من 200 رسالة خاطئة
Status information وضع المعلومات	Status of the elevator, door, mode and Limit switch Up &Down are displayed يعرض وضع المصعد والباب, طريقة العمل ونهاية الجولة عند الدور الأول والأخير
Fault count عد الأخطاء	Calculate fault of type 2 يحسب الأخطاء من النوع الثاني
Shaft information معلومات تحرك المصعد	End of the Shaft in the Up, Down Direction نهاية الممر في الإتجاه صعوداً ونزولاً Slow down in the final stop in Up, Down Direction سرعة بطيئة عند الوصول الى البواط Level Zone مستوى الطابق Elevator Position is saved at each stop حفظ الطابق
Indicator signal عرض إشارات المؤشر	Gray, Binary, 7-Segment
Number of Stops عدد المحطات	11,15 and up to 31 Stops 15,11, وتعمل حتى 31 محطة
Door Type نوع الباب	Swinging, Automatic عادي , أوتوماتيك
Door Controls التحكم بالباب	3 inputs are
Door parking Status وضع وقوف باب الأوتوماتيك	Parking Opened or Closed door الباب مفتوح أو مغلق
Floor Stop Time وقت الوقوف عند الطابق	Time of Stopping at each station وقت التوقف عند كل طابق
Home floor توقف المصعد	Home Floor Number عدد التوقف عند كل طابق
Car Light ضوء الكابين	Light timer توقيت الضوء خلال عمل المصعد
Home Floor timer توقيت توقف المصعد	Automatic Return to Home floor after preset time رجوع أوتوماتيكي الى توقف المصعد بعد ضبط الوقت مسبقاً
Inspection Mode معرفة طريقة العمل	Elevator goes to inspection/service mode يعمل المصعد للمعاينة (الصيانة) أو للخدمة
Drop Out إلغاء الطلبات	To Cancel all the outside calls إلغاء كل الطلبات الخارجية
No Load لا حمولة إضافية	At preset floor, it will Cancel all the inside calls if the door wasn't opened سوف تلغى كل الطلبات الداخلية إذا كان الباب غير مفتوح
Full Load حمولة كاملة	The elevator will not serve the outside calls لن يُلبي المصعد الطلبات الخارجية
Emergency Stop وقوف إضطراري	It will stop immediately and cancel all inside calls سوف يقف المصعد في الحال ويلغي كل الطلبات الداخلية
Fireman Operation عملية مفتاح الإطفائية	It will Cancel all calls and go to Fireman floor سوف يُلغي كل الطلبات ويذهب الى طابق مفتاح الإطفائية
Communication طريقة التحكم	Dual row connector port used to Monitor and controlling elevator Installation Dual row connector port يُستخدم للمعاينة والتحكم في تجهيزات وإمدادات المصعد

1. SCREEN DESCRIPTION

1.1 Main Screen الشاشة الرئيسية

This is the main screen program , you can go either to browse all errors occurs or to edit all parameters, also you can monitor the elevator status, direction and floor number.

هذه هي الشاشة الرئيسية, يمكن مشاهدة كل الأعطال التي تحدث أو تغيير الأرقام ويمكن مراقبة حالة المصعد وإتجاهه ورقم الطابق.



1- LUP : Limit switch up. LUP=0 → switch is off , LUP=1→ switch is on.

إذا كانت (LUP=0) : هذا يعني أن الكبسة مفتوحة , إذا كانت (LUP=1) : هذا يعني أن الكبسة مغلقة

2- LDN : Limit switch down. LDN=0 → switch is off , LDN=1→ switch is on.

إذا كانت (LDN=0) : هذا يعني أن الكبسة مفتوحة , إذا كانت (LDN=1): هذا يعني أن الكبسة مغلقة

3- (DO/Dc) : Door open or Door close.

(DO): لفتح الباب , (DC): لتغليق الباب

4- INC : Go up. (INC): للذهاب صعوداً

5- DEC: Go Down. (DEC): للذهاب نزولاً

6- SELECT: Change value. (SELECT) : لتغيير القيمة

1.2 Selection one of the available screen إختيار واحدة من الشاشة المتوفرة

Parameter . الرقم

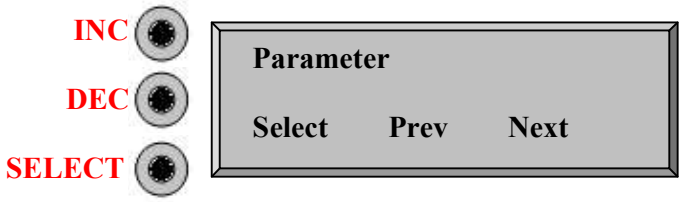
Fault. العطل

Function. الوظيفة

You must press increment or decrement to choose one of the available screen (Parameter or Fault or Function), then press the **SELECT** button to choose the desired available screen.

لإختيار واحدة من الشاشة المطلوبة (Parameter or Fault or Function) إضغط على كبسة (INC or DEC) ثم إضغط على كبسة (SELECT) لتثبيت الشاشة المطلوبة.

1.3 Parameter Screen شاشة الأرقام

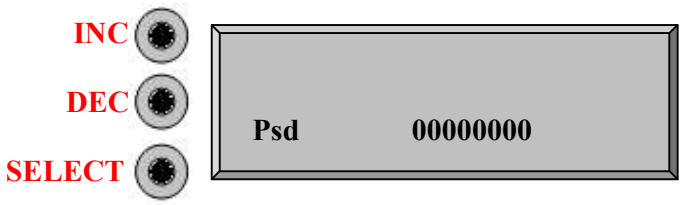


Press **SELECT** to enter password

إضغط على كبسة (SELECT) لإدخال الرقم السري

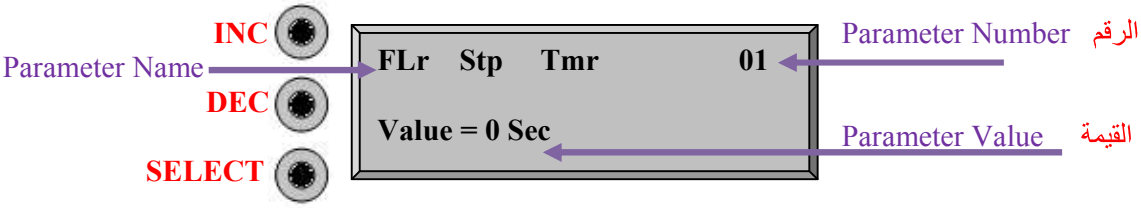
The password is: ********

الرقم السري هو: ********



This will appear on the screen

سيظهر هذا على الشاشة



1- Select: Value blinks

(SELECT): لتغيير القيمة

2- Inc: Increase value.

(INC): لزيادة القيمة

3- Dec: Decrease value

(DEC): لتنقيص القيمة

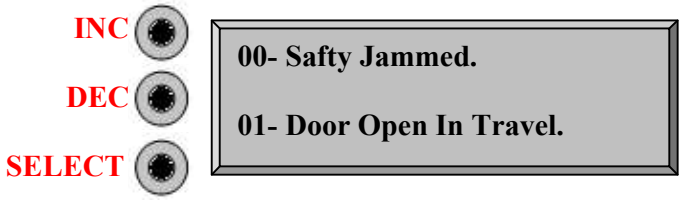
4-Select: Fix value.

(SELECT): لتثبيت القيمة

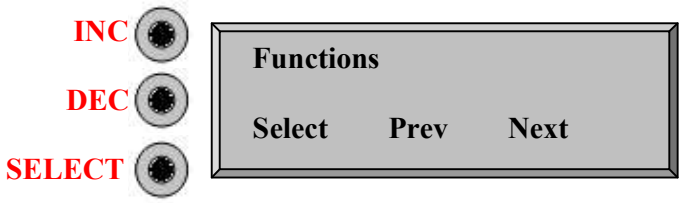
1.4 Error Screen: شاشة الأعطال

In this screen you can see all error occurred in the elevator from the last reset of error.

في هذه الشاشة يمكنك مشاهدة كل الأعطال التي حدثت في المصعد حتى آخر عطل



1.5 Function Screen وظيفة الشاشة



Press **SELECT** to activate **CALL**

إضغط على كبسة (SELECT) لتشغيل الطلب (CALL)

1- SDN : Service down or inspection down.

(SDN): للخدمة نزولاً أو للصيانة في حالة الذهاب نزولاً

2- **SUP:** Service up or inspection up.

(SUP): للخدمة صعوداً أو للصيانة في حالة الذهاب صعوداً

3- FL : Floor number.

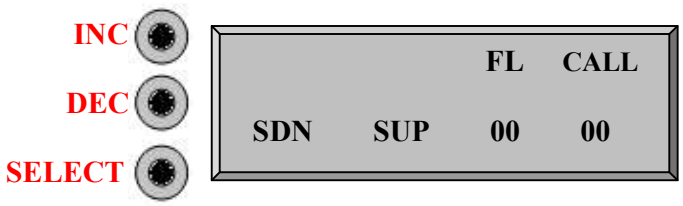
(FL): رقم الطابق

4- CALL: Call floor number.

(CALL): رقم الطلب

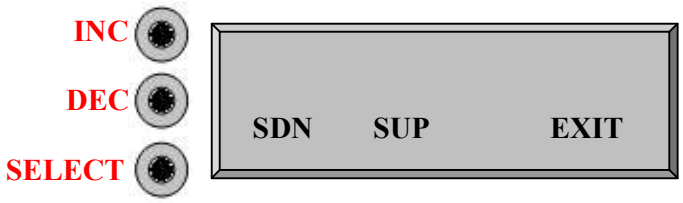
press **INC** to increase **CALL**.

إضغط على كبسة **(INC)** لزيادة الطلب **(CALL)**



Press **DEC** or **SELECT** to **EXIT**.

إضغط على كبسة **(DEC or SELECT)** للخروج



1- Press **DEC** to activate **SUP**.

إضغط على كبسة **(DEC)** لتشغيل **(SUP)**

2- press **SELECT** to activate **SDN**.

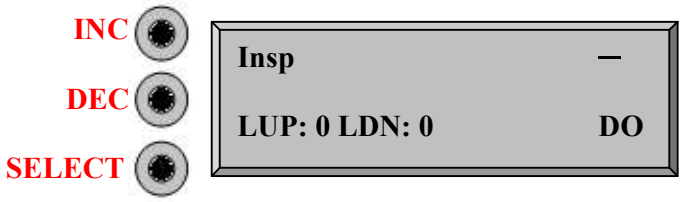
إضغط على كبسة **(SELECT)** لتشغيل **(SDN)**

3- press **INC** to **EXIT**.

إضغط على كبسة **(INC)** للخروج

Then press **INC** until **CALL** reaches **(E)** value , then wait for 3sec to go to main screen.

إضغط على كبسة **(INC)** حتى يصل الطلب **(CALL)** الى قيمة **(E)** ثم إنتظر 3 ثواني للرجوع الى الشاشة الرئيسية.



2. LIST OF PARAMETERS

2.1 Table1: PARAMETERS

Parameter Numbers	Parameters Description on LCD	Parameters Full Description	Default Values	Values Range
0	Exit للخروج	To exit the parameters		
1	Flr Stp Tmr: Floor Stop Timer توقيت الوقوف عند كل طابق	Time between travels in sec مدة الوقوف على الطابق	3 sec	1 → 255 sec
2	Door Type نوع الباب	Type of the door نوع الباب : عادي او أوتوماتيك	Swinging عادي	0=Swinging 1=Automatic
3	Level Zone مستوى الطابق	Level of each floor مستوى الطابق	None	None Installed NC Installed NO
4	MX Cnt of Err: Max. Count of Error وصول الأعطال الى العدد المحدد	Maximum count before blocking أكثر عدد أعطال من الدرجة الثانية	0	0 → 202
5	Basements الطوابق السفلى	Basement counts عدد الطوابق السفلى	0	0 → 9
6	Home Floor الوقوف عند طابق معين	Floor of which the station is on الوقوف عند طابق معين إن لم يكن هناك طلبات	0	0…Last floor
7	Home Flr Tmr: Home Floor Timer تحديد وقت كل طابق	Time out to go home floor وقت الذهاب الى الطابق المطلوب	0 sec	1 → 255 min
8	No Load لا حمولة	Multi calls anybody open door عدد الطلبات من دون فتح الباب	0	1 → 9
9	Collective الذاكرة	Switch between Down and Full collective حفظ الطلبات الخارجية صعوداً ونزولاً	Down	0= Full 1= Down
10	Homing on Pwr: Homing on Power رحلة أولية	If enabled, make a home trip at start up القيام برحلة أولية عند إعادة الكهرباء	Enable	Enable/Disable
11	Truncate إلغاء الأخطاء	Empty the fault log إلغاء الأخطاء الحاصلة		N /A
Automatic Door				
12	Opn / Cls Dr Tm: Open/Close Door Time وقت فتح أو إغلاق الباب	The time of the open or close وقت فتح أو إغلاق الباب	6 sec	5 → 15 sec
13	Park Stat Dr: Park Status Door حالة الباب	The status of the door when reach the station حالة الباب عندما يصل الى المحطة	Close	Close/Open
15	Light Time وقت الإضاءة	Cabin light timer توقيت إضاءة الكابين	5 sec	1 → 60 sec
16	Keep Close الإبقاء مقفل	Keep door active during travel إبقاء الباب مقفل خلال الجولة	Disable	Enable / Disable
Secondary				
17	Retry Gamma عدد محاولات Gamma	Number of retry عدد محاولات Gamma	3	0 → 10 times
18	Rtry Gama Tmr: Retry Gamma Timer وقت عدد محاولات Gamma	Gamma retry timer وقت عدد محاولات Gamma	3	0→ 30 sec
19	Bsment Blnce: Basement Balance موازنة المصعدين	We use it during group elevator	0	0 → 5

Parameter Numbers	Parameters Description on LCD	Parameters Full Description	Default Values	Values Range
20	Pulse Timeout	After the magnet timeout has passed then the elevator will block الوقت بين إشارات المغناطيس لإيقاف المصعد	20 sec	1 → 99 sec
21	Yal Timer وقت الغال	Retry yale time to next retry delay in sec	5 sec	1 → 60 sec
22	PTC – NTC	Reactive Gamma when level zone is reached حرارة المحرك	NTC	NTC/PTC
23	Fireman Floor مفتاح الحريق	Floor of fireman مفتاح الحريق	0	0 → 31 floor
24	Flr Expenson: Floor Expansion تحديد عمل الكارت	Floor Expansion, See table(2) عدد محطات العمل, أنظر الى جدول رقم 2	0	0 or 8
25	Hardware Ext: Hardware Extension اللوحات المضافة	Number of Hardware Extension, See table(3) عدد اللوحات المضافة لزيادة عدد المحطات, أنظر الى جدول رقم 3	Disable	Disable/Enable
26	Indctor Type: Indicator type نوع المؤشر	Specify the hall and car display type نوعية عمل المؤشر	Gray	Gray/Binary/ 7-Segment
30	Lmt Reopen Dr Ins: Limit Reopen During Inspection	Limit Reopen during Inspection طريقة عمل نهاية الجولة عند الدور الأول والأخير وفتح الباب أثناء الصيانة	3	0= Disable limit Switch Disable reopen during inspection 1= Enable limit Switch Disable reopen during inspection 2= Disable limit Switch Enable reopen during inspection 3= Enable limit Switch Enable reopen during inspection
31	Count of Days عدد الأيام	Days of operation تحديد عدد أيام العمل	0	0000
32	Company Name إسم الشركة	Name of the company كتابة إسم الشركة	smarTEC	N / A
34	Serial Number الرقم التسلسلي	The serial number of the board رقم اللوحة	SN	N / A
35	Hdware Vrson: Hardware Version الرقم التصنيعي للوحة	The Hardware version of the board	Happy	N / A
36	Fmware Vrson: Firmware Version رقم البرنامج	The Firmware version of the board	FV	N / A
Hydraulic and VVVF Elevator				
37	VVVF Hy Stp Dly: VVVF Hydraulic Stop Delay وقت وقوف الهيدروليك/ VVVF	Specify the stop delay for Hydraulic or VVVF وقت إلغاء الأوامر عند الوصول الى المحطة	0	0 → 10 in 100 ms
38	VF HY Strt Dly: VVVF Start Delay وقت إقلاع VVVF	Specify brake to turn off after time finished at startup elevator وقت إعطاء الأوامر للمكبح للعمل عند بداية سير المصعد	0	0 → 10 in 100 ms
39	V- Hi Spd Flr: VVVF high Speed Floor عدد الطوابق للقيام بأقصى سرعة VVVF	Specified when we can turn to super high speed	4	4 → 9
40	Hi 2Md Spd Flr: VVVF Med Speed عدد الطوابق للسرعة المتوسطة	Specified when turn to med speed after reach the request floor	2	2 → 5
41	Spar2 Output طبيعة عمل مخرج Spare2	Very high speed output	Inspection	Inspection/Brake

Parameter Numbers	Parameters Description on LCD	Parameters Full Description	Default Values	Values Range
42	Hydr Strt Tm: Hydraulic Start Time وقت الهيدروليك	Specify Hydraulic start time after converting to delta وقت التغيير من Star الى Delta	0	0 → 99
43	Door Busy المصعد مشغول	Group mode الوقت لإعتبار الباب مشغول في حالة Duplex	5 sec	0 → 31 sec
44	Psnger Cpcty: Passenger Capacity إستيعاب الركاب	The maximum number of Cabin calls to ignore outside calls عدد الطلبات الداخلية لإلغاء تلبية الطلبات الخارجية	0	1 → 15
45	Drv / VVVF Type: Drive VVVF Type نوع المحرك و VVVF	Type of engine نوع المحرك	AC2 Speed	0= AC2 Speed 1= VVVF ABB350 2= Hydraulic 3= VVVF Standard 4= VVVF 3-Speed 5=VVVF Fuji 2-Speed 6=VVVF Fuji 3-Speed
46	VVVF Cont Delay	Contactor will make delay during stop stage when delay exist تأخير وقوف المصعد في حالة VVVF	0	1 → 30
47	Board Type نوع Board	Type of the board نوع Board	None	0= none 1= cabin 2= panel
48	User Pass: User Password الرقم السري	Password of the user الرقم السري	********	********
49	Key Request	For serial communication to know the requested key of the other board or Input طلبات Board المقابلة في حالة (Serial Board)		N/A
51	LCD	Display mode	1	1= Number
52	First Stop	To start the indicator from floor 1 بدء عد المؤشر من الطابق الأول	Disable	Disable/Enable
53	Double Door تحديد الطوابق التي لديها بابين	Selection mode for dual door opening on certain floors.		
54	Close Circuit/ SEN إغلاق الباب	Close Circuit or SEN to work active low or active high	NC/NC	NC/ NC NO/NC NC/NO NO/NO
55	LZ Input	Level Zone Input action طبيعة عمل مدخل LZ لمستوى الطابق أو عبر UPS	LZ	LZ/ Rescue
56	Fuji Ena Delay	Stop delay for enable output تأخير إشارة Inverter أثناء الإقلاع في حالة Fuji VVVF	0	0 → 30
57	Relevel Option	Relevel Option: Level of the floor in case of Hydraulic مستوى الطابق في حالة الهيدروليك (في حال عدم وجود طلبات)	Selective	Disable: Relevel is disabled. Selective: Relevel is done only when the door is closed and elevator has no calls to serve. Always: Relevel is done when the elevator is opened or closed and ignores close circuits.
58	Relevel time	During Relevel if this time end, the elevator will block في حال إنتهاء الوقت المحدد خلال تحديد مستوى الطابق فإن المصعد سيتوقف	5	0 → 20
59	Fact Default: Factory Restore	Restore factory settings ضبط إعدادات المصنع		

2.2 HAPPY Floor Expansion (parameter 24) [1]:

Table: 2

Value القيمة	Description الوصف
0	**Up to 15 Stops Down Collective without flashing outside calls.** **حتى 15 طابق Down Collective من دون إشارة ضوئية للطلبات الخارجية**
8	**Up to 15 Stops Down Collective with flashing outside calls.** **حتى 15 طابق Down Collective مع إشارة ضوئية للطلبات الخارجية**

2.3 Hardware Extension (Parameter 25) [1]:

Hardware extension is used to add more stations as needed

اللوحات المضافة تستعمل لزيادة المزيد من اللوحات حسب عدد المحطات

Table: 3

HAPPY		
Hardware Ext # رقم اللوحة المضافة	Down Collective	Full Collective
0	Up to 15 Stops حتى 15 طابق	**Up to 11 Stops** **حتى 11 طابق**
1	23 stops طابق 23	**16 stops** **طابق 16**
2	31 stops طابق 31	**22 stops** **طابق 22**
3	**39 stops** **طابق 39**	**27 stops** **طابق 27**

Note: if Hardware Extension (25) > 0, Floor Expansion (24) must be 0.

