

# MRS Motion Controller

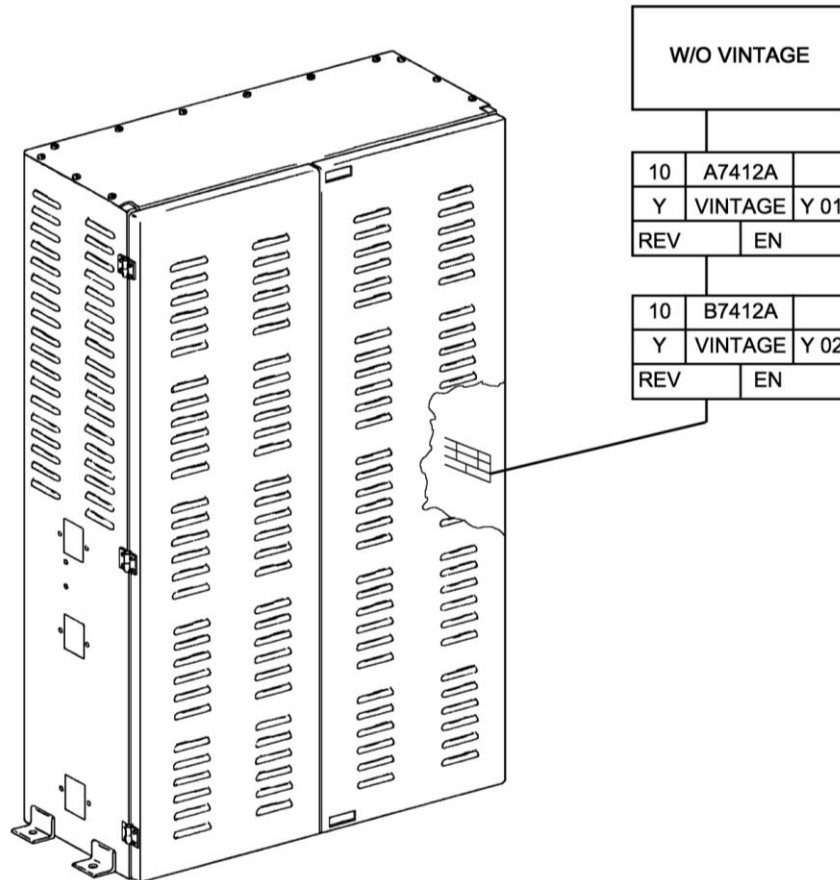
## Spare Parts Leaflet

### 10-7412A

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# OBSOLESCENCE NOTICE

The product covered in this SPL has been designated as obsolete and is no longer supported. See TIP 32.2-1, *Obsolete Components*, for potential upgrade. Replacement lower-level parts listed within and unique to this design will be reviewed for obsolescence.



This document does not contain any technical data subject to EAR or ITAR

### SERVICE ENGINEERING

Otis Elevator Company

Bloomfield, Connecticut USA

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**Leaflet Description**

The leaflet describes the lowest replaceable units (LRU) for the MRS relay controller.

**Leaflet Revisions**

<b>Date Revised</b>	<b>Subject Matter Expert</b>	<b>Reason for Revision</b>
June 1997	Jeffrey S. Costley	New SPL
June 16, 2004	John Dwyer	Add PCB guide to page 22
June 15, 2005	John Dwyer	Correction to rectifier p/n on p.18
August 30, 2006	John Dwyer	Updated contactor parts list on pp. 3–4
November 4, 2009	Matt Fournier	Updated 613BY arrangement and related illustration on page 9.
January 12, 2011	Matt Fournier	The description of p/n 235DN2 on p. 11 was modified to say 341 VA instead of 750 VA
March 16, 2011	Matt Fournier	pp. 5, 17, and 18 added substitute parts type AAA613DL
October 12, 2011	Matt Fournier	Corrected an incorrect page reference on p. 21
January 4, 2012	Matt Fournier	Updated relay information on pp. 5, 17, and 18.
May 12, 2021	Ali Bozorgzadeh	Corrected Ref. 5 on p. 14
September 21, 2022	Juan Murillo	Updated to include OBSOLESCENCE note on cover

**Related Drawings**

<b>Drawing No.</b>	<b>Title</b>	<b>Drawing No.</b>	<b>Title</b>
7412A	MRS Controller	---	---
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**Related Documents**