[1]: See table (1)

3. ERROR LIST DESCRIPTIONS AND SOLUTIONS

Error Displayed on LCD العطل	Description الوصف	Controller Action العمل	Solution الحل
Elevator is Jammed **المصعد لا يتحرك**	**Motor powered but car didn't move** إشتغل المحرك **(Motor)** ولكن المصعد لا يتحرك	**Block** عائق	**Check the Brake or Pines, Turn electricity off then on.** التأكد من المكبح **(Brake)** , قطع التيار ثم تشغيله
SDFS Pulse إشارات **SDFS**	**Missed Pulses** إشارات مفقودة	**Reset and make home trip** إعادة تهيئة والقيام بجولة من الأول	**Check the pines or magnet.** التأكد من إشارات العد **(pines or magnet)**
Limit switch Up نهاية الجولة عند الدور الأخير	**LMTSW_UP fault** بواط نهاية الجولة صعوداً	**Block** عائق	**Check Switch up, Turn electricity off then on.** التأكد من نهاية الجولة صعوداً, قطع التيار ثم تشغيله
Limit switch Down نهاية الجولة عند الدور الأول	**LMTSW _DN fault** بواط نهاية الجولة نزولاً	**Block** عائق	**Check Switch down, Turn electricity off then on.** التأكد من نهاية الجولة نزولاً, قطع التيار ثم تشغيله
Limit switch up & Down نهاية الجولة عند الدور الأخير والأول	**LMTSW _UP fault & LMTSW _DN fault** بواط نهاية الجولة صعوداً ونزولاً	**Block** عائق	**Check Switch up & Down, Turn electricity off then on.** التأكد من نهاية الجولة صعوداً ونزولاً, قطع التيار ثم تشغيله
Gamma	**Gamma fail in contactor up** فشل **GAMMA** في غلق الباب	**Cancel calls** إلغاء الطلبات	**Check Gamma** التأكد من **Gamma**
Yale الغال	**Yale is opened** الغال مفتوح	**Cancel calls** إلغاء الطلبات	**Check Yale** التأكد من **Yale**
Door Open in travel فتح الباب خلال الجولة	**Door Lock circuit open during travel** دائرة إقفال الباب تفتح خلال الجولة	**Wait for lock circuit, Cancel calls if fault persists more than 5 sec** الإنتظار لإقفال الدائرة, إلغاء الطلبات إذا إستمرت المواصلة أكثر من 5 ثواني	**Check Yale** التأكد من **Yale**
Aux NC	**Safety and Ready circuits are open** دائرتي الأمان والإستعداد مفتوحتين	**Waits for Ready circuit to close** إنتظار دائرة الإستعداد للإقفال	**Check Aux Nc or Yale** التأكد من **Aux Nc** or **Yale**
Safety Jammed تعطل دائرة الأمان	**Contactor up or down jammed** تعطل **Contactor** صعوداً ونزولاً	**Waits for Ready circuit to close** إنتظار دائرة الإستعداد للإقفال	**Check Contactor UP or Down** التأكد من **Contactor** صعوداً ونزولاً
System Timeout إنتهاء عد الأيام	**Count days of operation expired** عملية عد الأيام إنتهت	**Block** عائق	**Contact the System Administrator.** الإتصال بمسؤول الجهاز
Stop Key مفتاح التوقف	**Stop key Error** تعطل مفتاح التوقف	**Complete cycle** دورة كاملة	**Check Stop Key.** التأكد من مفتاح التوقف
PTC overheating سخونة المحرك	**Motor Temperature exceeds limits.** حرارة المحرك تخطت الحدود	**Elevator will not take calls after the first stops.** المصعد لن يأخذ طلبات بعد أول توقف	**Wait for motor to cool Or disable PTC.** الإنتظار حتى يبرد المحرك أو فصل PTC

HAPPY Controller Board is Capable of storing more than 200 faults that can be displayed on the LCD screen.
جهاز Happy قادر على تخزين أكثر من مئتي عطل ويمكن عرضهم على شاشة LCD

3.1 Selecting Hydraulic إختيار الهيدروليك

To turn on the hydraulic function in the controller the "Hydra Start time" must be >0

لتشغيل وظيفة الهيدروليك في المصعد يجب ان تكون **(Hydra Start Time)** أكبر من **0**

To set the hydraulic time to the value desired in 100th ms increments

لإعداد توقيت الهيدروليك للقيمة المرغوبة في زيادة **100 th ms**

Ex: Value = 15 (Means 1.5s or 1500 ms).

3.2 Displaying Error in Binary or Gray:

عرض الأعطال في Binary or Gray

Error العطل	Display Output العرض
Limit Switch UP نهاية الجولة عند الدور الأخير	**31 = LU**
Limit Switch Down نهاية الجولة عند الدور الأول	**30 = LD**
Limit Switch UP & Down نهاية الجولة عند الدور الأخير والأول	**29 = UD**
System Timeout إنتهاء عدد الأيام	**28 = ST**
Elevator Jammed تعطل المصعد	**27 = EJ**
Max Error وصول الأعطال من الدرجة الثانية الى العدد المحدد	**26**

4. Characteristics of Parameter (P54) :

P54	
CLSE CIRC	**SEN**
NC: Normally Closed	NC: Normally Closed
NO: Normally Opened	NC: Normally Closed
NC: Normally Closed	NO: Normally Opened
NO: Normally Opened	NO: Normally Opened

5. Speed table for FUJI inverters

Use **P38** parameter for VVVF start delay, where (UP or Down) direction logic is set ON, it will delay to set (HI, Spare or Low **in the table below**) to ON

Use **P37** parameter for VVVF stop delay, where (HI, Spare, or Low) are ON, it will delay to set (UP or Down) to OFF

Put P45 = (5) For FUJI VVVF 2-speed:

Speed Ref	UP	Down	HI	LOW	Spare1	Spare2	Relays of Happy controller
	FWD	REV	(X3)	(X2)	(X1)	Enable inverter	Connections on Fuji drive
Zero speed (0000)	OFF	OFF	OFF	OFF	OFF	OFF	
Up Slow Speed (10001)	ON	OFF	OFF	ON	ON	ON	
Down Slow Speed (01001)	OFF	ON	OFF	ON	ON	ON	
Inspection speed UP (10010)	ON	OFF	OFF	OFF	ON	ON	
Inspection speed DN (01010)	OFF	ON	OFF	OFF	ON	ON	
High speed UP (10111)	ON	OFF	ON	OFF	OFF	ON	
High speed DN (01111)	OFF	ON	ON	OFF	OFF	ON	

Put P45 = (6) For FUJI VVVF 3-speed:

Speed Ref	UP	Down	HI	LOW	Spare1	Spare2	Relays of Happy controller
	FWD	REV	(X3)	(X2)	(X1)	Enable inverter	Connections on Fuji drive
Zero speed (0000)	OFF	OFF	OFF	OFF	OFF	OFF	
Up Slow Speed (10001)	ON	OFF	OFF	ON	ON	ON	
Down Slow Speed (01001)	OFF	ON	OFF	ON	ON	ON	
Inspection speed UP (10010)	ON	OFF	OFF	OFF	ON	ON	
Inspection speed DN (01010)	OFF	ON	OFF	OFF	ON	ON	
Up Medium Speed (10100)	ON	OFF	ON	OFF	OFF	ON	
Down Medium Speed (01100)	OFF	ON	ON	OFF	OFF	ON	
High speed UP (10111)	ON	OFF	ON	ON	ON	ON	
High speed DN (01111)	OFF	ON	ON	ON	ON	ON	

6. Drive VVVF Type

6.1 VVVF Standard Speed: Select VVVF type (P45=3)

Use VVVF Start Delay P38 and VVVF Stop Delay P37
Positive Value: VVVF selected with speed reference disengaging before direction.
Negative Value: VVVF selected with direction reference disengaging before speed.

Speed Ref.	UP	Down	HI	Low	Spare1	Spare2
	Direction		Speed			
Zero Speed	OFF	OFF	OFF	OFF	OFF	OFF
UP High Speed	ON	OFF	ON	OFF	OFF	OFF
Down High Speed	OFF	ON	ON	OFF	OFF	OFF
UP Low Speed	ON	OFF	ON	ON	OFF	OFF
Down Low Speed	OFF	ON	ON	ON	OFF	OFF
UP Inspection Reset	ON	OFF	OFF	ON	OFF	ON
Down Inspection Reset	OFF	ON	OFF	ON	OFF	ON
During Reset High	OFF	ON	ON	OFF	ON	OFF
During Reset Low	OFF	ON	ON	ON	ON	OFF

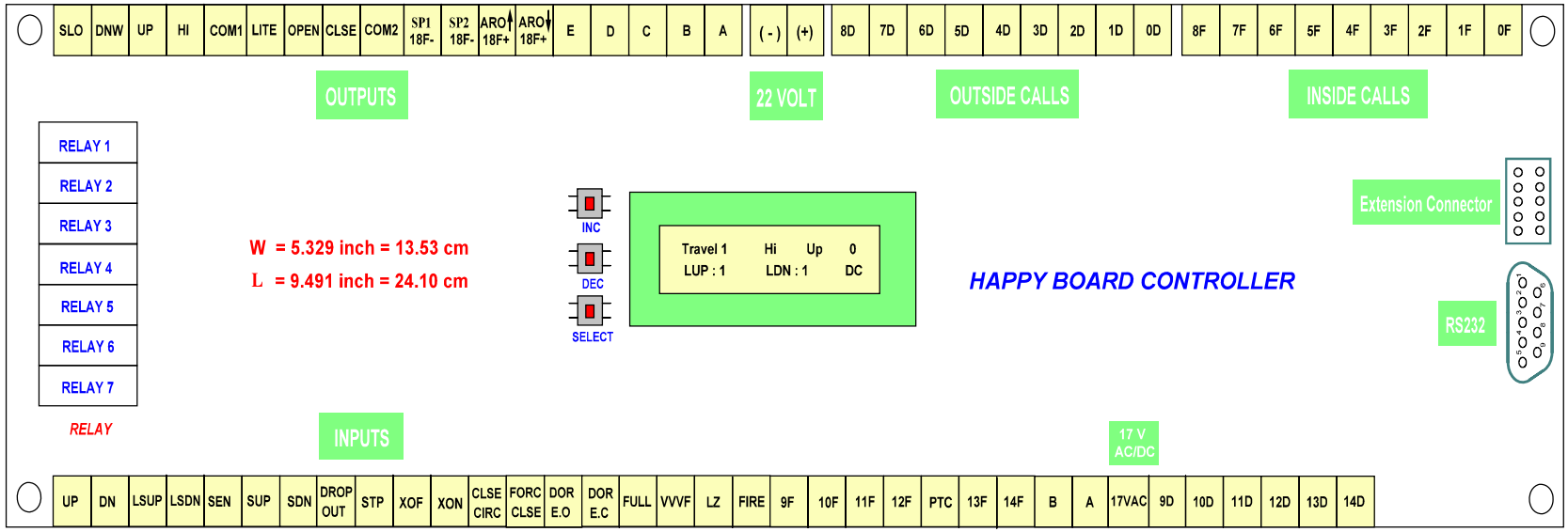
6.2 VVVF 3-Speed: Select VVVF type (P45=4)

Use VVVF Start Delay P38 and VVVF Stop Delay P37
Positive Value: VVVF selected with speed reference disengaging before direction.
Negative Value: VVVF selected with direction reference disengaging before speed.

Speed Ref.	UP	Down	HI	Low	Spare1	Spare2
	Direction		Speed			
Zero Speed	OFF	OFF	OFF	OFF	OFF	OFF
UP Slow Speed	ON	OFF	ON	ON	OFF	OFF
UP Medium Speed	ON	OFF	ON	OFF	OFF	OFF
UP Hi Speed	ON	OFF	OFF	OFF	ON	OFF
Inspection UP	ON	OFF	OFF	ON	OFF	ON
Down Slow Speed	OFF	ON	ON	ON	OFF	OFF
Down Medium Speed	OFF	ON	ON	OFF	OFF	OFF
Down Hi Speed	OFF	ON	OFF	OFF	ON	OFF
Inspection Down	OFF	ON	OFF	ON	OFF	ON

15 STOPS CONNECTION DIAGRAM (Floor Expansion Parameter (24)= 0) No Flashing Outside Calls

(Floor Expansion Parameter (24)= 8) Flashing Outside Calls



OUTPUTS	INPUTS
SLO : Slow // Delta [1]	UP : Magnetic Switch Up Direction
DNW : Down [2]	DN : Magnetic Switch Down Direction
UP : Up // Star [1,2]	LSUP : Limit Switch Up Direction
HI : High [2]	LSDN : Limit Switch Down Direction
COM1: No Connection	SEN : Service Enable
LITE: Car Light	SUP : Service Up Enable
OPEN : Open	SDN : Service Down Enable
CLSE: Close / CAM	DROP OUT : Cancel Outside Calls
COM2	STP : Emergency Stop
SP1 : Spare 1	XOF : Contactor Up Direction Aux.
SP2 : Spare 2	XON : Contactor Down Direction Aux.
ARO↑ : Arrow Up	CLSE CIRC: Active High when the Doors Circuit are completely Engaged
ARO↓ : Arrow Down	FORC CLSE: Force Automatic Door to Close and Cancel the Timeout
E	DOR E.O: Automatic Door Close Switch
D	DOR E.C: Automatic Door Open Switch
C	FULL: Over Capacity, Will not Take any Outside Calls
B	VVVF: VVVF Cotrol Signal
A	LZ : Level Zone Switch
	FIRE: Fireman Switch
	PTC: Active Low

" 1 ": Activates Hydraulic : You must Set (Hydraulic Start Time) > 0 Time in 100's ms ex. 11= 1.1 sec

" 2 ": VVVF : RAMP UP, RAMP DOWN, HIGH = Constant Slow Speed

HAPPY MAIN FEATURES:

Up to 15 Stops Down Collective
Group Up to 4 Elevators
Outputs Drive can be 60 V transistors or Relays
Voice prompt " option "

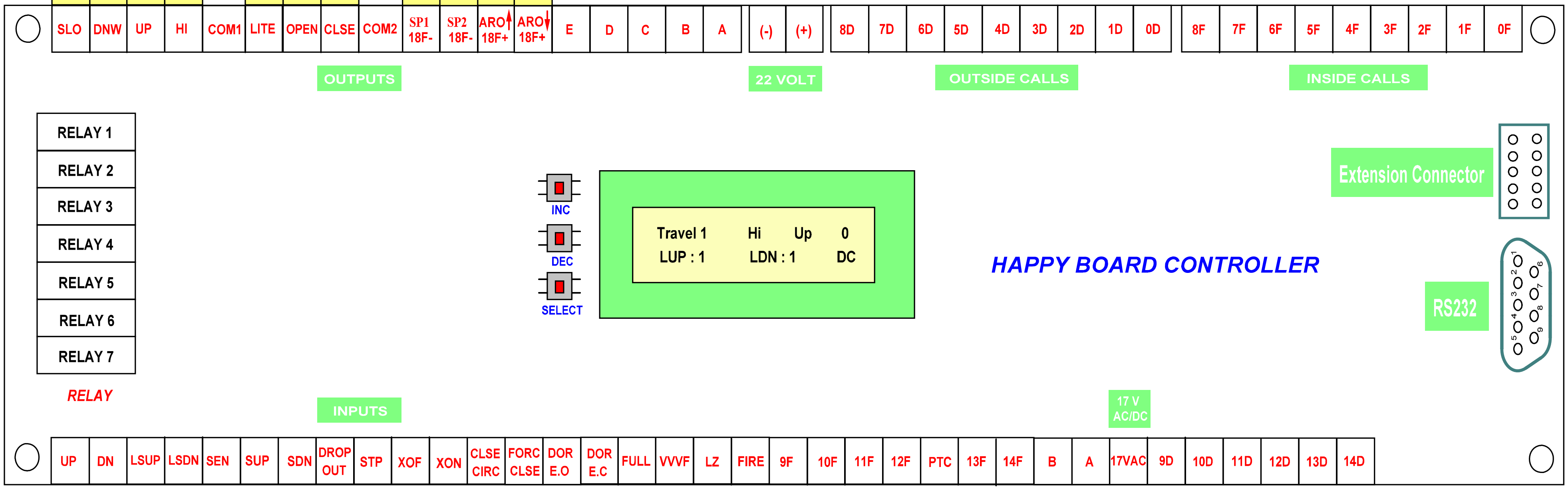
Floor Expansion Parameter (24)

Value	Description
0	Upto 15 Stops down collective without flashing outside calls
8	Upto 15 Stops down collective with flashing outside call

CONTROLLER CONNECTIONS

TERMINAL'S POSITIONS ON THE BOARD

Fuji 2 Speed	SLO/ X2	DN	UP	HI/ X3	LITE	OPEN	CLSE	INSP/ X1	ENA	ARO↑	ARO↓
Fuji 3 Speed	SLO/ X2	DN	UP	HI/ X3	LITE	OPEN	CLSE	INSP/ X1	ENA	ARO↑	ARO↓
For 2 Speed	SLO	DN	UP	HI	LITE	OPEN	CLSE	—	—	ARO↑	ARO↓
For hydraulic 1	Delta	DN	Star	HI	LITE	OPEN	CLSE	BRK	RELV	ARO↑	ARO↓
For hydraulic 2	SLO	DN	UP	HI	LITE	OPEN	CLSE	BRK	CP	ARO↑	ARO↓
For VVVF-2 Speed	SLO	DN	UP	HI	LITE	OPEN	CLSE	INSP	BRK	ARO↑	ARO↓
For VVVF-3 Speed	SLO	DN	UP	HI	LITE	OPEN	CLSE	VHS	BRK	ARO↑	ARO↓



SLO/X2: Slow speed X2

HI/X3: Hi Speed X3

RELV: Releveling

VHS: Very High Speed

INSP/X1: Inspection Speed X1

BRK: Break

CP: Contactor CP

ENA: Enable Inverter

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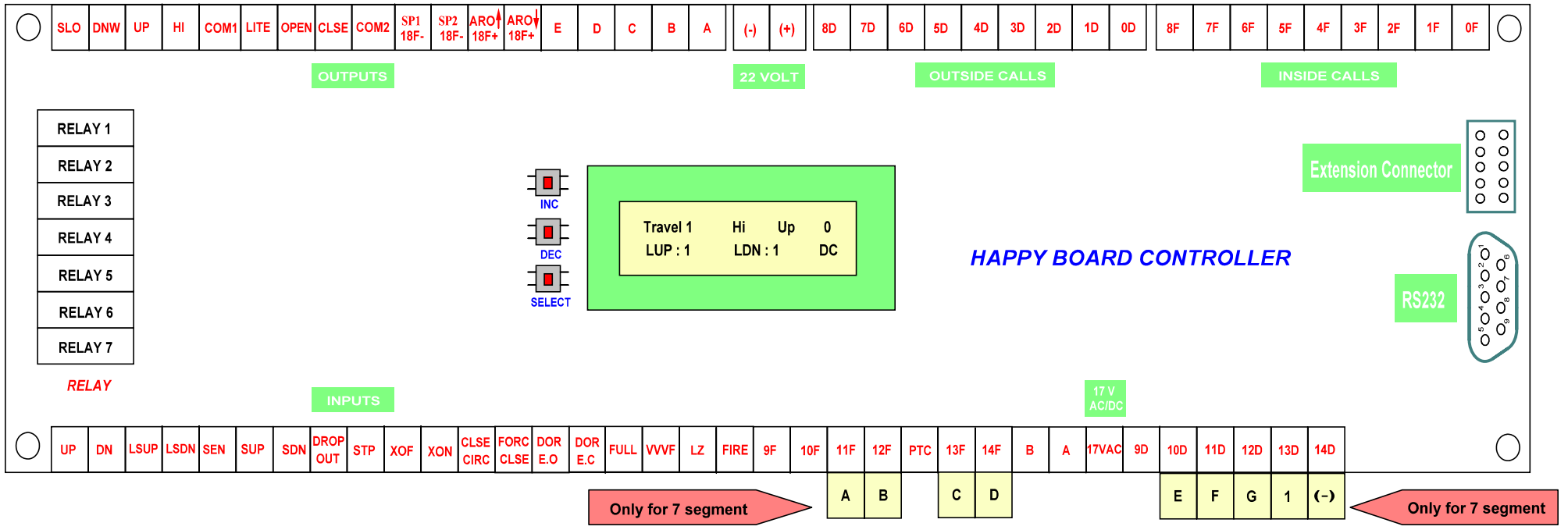
Page Description: **CONTROLLER CONNECTIONS**

Project: **HAPPY BOARD CONTROLLER**

CONTROLLER CONNECTIONS For 7 Segment Display

11F= A
12F= B
13F= C
14F= D

10D= E
11D= F
12D= G
13D= 1
14D= (-)



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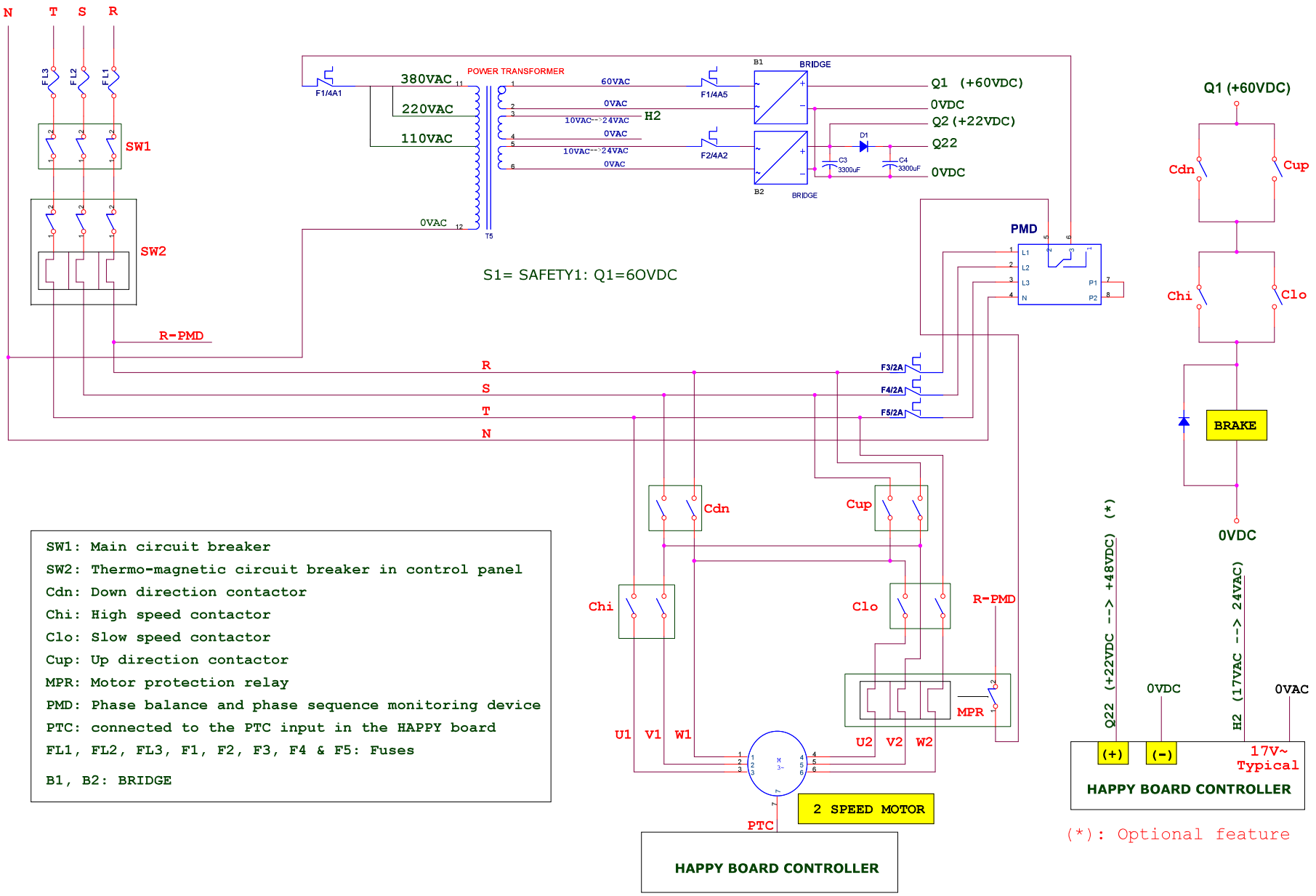
POWER DIAGRAM



SW1: Main circuit breaker
SW2: Thermo-magnetic circuit breaker in control panel
Cdn: Down direction contactor
Chi: High speed contactor
Clo: Slow speed contactor
Cup: Up direction contactor
MPR: Motor protection relay
PMD: Phase balance and phase sequence monitoring device
PTC: connected to the PTC input in the HAPPY board
FL1, FL2, FL3, F1, F2, F3, F4 & F5: Fuses

B1, B2: BRIDGE

(*): Optional feature

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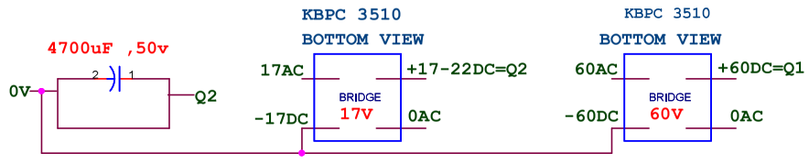
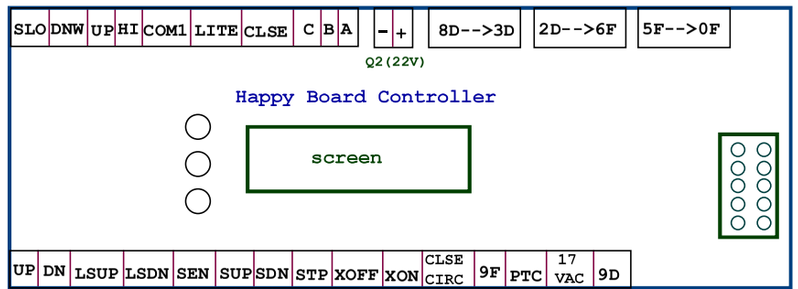
page description: POWER DIAGRAM

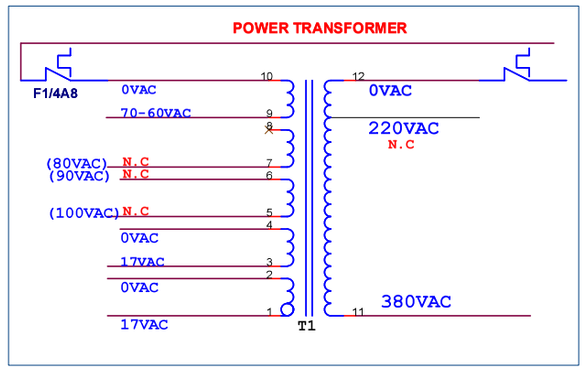
project: HAPPY BOARD CONTROLLER

HAPPY CONTROLLER PANEL

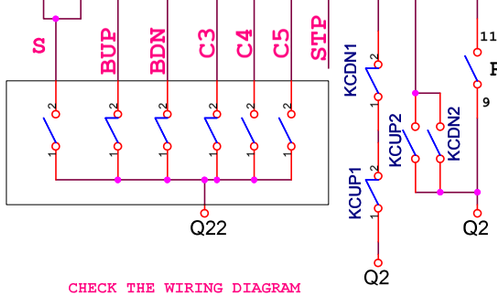
2 SPEED-MANUAL DOOR PANEL OUTLINE





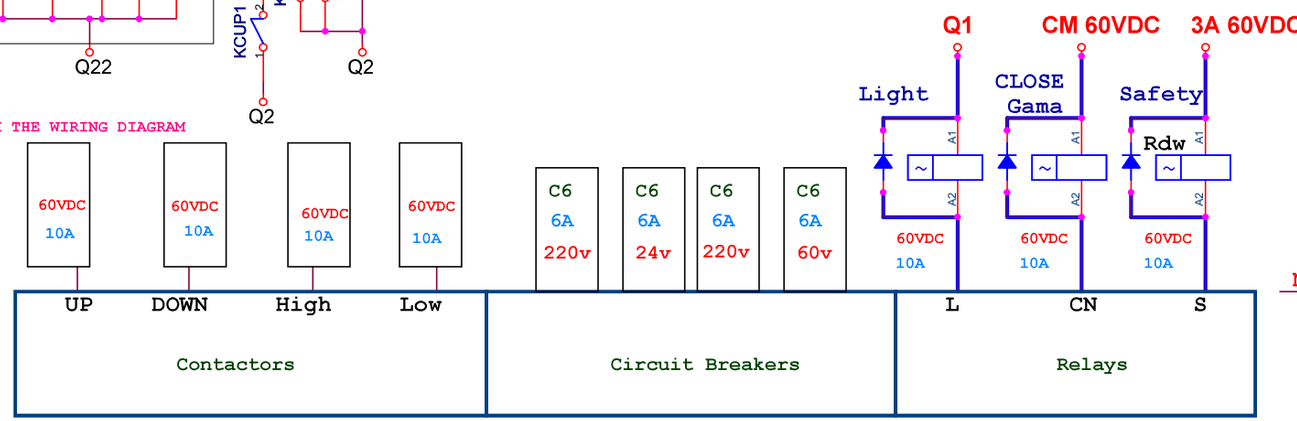


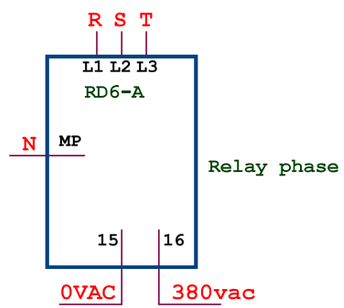
R,S,T : 3- phase from main
GV : High speed contacts for high speed contactor "Chi"
PV : Low speed contacts for low speed contactor "Clo"
N : Neutre
F,F: Brake (0 and 60 Vdc) "check wiring diagram"
CM,CM: Gama (0 and 60 Vdc) for gama relay
L1: Neutre
L2 : Phase (R)
L3 : Light of cabin
FC= safety circuit 60vdc "check wiring diagram"
2 & 3 : Safety series stop
3 , 3A : safety series stop
3A,4 : input 60Vdc from safety circuit to safety relay "check wiring diagram"
C1 : 24 v
C2 : Ground
C3 : Inspection enable
C4 : Inspection Up
C5 : Inspection Down
1,2,3,4,5,6,7,8,9,10 : Car Calls
1D,2D,3D,4D,5D,6D,7D,8D,9D,10D: OUTSIDE cALLS
STP : Emergency Stop
BDN : Limit switch down
BUP : Limit switch up
S :switch magnet for floor counts
GND : Ground, 0VDC
A,B,C: to indicator
Q: Q22=24Vdc after diode
PTC=PTC GND, and PTC of Happy board

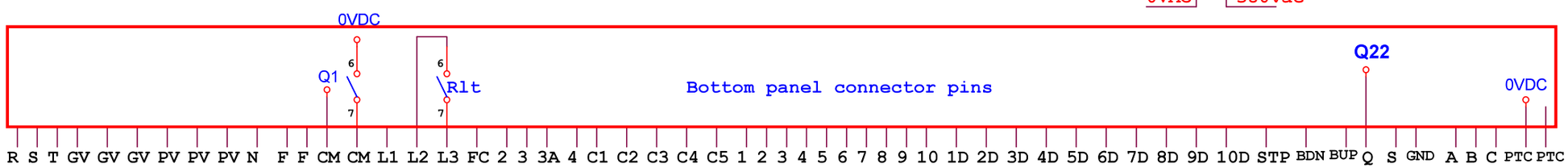


KCUP1,KCUP2= AUXILIARY SWITCH FOR UP DIRECTION CONTACTOR
KCDN1,KCDN2= AUXILIARY SWITCH FOR DOWN DIRECTION CONTACTOR

CHECK THE WIRING DIAGRAM







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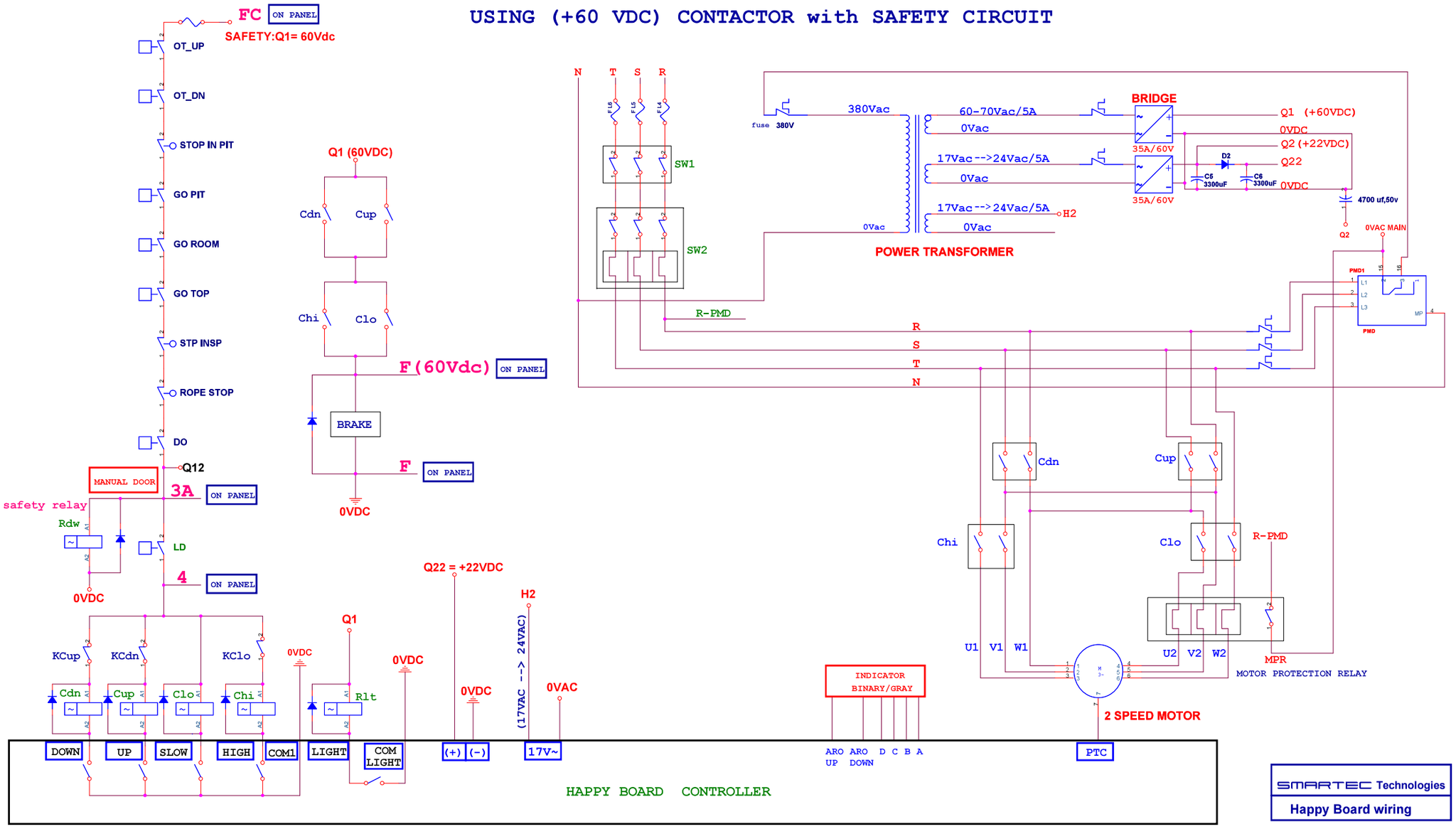
Happy Board panel