<b>Document ID</b>	<b>Title</b>
TIP 1.2.0-38	P613AP6, 7, and 9 Aromat Relay Replacements

**Subject Matter Expert**

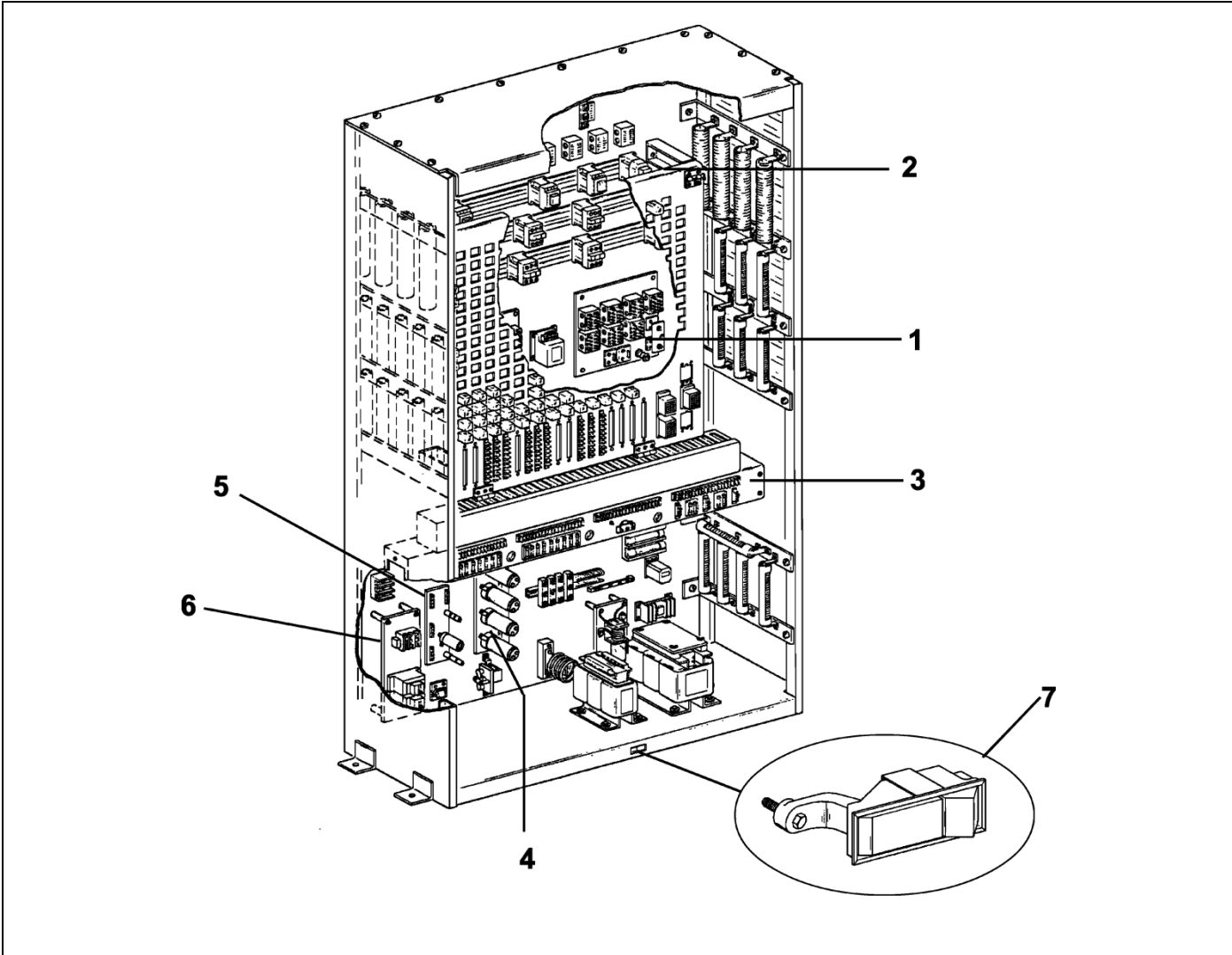
<b>Name</b>	<b>Department</b>
Ali Bozorgzadeh	OSC Service Engineering