2 SPEED MOTOR-MANUAL DOOR-CONNECTIONS AND POWER UP DIAGRAM

USING (+60 VDC) CONTACTOR with SAFETY CIRCUIT



OT-UP: Over travel up mechanical limit switch
OT-DN: Over travel down mechanical limit switch
GO PIT: Overspeed governor pit
GO ROOM: Overspeed governor machine room
GO TOP: Overspeed governor top of cabine
STP INSP: Stop inspection top of cabine

DO : Door contact mechanical switch
LD : Door lock contact
Rdw: Door contact relay
KClo: Auxiliary switch for low speed contactor,should be N.C
KCdn: Auxiliary switch for down direction contactor,should be N.C
KCup: Auxiliary switch for up direction contactor,should be N.C

Cdn: Down direction contactor
Cup: Up direction contactor
CLo: Slow speed relay
Chi: High speed relay
Rlt: Light relay
MPR: Motor protection relay

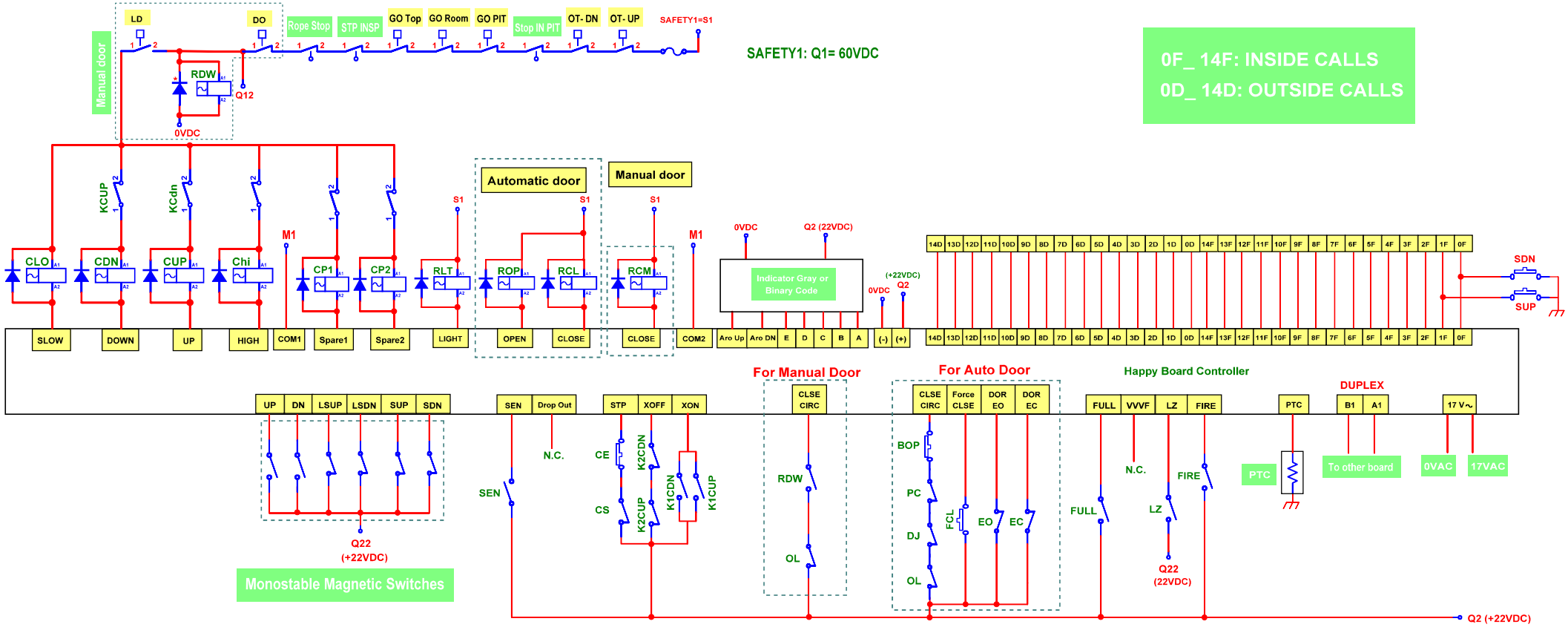
PMD: Phase balance and phase sequence monitoring device
PTC: Connected to the PTC input in the HAPPY board
SW1: Main circuit breaker
SW2: Thermo-magnetic circuit breaker in control panel

VVVF 3- SPEED MOTOR - HAPPY 15 STOPS

MANUAL / AUTOMATIC DOOR

M1= 0VDC

0F_ 14F: INSIDE CALLS
0D_ 14D: OUTSIDE CALLS



For 2- Speed (Inspection UP / DN)

For 3- Speed (SUP* / SDN*= extra limit switches in 3- Speed) " Check Magnetic drawing for 3- Speed"

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Page Description:

VVVF 3- SPEED MOTOR - HAPPY 15 STOPS, MANUAL / AUTOMATIC DOOR

Project:

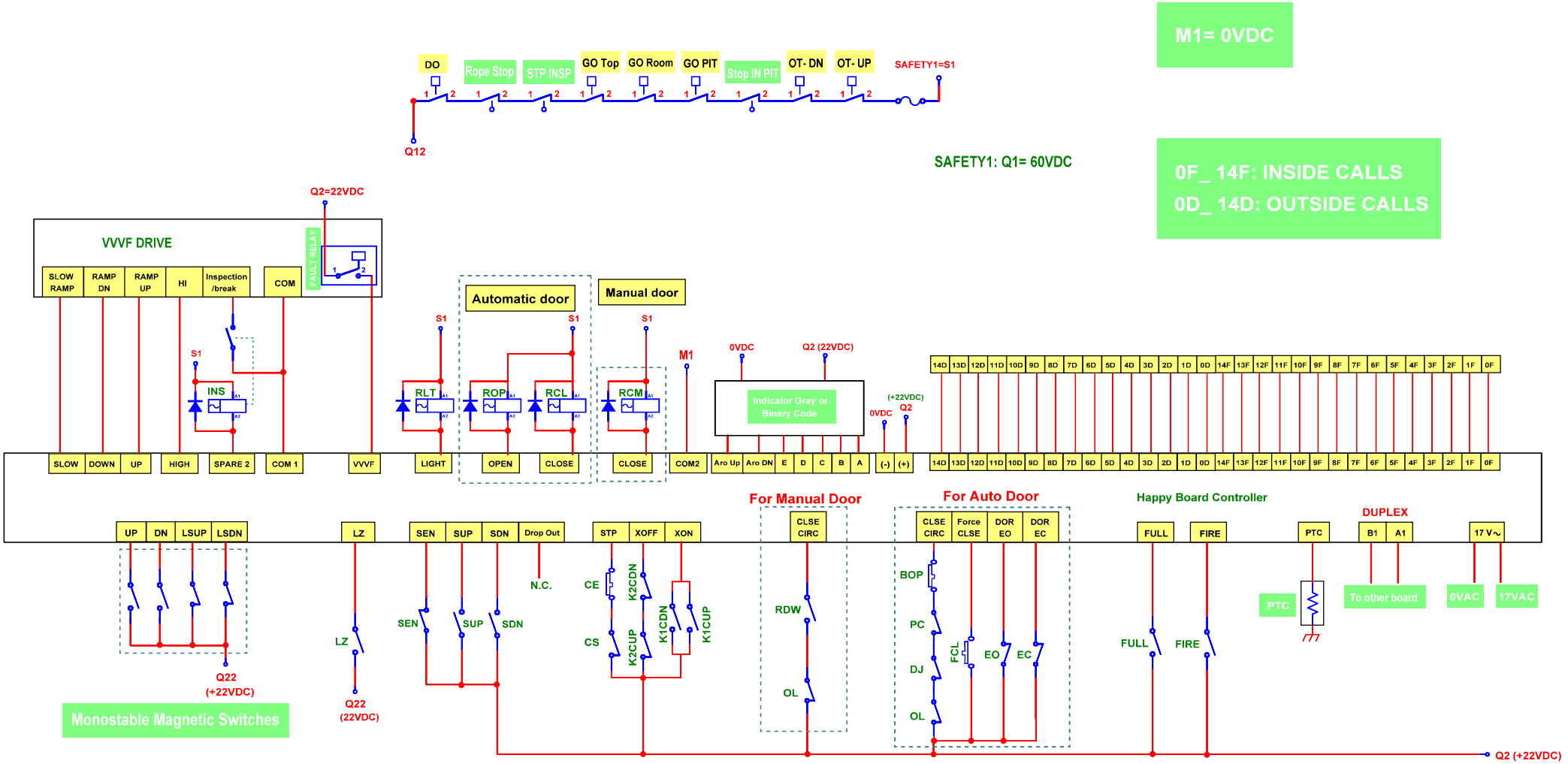
HAPPY BOARD CONTROLLER

Description of Components of " VVVF 3- Speed Motor , MANUAL / AUTOMATIC DOOR" Diagram

LD : Lock Door Contact	LSUP : Limit Switch UP
RDW : Door Contact Relay	LSDN : Limit Switch Down
DO : Door Contact Mechanical Switch	SUP : Additional Limit Switch UP
STP INSP: Stop Inspection Top of Cabine Rope Stop	SDN : Additional Limit Switch Down
GO TOP: Overspeed Governor Top of Cabine	SEN : Service Enable Switch
GO ROOM: Overspeed Governor Machine Room	CE : Car Emergency Push Button
GO PIT: Overspeed Governor Pit	CS : Car Step Switch
OT-DN : Over Travel Down Mechanical Limit Switch Stop in Pit	K2CDN : Auxiliary Switch for Down Direction Relay
OT-UP : Over Travel UP Mechanical Limit Switch	K2CUP : Auxiliary Switch for UP Direction Relay
KCUP : Auxiliary Switch for UP Direction Relay , should be Normally Close	K1CDN : Auxiliary Switch for Down Direction Relay
KCDN : Auxiliary Switch for Down Direction Relay , should be Normally Close	K1CUP : Auxiliary Switch for UP Direction Relay
CLO : Slow Speed Relay	RDW : Door Contact Relay
CDN : Down Direction Relay	OL : Over Load Switch
CUP : UP DIrection Relay	BOP : Bush Button to Reopen Automatic Door
CHi : High Speed Relay	PC : Photocell Switch
COM1: Commun for Relay(UP,Down,Slow &High) is connected to 0V (M1)	DJ : Door Jam Switch
COM2: Commun for Relay(Light,Close,Open) is connected to 0V(M1)	OL : Overload Switch
CP1 : Medium Speed Relay	FCL : Push Button Close Door Immediately
CP2 : Inspection Break Relay	EO : Limit Switch End of Opening
RLT : Light Relay	EC : Limit Switch End of Closing
ROP : Open Door Button	FULL : Full Load Switch
RCL : Close Door Button	LZ : Level Zone
RCM : Cam Relay For Swinging Door (GAMMA)	FIRE : Fireman Switch
UP : Pulse UP	PTC : PTC from the Motor
DN : Pulse Down	DUPLEX : Used in Duplex Mode to be Connected to other Board

VVVF 2- SPEED MOTOR - HAPPY 15 STOPS

MANUAL / AUTOMATIC DOOR



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Page Description:

VVVF 2- SPEED MOTOR - HAPPY 15 STOPS, MANUAL / AUTOMATIC DOOR

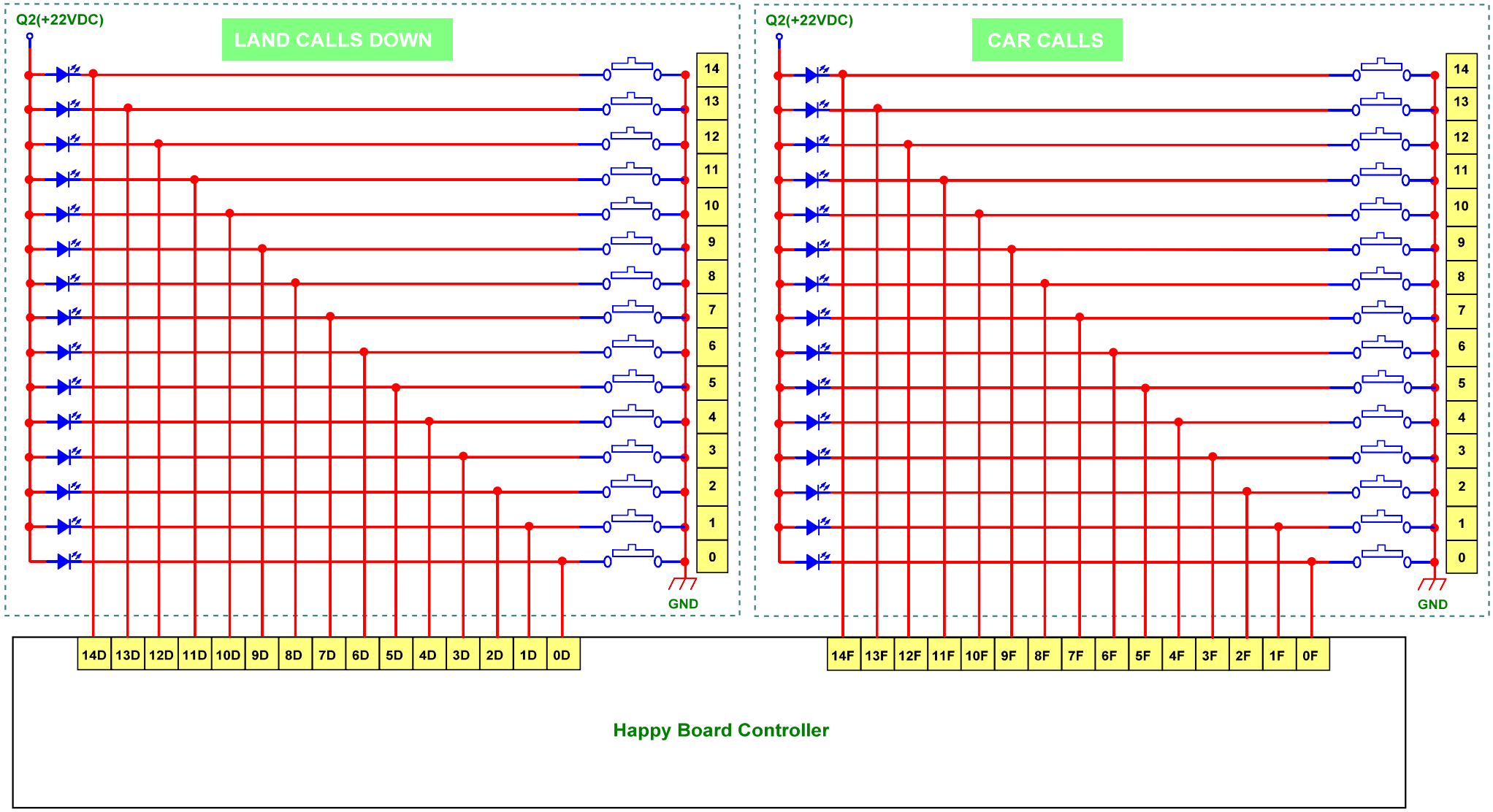
Project:

HAPPY BOARD CONTROLLER

Description of Components of " VVVF 2- Speed Motor , MANUAL / AUTOMATIC DOOR" Diagram

DO : Door Contact Mechanical Switch	CS : Car Step Switch
GO TOP: Overspeed Governor Top of Cabine	K2CDN : Auxiliary Switch for Down Direction Contactor
GO ROOM: Overspeed Governor Machine Room	K2CUP : Auxiliary Switch for UP Direction Contactor
GO PIT: Overspeed Governor Pit	K1CDN : Auxiliary Switch for Down Direction Contactor
OT-DN : Over Travel Down Mechanical Limit Switch Stop in Pit	K1CUP : Auxiliary Switch for UP Direction Contactor
OT-UP : Over Travel UP Mechanical Limit Switch	RDW : Door Contact Relay
RLT : Light Relay	OL : Overload Switch
ROP : Open Door Button	BOP : Bush Button to Reopen Automatic Door
RCL : Close Door Button	DJ : Door Jam Switch
RCM : Cam Relay For Swinging Door (GAMMA)	FCL : Push Button Close Door Immediately
UP : Pulse UP	EO : Limit Switch End of Opening
DN : Pulse Down	EC : Limit Switch End of Closing
LSUP : Limit Switch UP	FULL : Full Load Switch
LSDN : Limit Switch Down	LZ : Level Zone
SEN : Service Enable Switch	FIRE : Fireman Switch
SUP : Service Up Switch	PTC : PTC from the Motor
SDN : Service Down Switch	DUPLEX : Used in Duplex Mode to be Connected to other Board
CE : Car Emergency Push Button	COM1: Commun for Relay(UP,Down,Slow & Inspection) is connected to PIN Com to VVVf Drive

15 STOPS DOWN COLLECTIVE



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Page Description:

15 STOPS DOWN COLLECTIVE

Project:

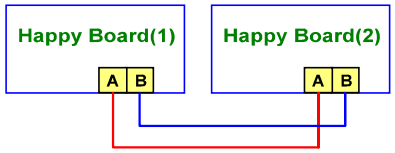
HAPPY BOARD CONTROLLER

DUPLEX DIAGRAM (LAND CALLS DOWN COLLECTIVE CONNECTION)

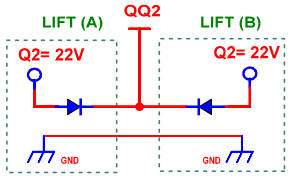
Connect a Happy Controller to another Happy Controller

to work in Duplex Mode

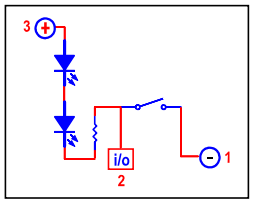
Connect A to A , and B to B

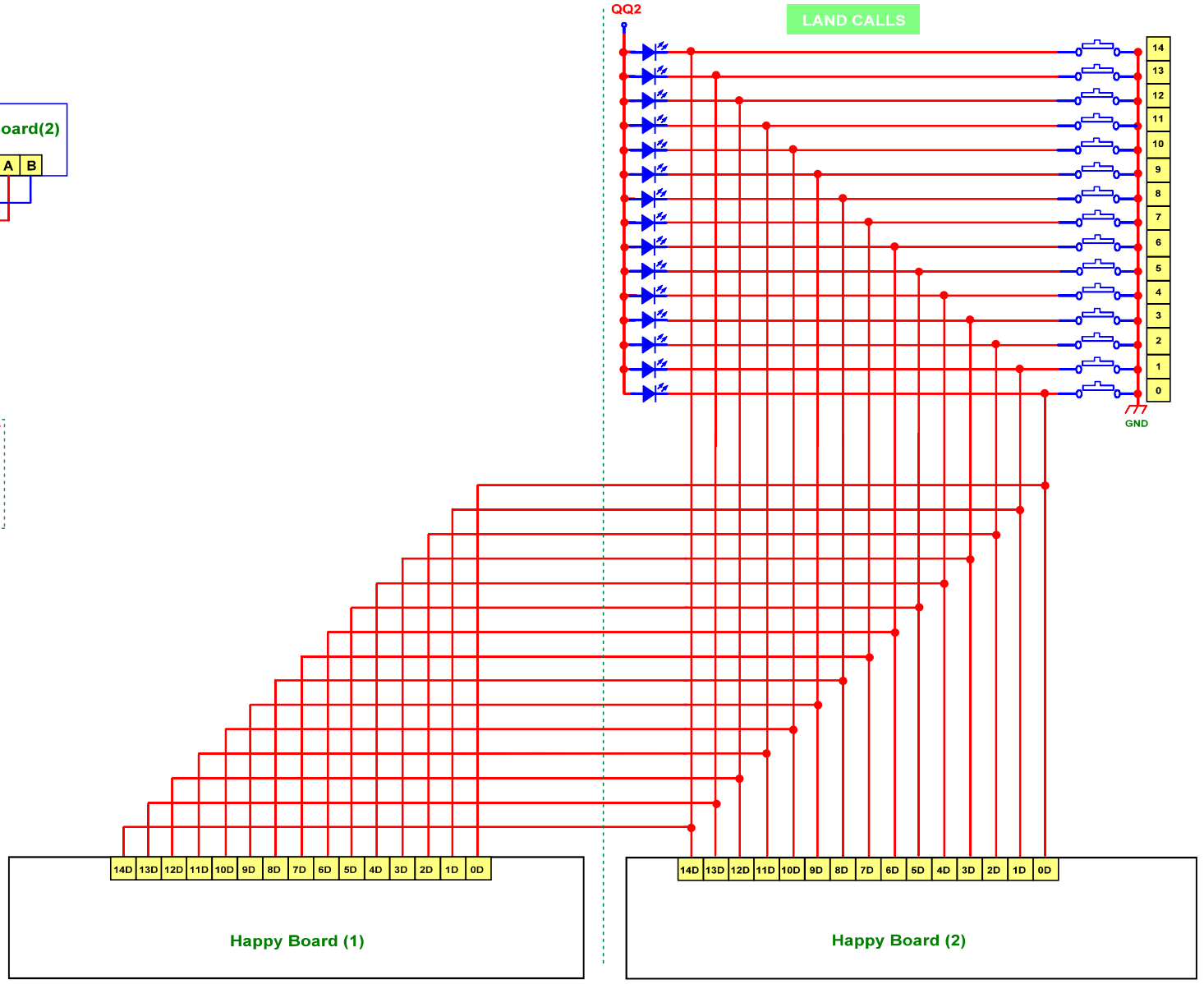


DUPLEX



Push Button Diagram





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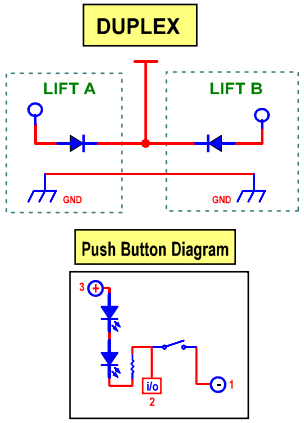
DUPLEX DIAGRAM (DOWN COLLECTIVE)

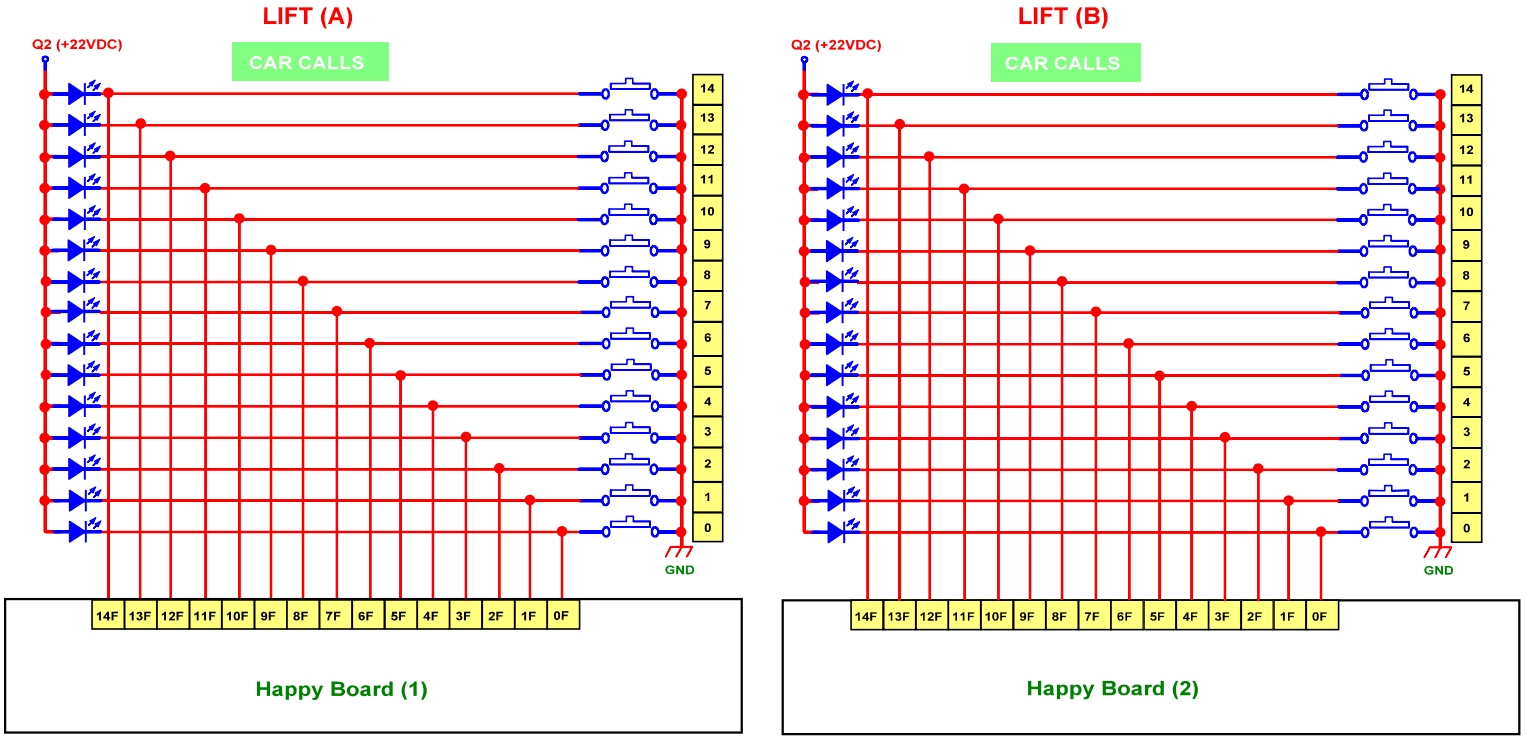
Project:

HAPPY BOARD CONTROLLER

DUPLEX DIAGRAM (CAR CALLS DOWN COLLECTIVE CONNECTION)

DUPLEX DIAGRAM





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DUPLEX DIAGRAM

(DOWN COLLECTIVE)

Project:

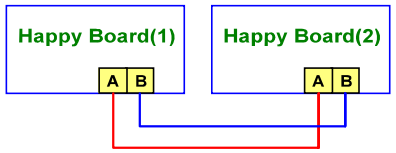
HAPPY BOARD CONTROLLER

DUPLEX DIAGRAM (LAND CALLS UP COLLECTIVE CONNECTION)

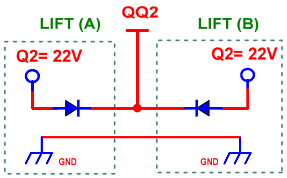
Connect a Happy Controller to another Happy Controller

to work in Duplex Mode

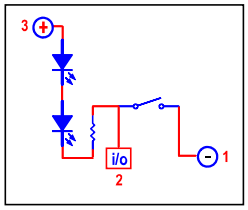
Connect A to A , and B to B

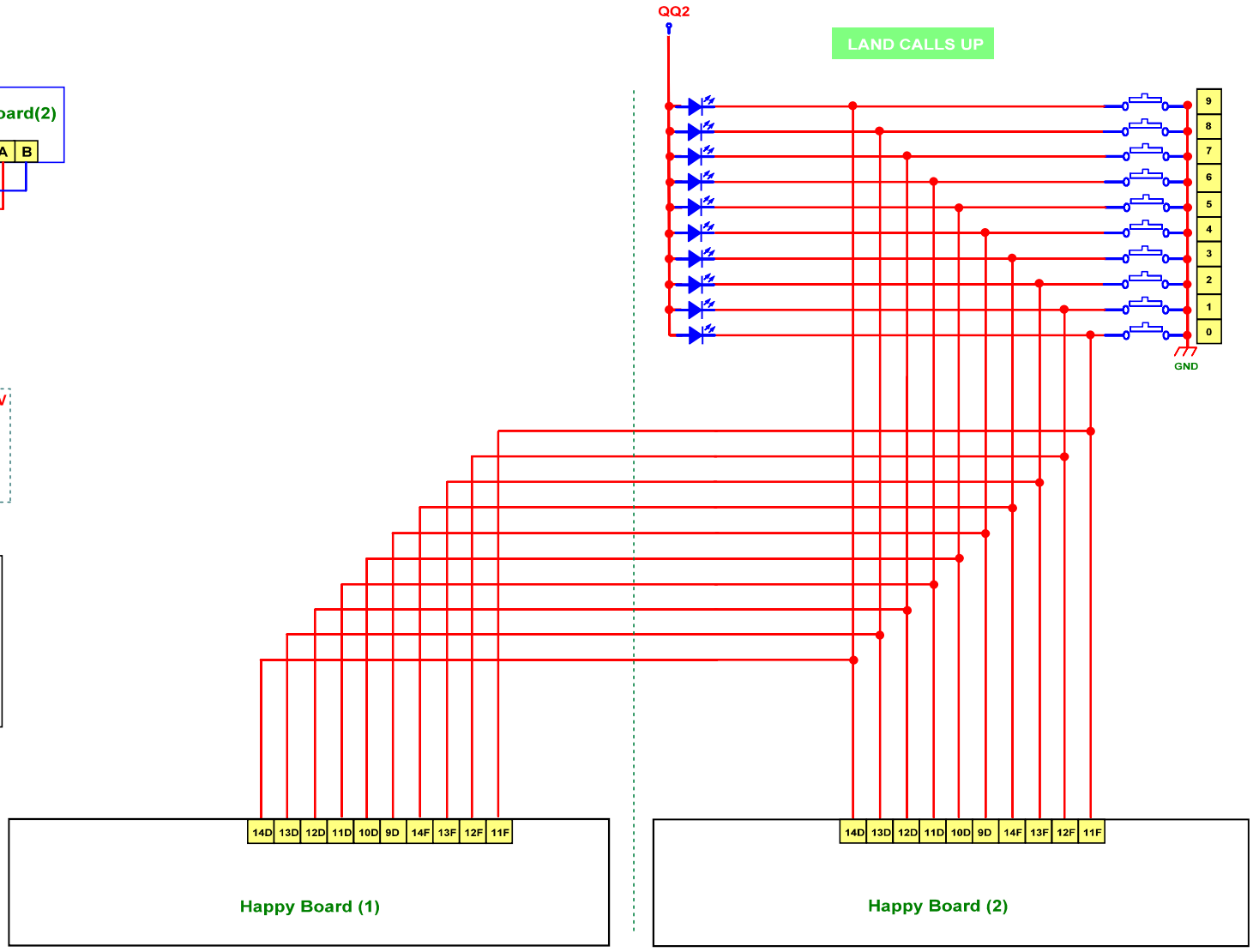


DUPLEX



Push Button Diagram





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Page Description:

DUPLEX DIAGRAM
11 STOPS FULL COLLECTIVE

Project:

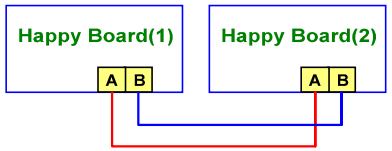
HAPPY BOARD CONTROLLER

DUPLEX DIAGRAM (LAND CALLS DOWN COLLECTIVE CONNECTION)

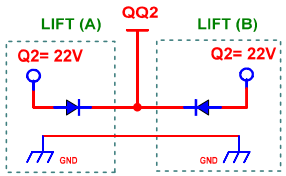
Connect a Happy Controller to another Happy Controller

to work in Duplex Mode

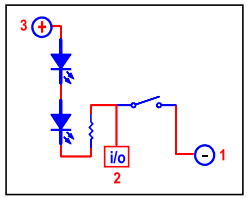
Connect A to A , and B to B

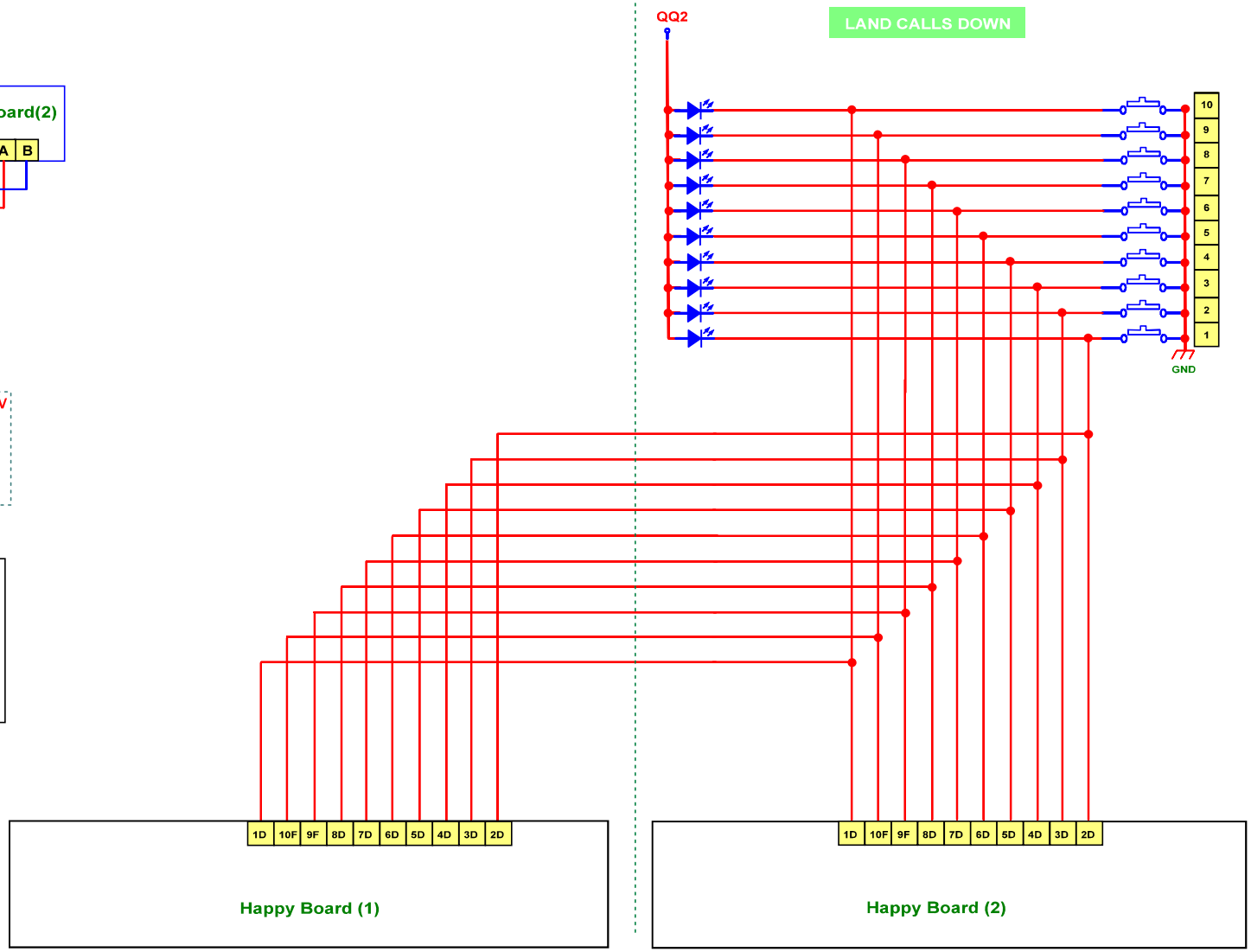


DUPLEX



Push Button Diagram





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Page Description:

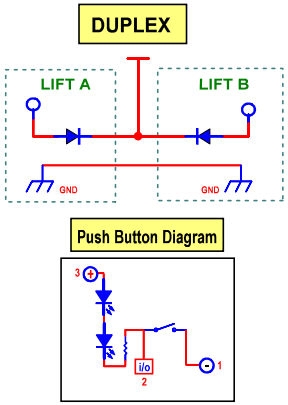
DUPLEX DIAGRAM
11 STOPS FULL COLLECTIVE

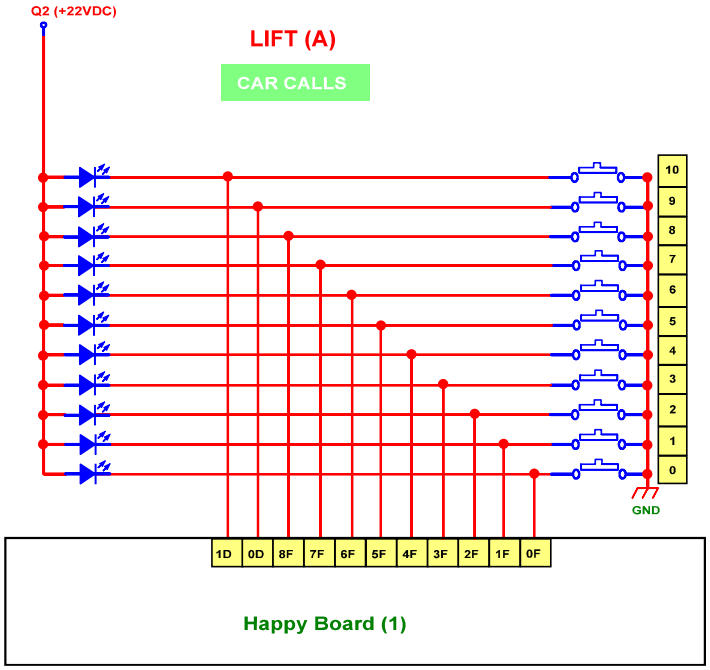
Project:

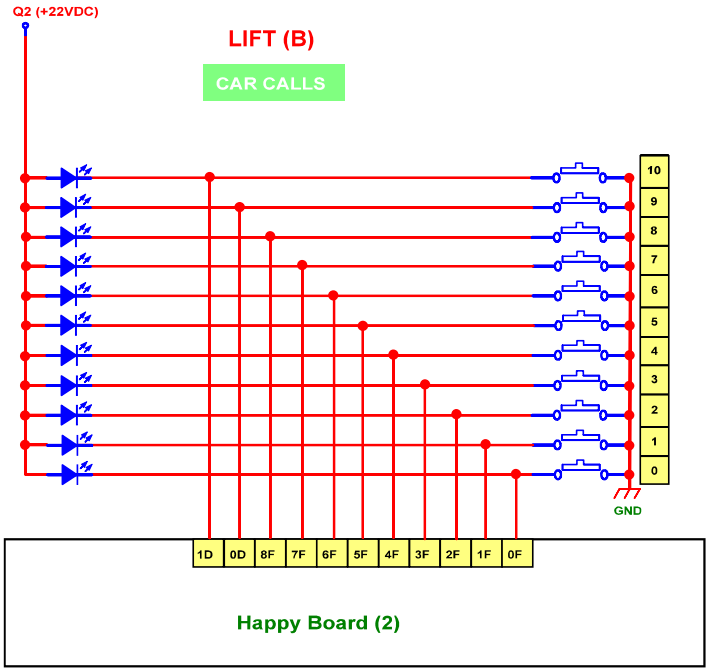
HAPPY BOARD CONTROLLER

DUPLEX DIAGRAM (CAR CALLS FULL COLLECTIVE CONNECTION)

DUPLEX DIAGRAM







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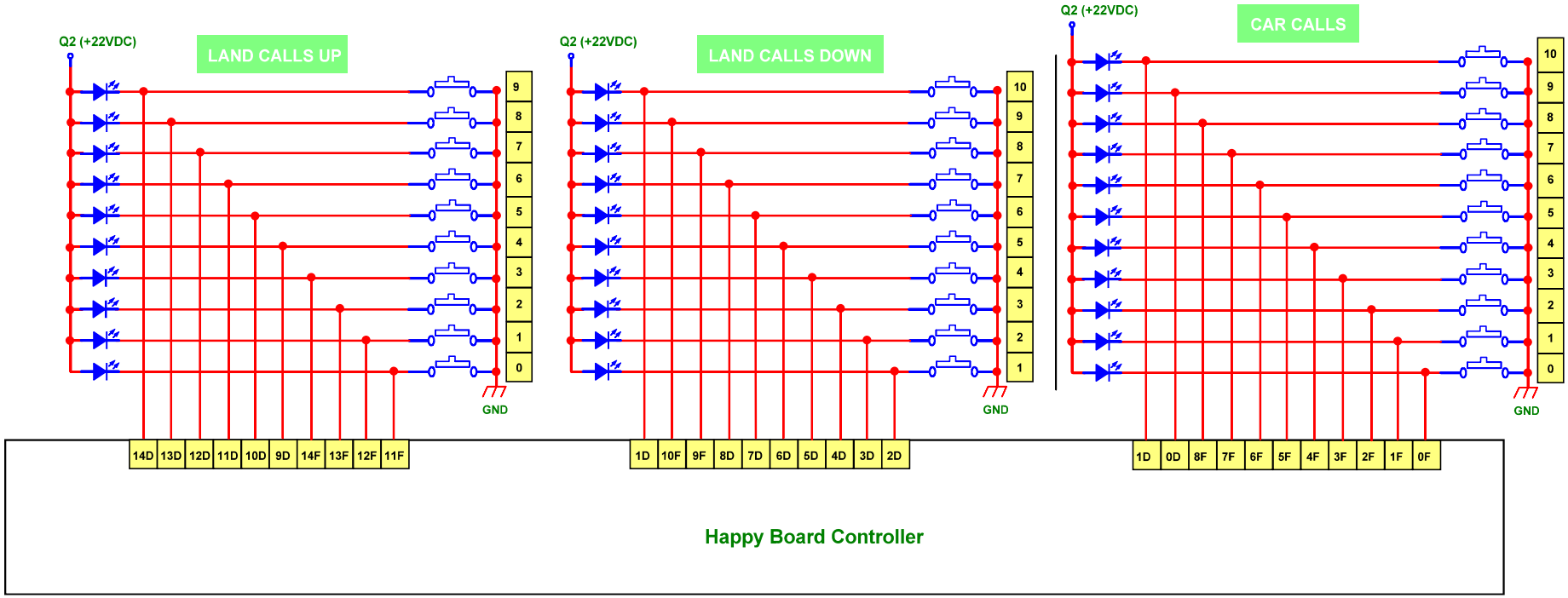
Page Description:

DUPLEX DIAGRAM
11 STOPS FULL COLLECTIVE

Project:

HAPPY BOARD CONTROLLER

11 STOPS FULL COLLECTIVE



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Page Description:

11 STOPS FULL COLLECTIVE

Project:

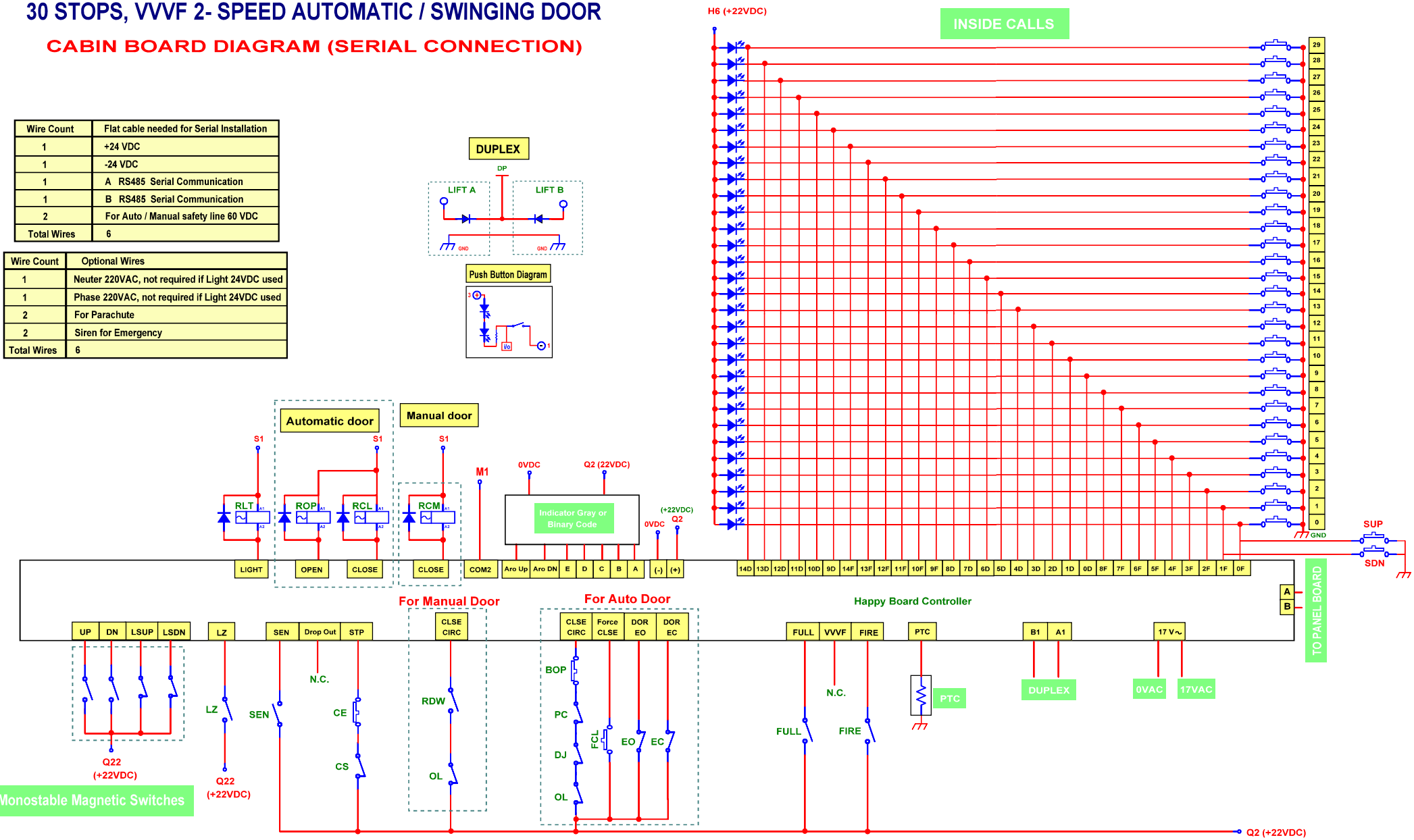
HAPPY BOARD CONTROLLER

30 STOPS, VVVF 2- SPEED AUTOMATIC / SWINGING DOOR

CABIN BOARD DIAGRAM (SERIAL CONNECTION)

Wire Count	Flat cable needed for Serial Installation
1	+24 VDC
1	-24 VDC
1	A RS485 Serial Communication
1	B RS485 Serial Communication
2	For Auto / Manual safety line 60 VDC
Total Wires	6

Wire Count	Optional Wires
1	Neuter 220VAC, not required if Light 24VDC used
1	Phase 220VAC, not required if Light 24VDC used
2	For Parachute
2	Siren for Emergency
Total Wires	6



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30 STOPS, VVVF 2- SPEED AUTOMATIC / SWINGING DOOR

Project:

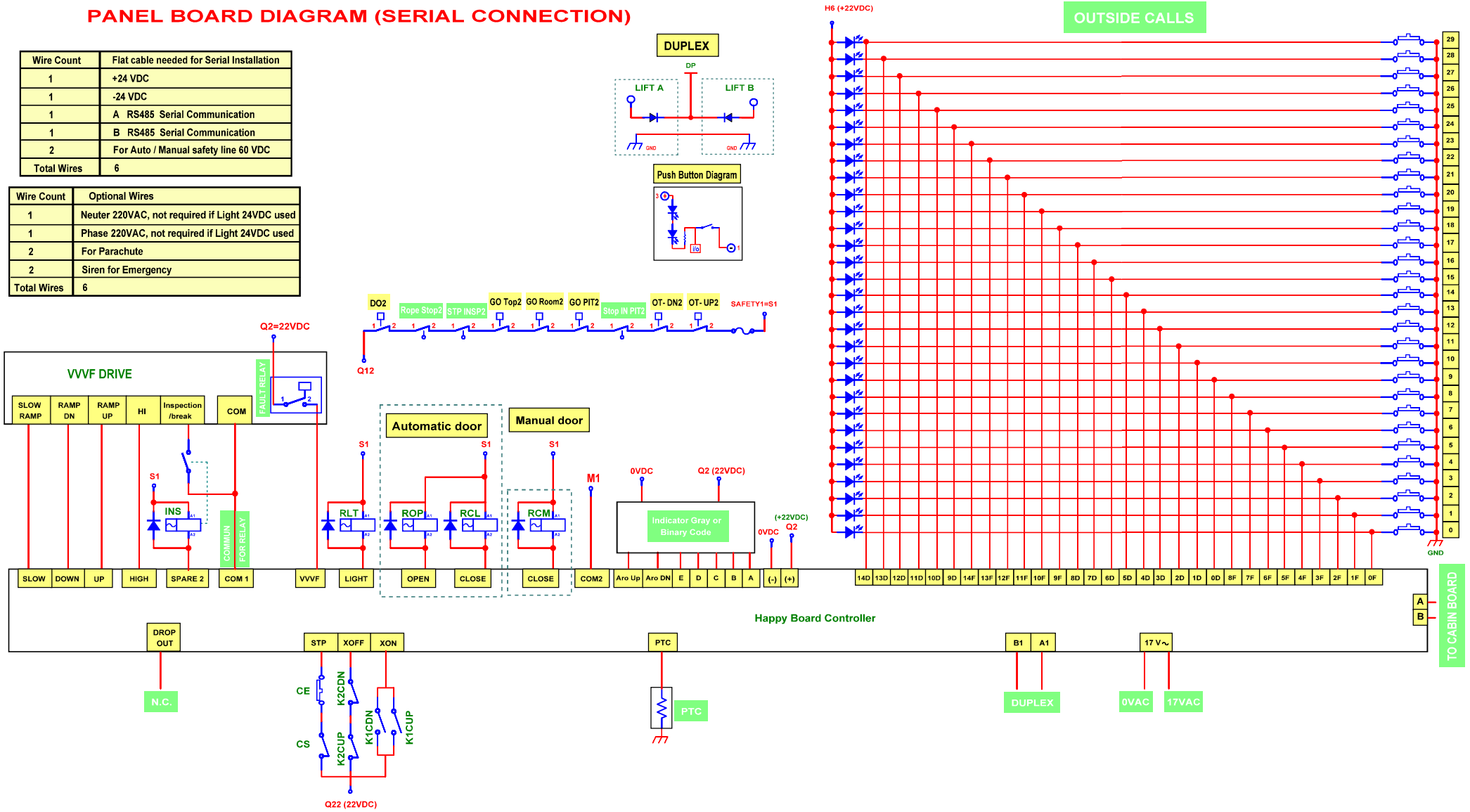
HAPPY BOARD CONTROLLER

30 STOPS, VVVF 3- SPEED AUTOMATIC / SWINGING DOOR

PANEL BOARD DIAGRAM (SERIAL CONNECTION)

Wire Count	Flat cable needed for Serial Installation
1	+24 VDC
1	-24 VDC
1	A RS485 Serial Communication
1	B RS485 Serial Communication
2	For Auto / Manual safety line 60 VDC
Total Wires	6

Wire Count	Optional Wires
1	Neuter 220VAC, not required if Light 24VDC used
1	Phase 220VAC, not required if Light 24VDC used
2	For Parachute
2	Siren for Emergency
Total Wires	6



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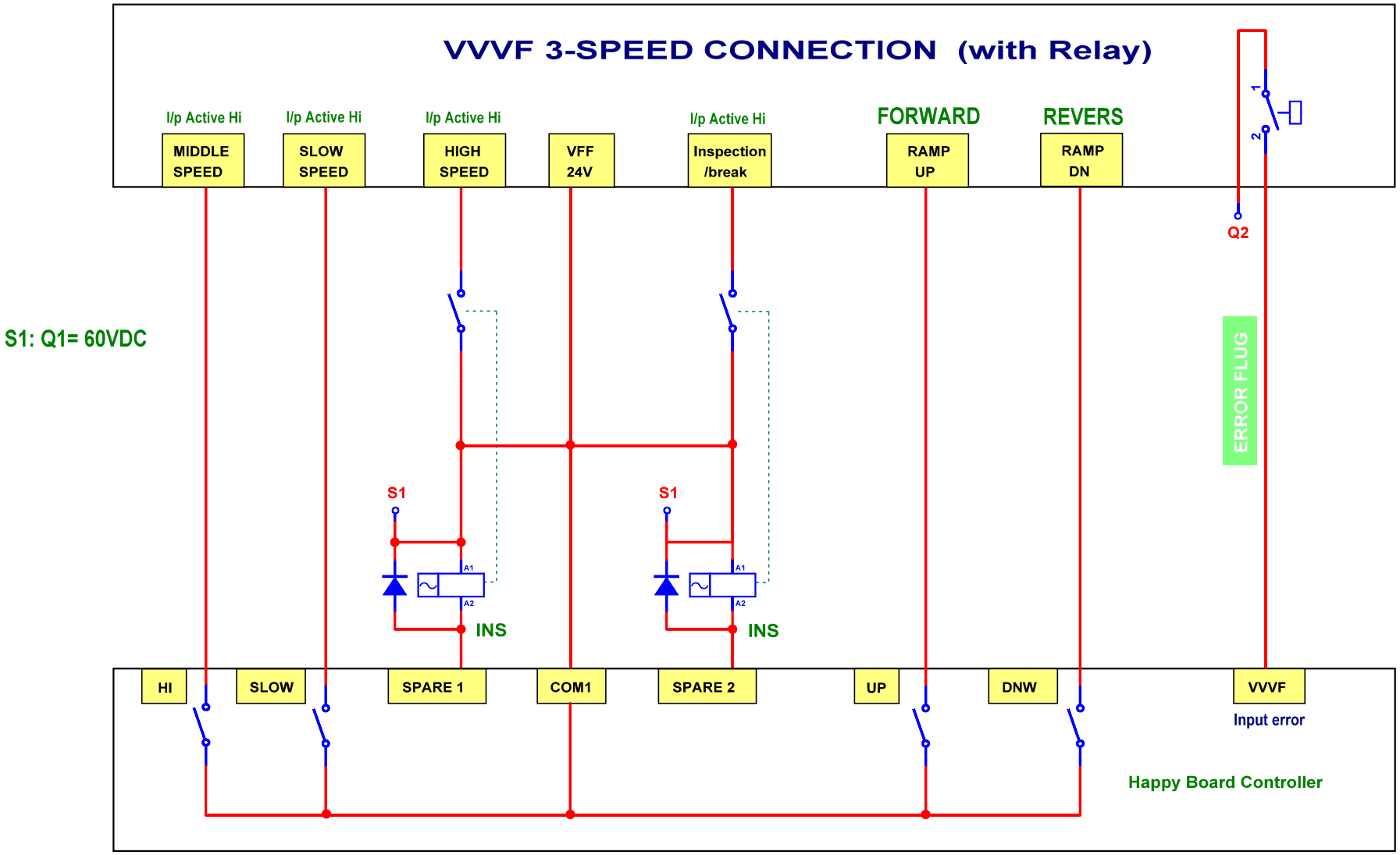
Page Description: 30 STOPS, VVVF 3- SPEED AUTOMATIC / SWINGING DOOR

Project: HAPPY BOARD CONTROLLER

VVVF 3-SPEED CONNECTION (with Relay)



To program Input of VVVF as +ve input use happy board with Relay

I/p Active Hi: Input Active High

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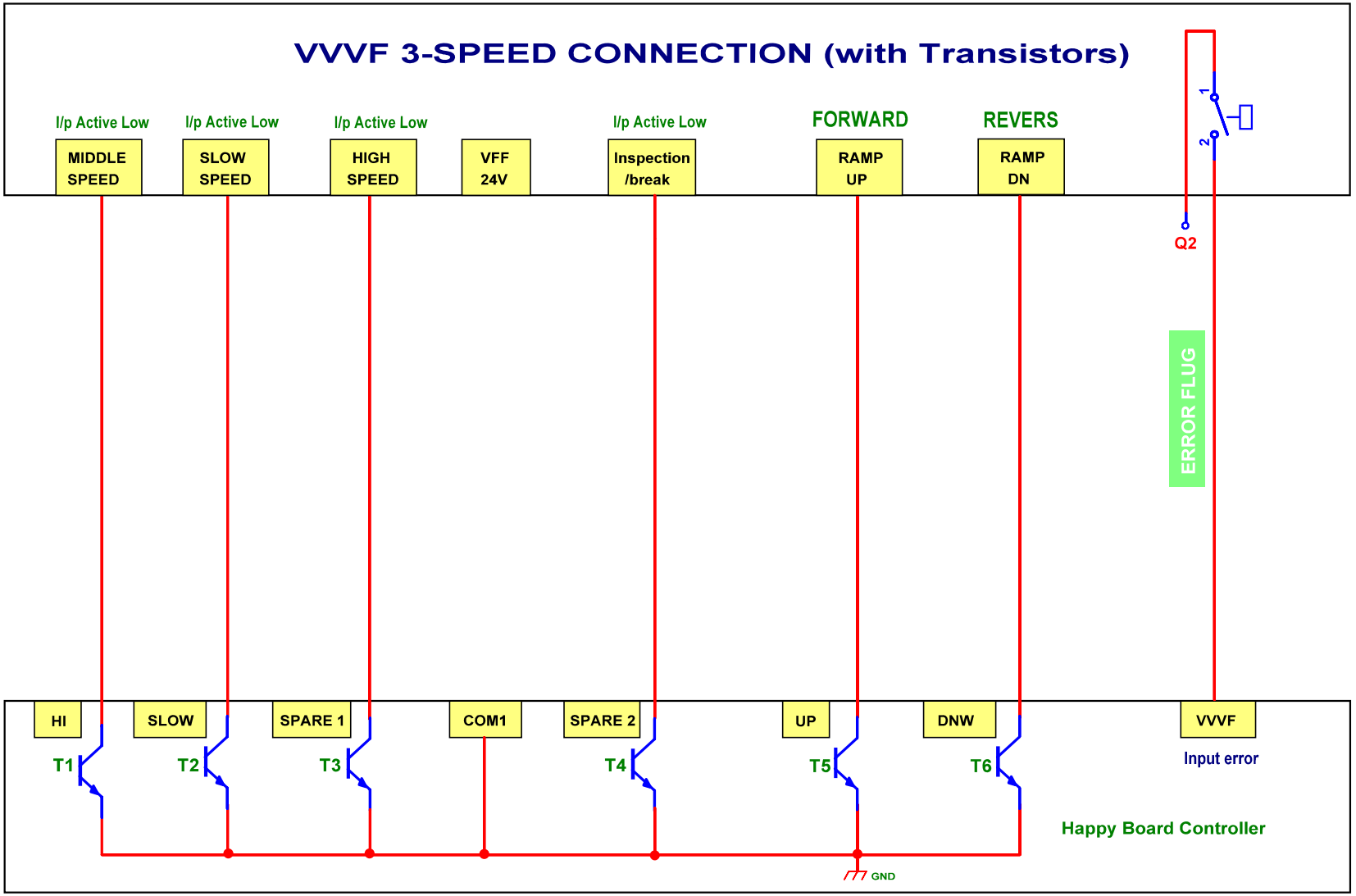
Page Description:

VVVF 3- SPEED CONNECTION
(with Relay)

Project:

HAPPY BOARD CONTROLLER

VVVF 3-SPEED CONNECTION (with Transistors)



To program VVVF Input as negative input use happy board without Relay, if not you must add external Relay or use Happy board with Relay

I/p Active Low: Input Active Low

T1,T2,T3,T4,T5,T6: Transistors

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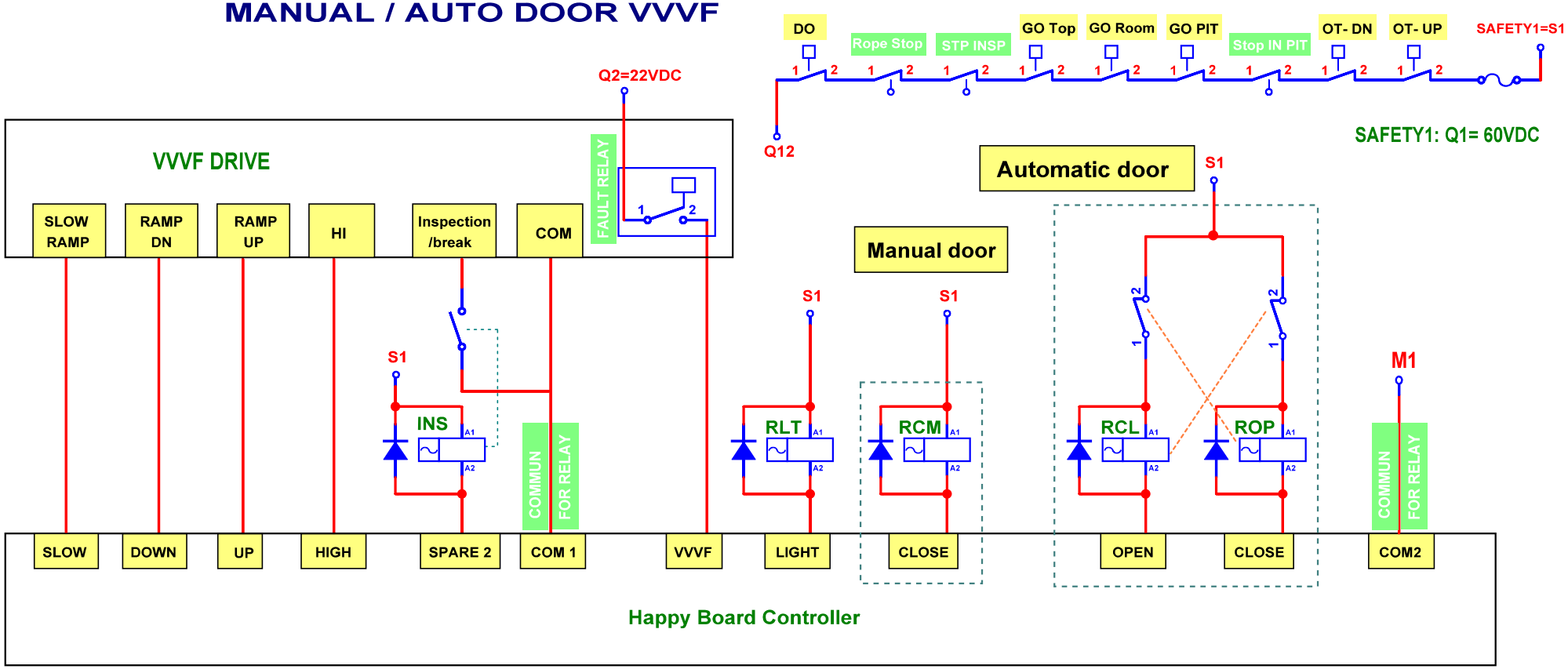
Page Description:

VVVF 3- SPEED CONNECTION
(with Transistors)

Project:

HAPPY BOARD CONTROLLER

MANUAL / AUTO DOOR VVVF



DO : Door Contact Mechanical Switch	RLT : Light Relay
STP INSP: Stop Inspection Top of Cabine	RCM : Cam Relay for Swinging Door
Go TOP : Over Speed Governor Top of Cabine	RCL : Close Door Relay
GO ROOM: Over Speed Governor Machine Room	ROP : Open Door Relay
GO PIT : Over Speed Governor PIT	COM1: Commun for Relay(Slow,UP,Down,High & Inspection) is connected to pin Com in VVVF Drive
OT-DN : Over Travel Down Mechanical Limit Switch	
OT-UP : Over Travel Up Mechanical Limit Switch	COM2: Commun for Relay(Light,Close,Open) is connected to 0V(M1)

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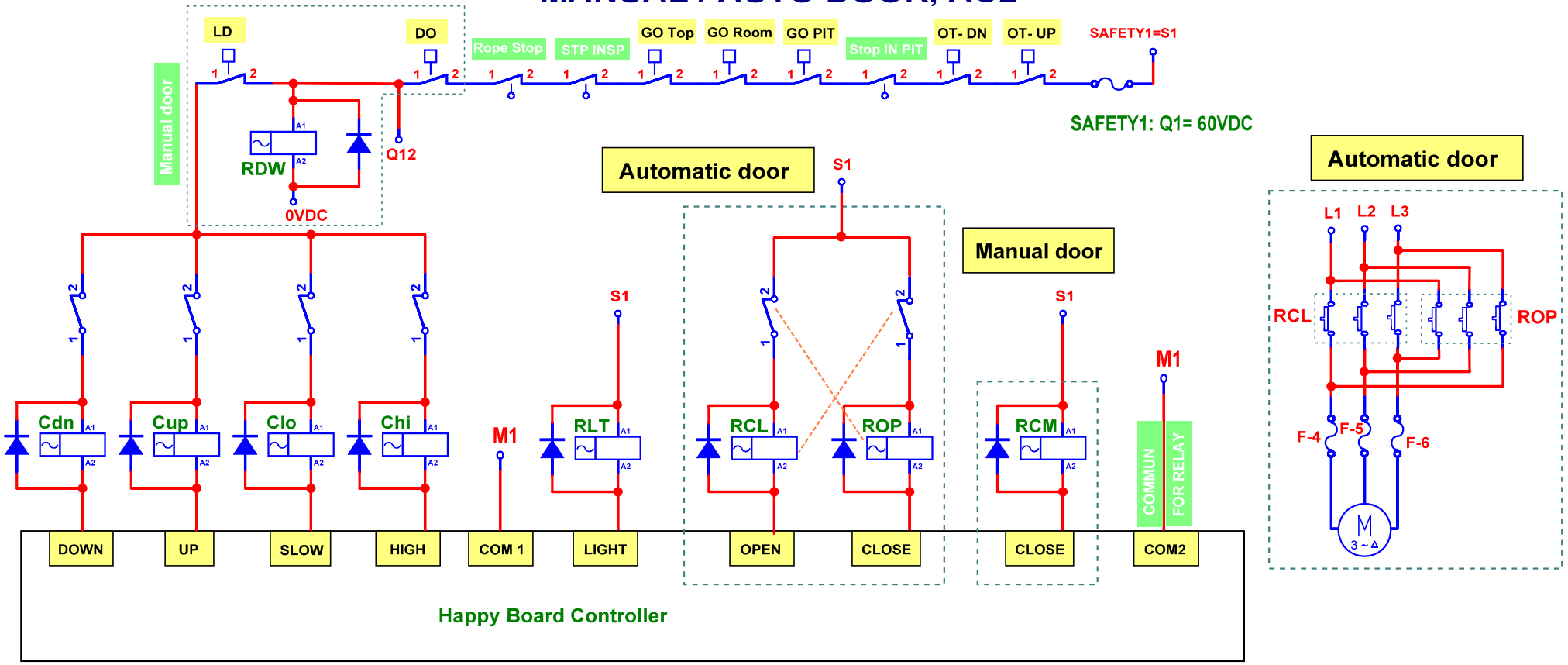
Page Description: MANUAL / AUTO DOOR VVVF

Project: HAPPY BOARD CONTROLLER

MANUAL / AUTO DOOR, AC2



LD : Lock Door Contact	Kclo : Auxiliary Switch for Low Speed Contactor should be N.C
DO : Door Contact Mechanical Switch	Cdn : Down Direction Contactor
STP INSP: Stop Inspection Top of Cabine	Cup : Up Direction Contactor
OT-UP : Over Travel Up Mechanical Limit Switch	Clo : Slow Speed Relay
Rdw : Door Contact Relay	Chi : High Speed Relay
Kcup : Auxiliary Switch for UP Direction Contactor should be N.C	COM1: Commun for Relay(UP,Down,Slow &High) is connected to 0V (M1)
Kcdn : Auxiliary Switch for Down Direction Contactor should be N.C	COM2: Commun for Relay(Light,Close,Open) is connected to 0V(M1)

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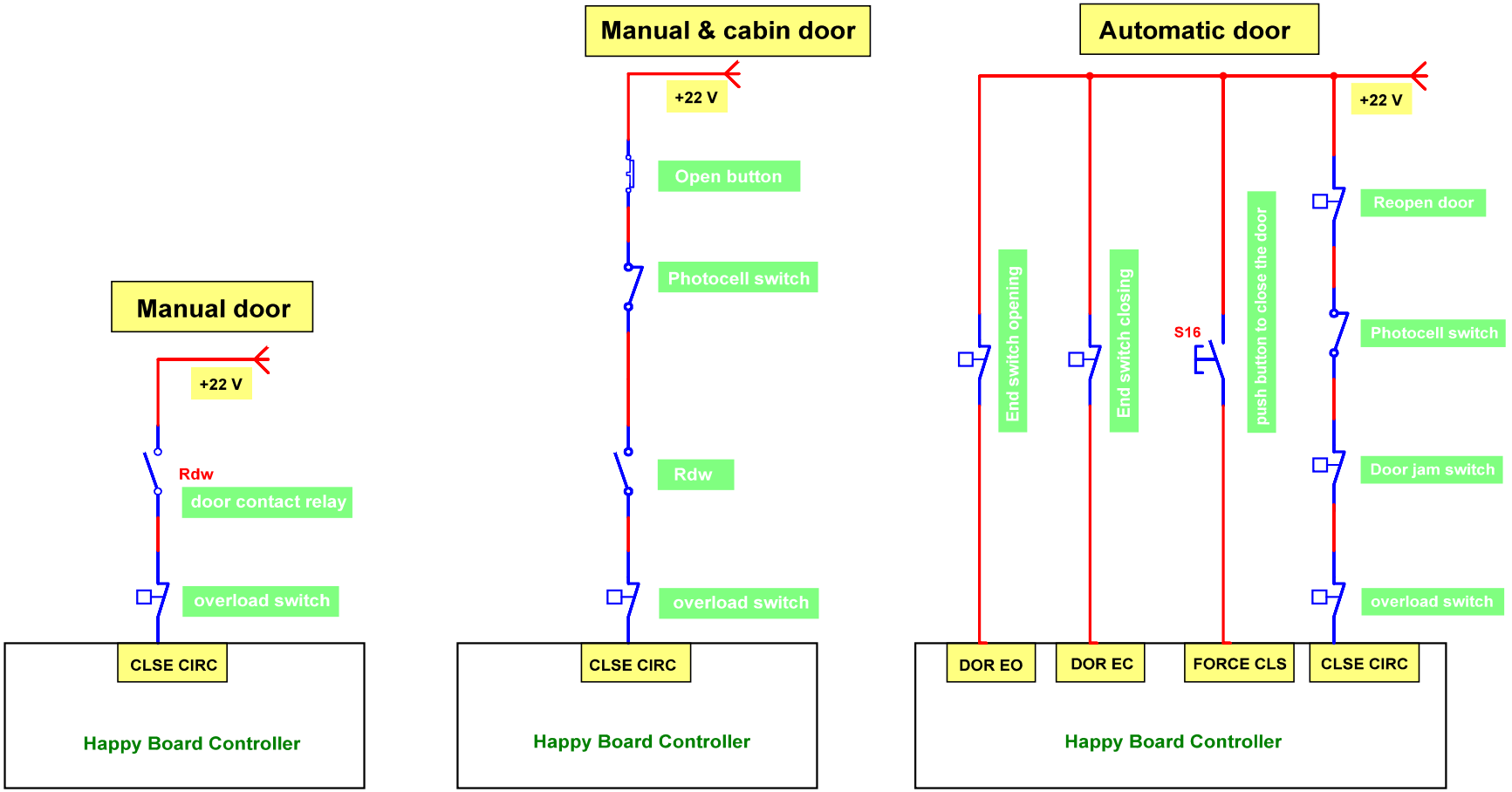
Page Description:

MANUAL / AUTO DOOR , AC2

Project:

HAPPY BOARD CONTROLLER

TYPE OF DOOR



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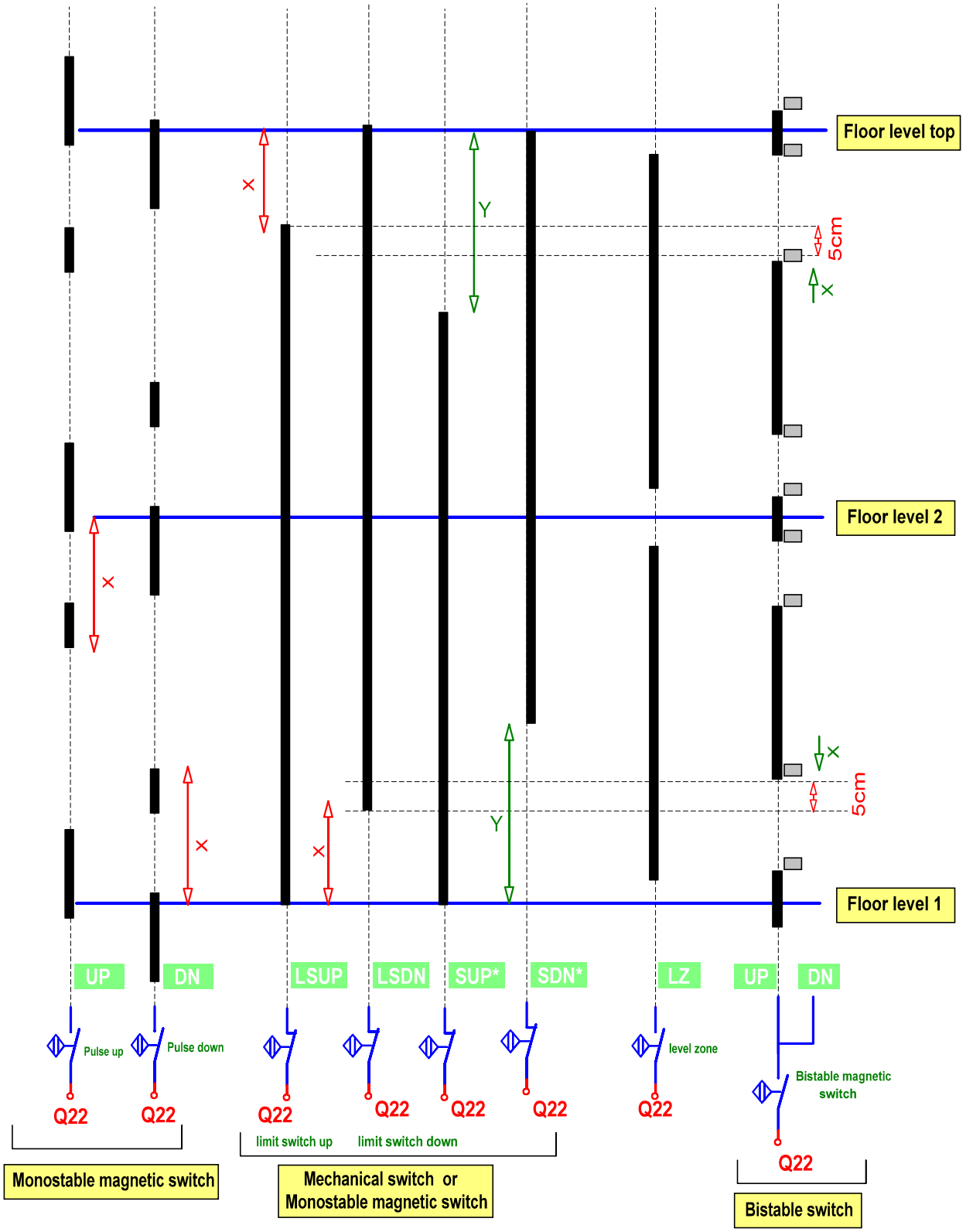
Page Description:

TYPE OF DOOR

Project:

HAPPY BOARD CONTROLLER

MAGNETIC SWITCH



▭ : Bistable magnet

Y : distance to medium speed before 2 floors

X : distance to slow speed =1m or 100cm

(*) : Only used as extra limit switch for 3-speed VVVF

▬ : switch is ON

speed (m/s)	distance (mm)
0.63	500
0.8	1000
1.0	1200
1.2	1350

Project: HAPPY BOARD CONTROLLER

Page Description: MAGNETIC SWITCH

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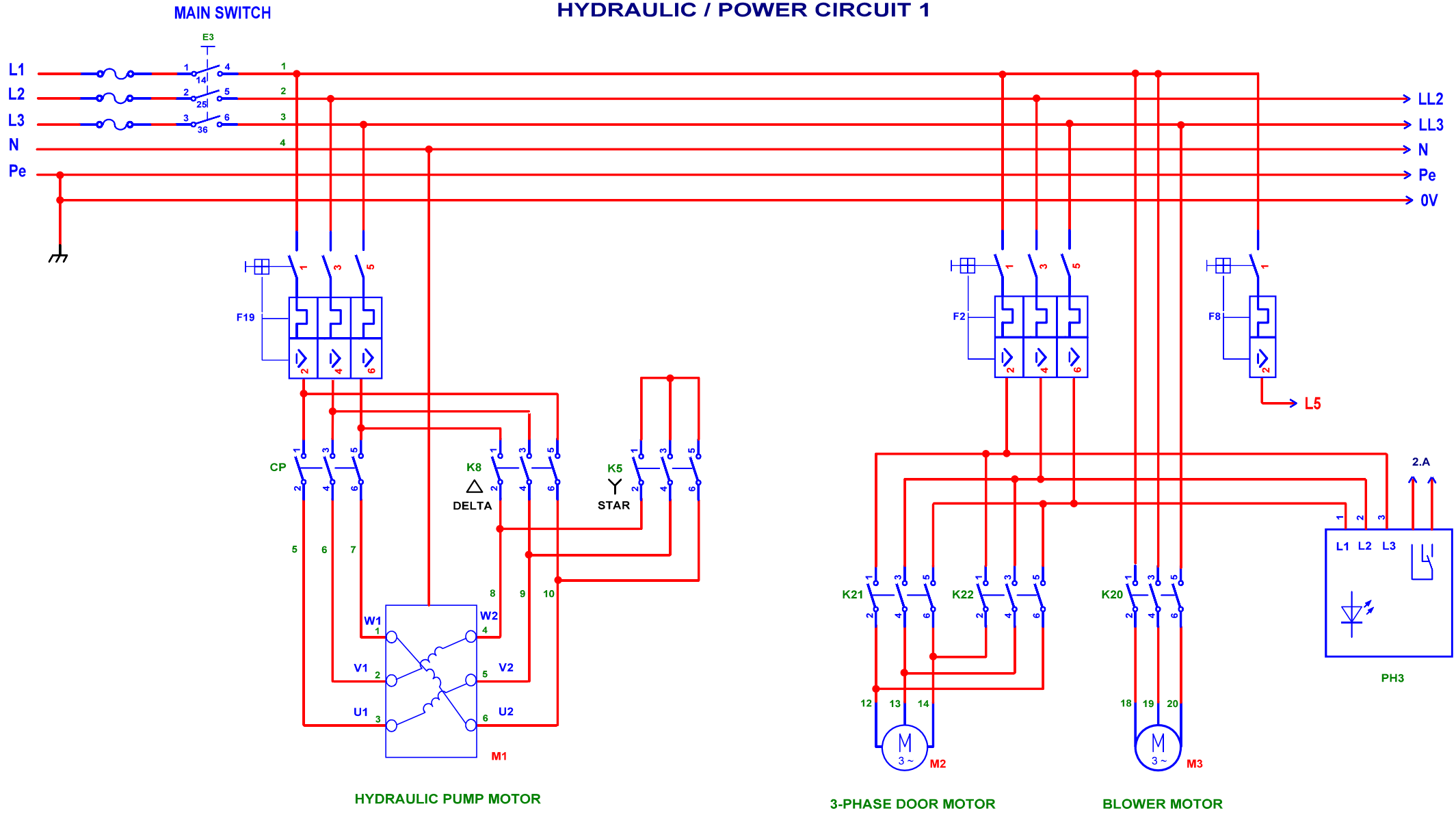
HYDRAULIC / POWER CIRCUIT 1



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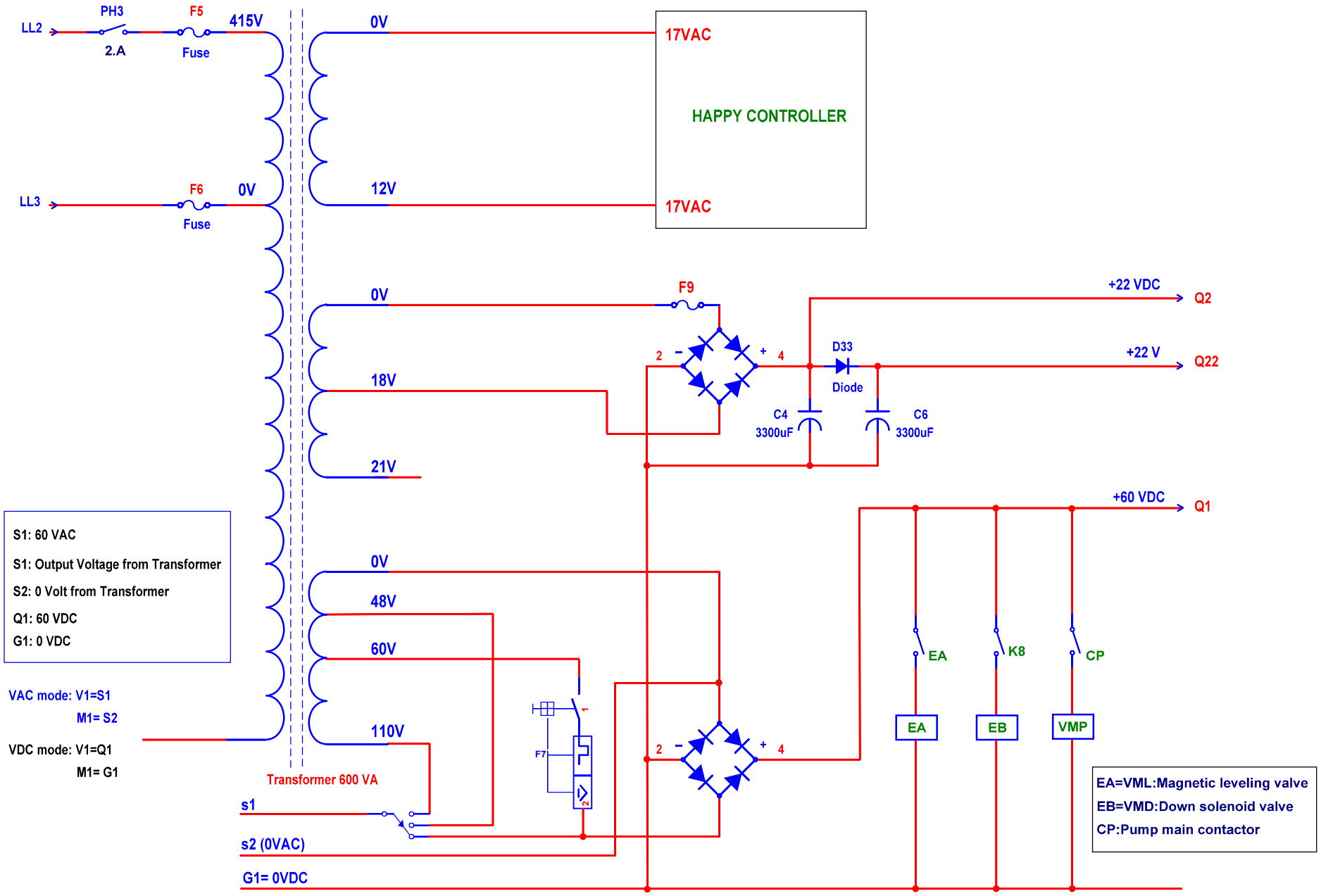

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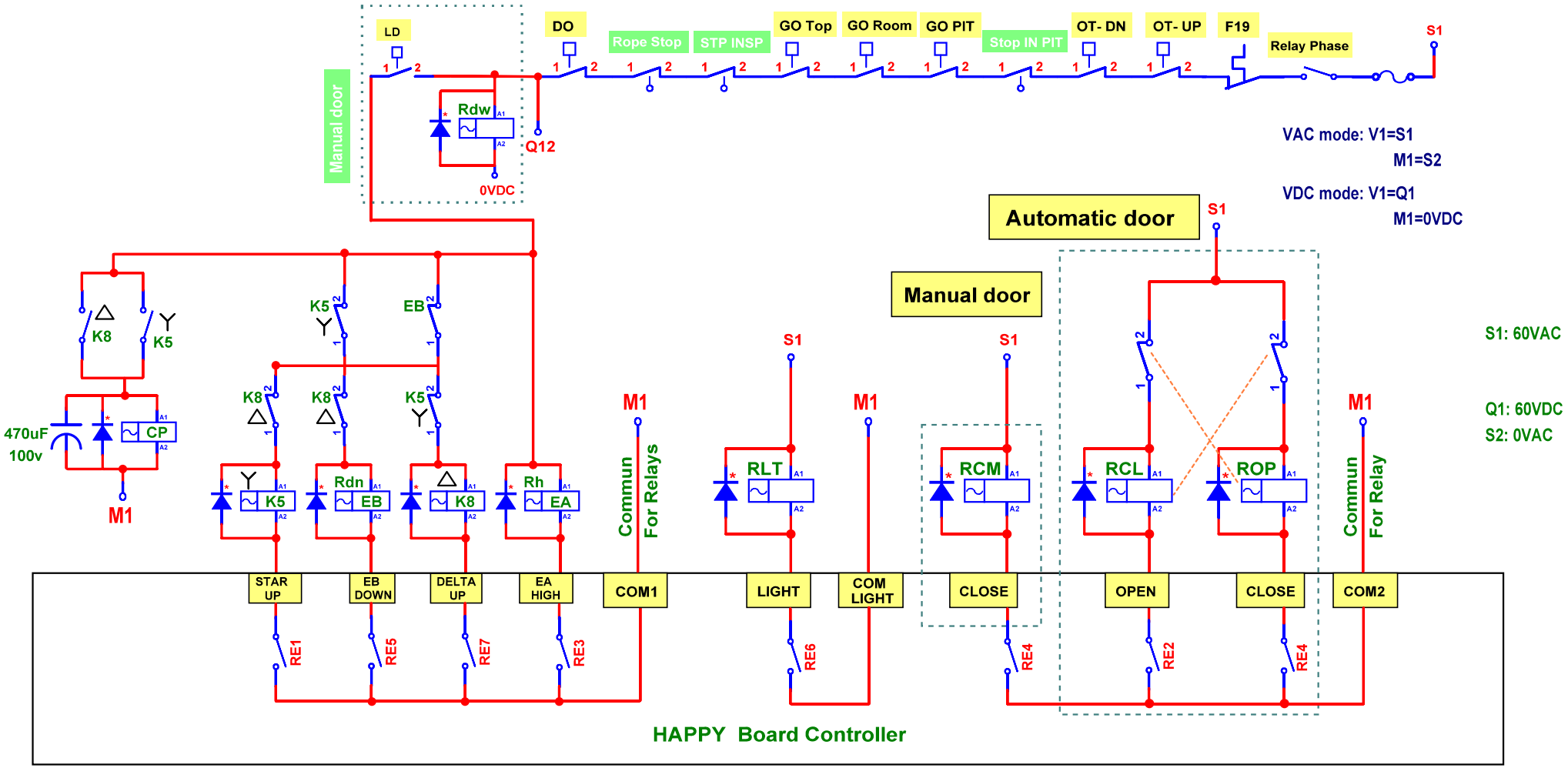
HYDRAULIC

AUTOMATIC / MANUAL DOOR



(*): Do not install diodes with contactors if S1 is AC Voltage

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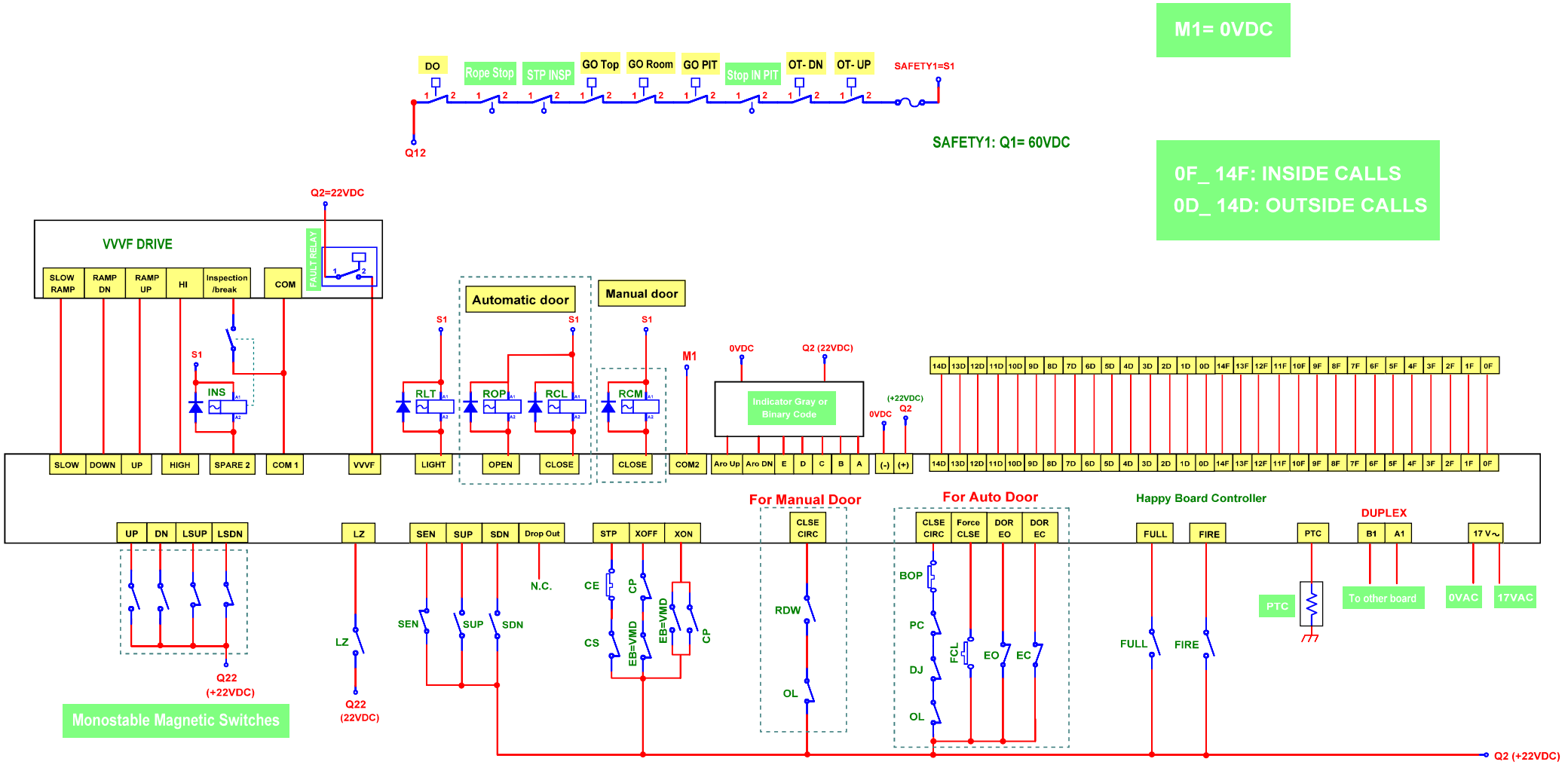
HYDRAULIC	Page Description: AUTOMATIC / MANUAL DOOR	Project: HAPPY BOARD CONTROLLER

Hydraulic: 2-Speed Motor - HAPPY 15 STOPS

MANUAL / AUTOMATIC DOOR



CP: Pump main contactor

EB= VMD: Down solenoid valve

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HYDRAULIC	Page Description: 2-Speed Motor - HAPPY 15 STOPS MANUAL / AUTOMATIC DOOR	Project: HAPPY BOARD CONTROLLER