**About Spare Parts Leaflets...**

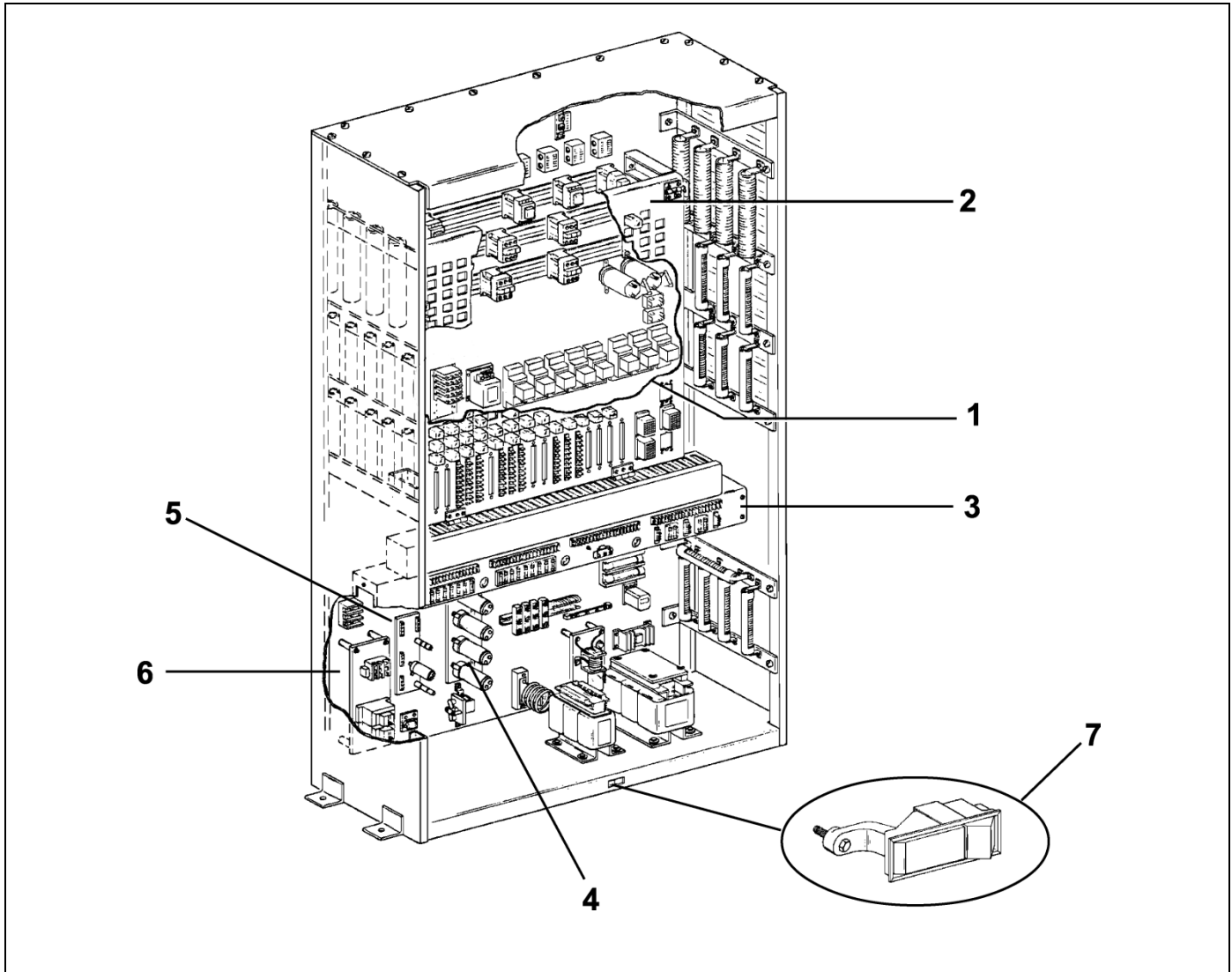
This document lists the lowest replaceable units (LRUs) for the standard version of the product. The LRUs are chosen by a team of Otis associates representing engineering and manufacturing.

While goal of this document is to make parts identification as easy as possible, the document cannot be all-inclusive. Elevator and escalator contracts classified as "special" or "custom" are not addressed here. For such contracts, please refer to specified information, the contract folder, TIPs, Field Education Articles, Construction Letters, etc. for further information.

If you have any suggestions about this document, please contact the subject matter expert listed on this page.



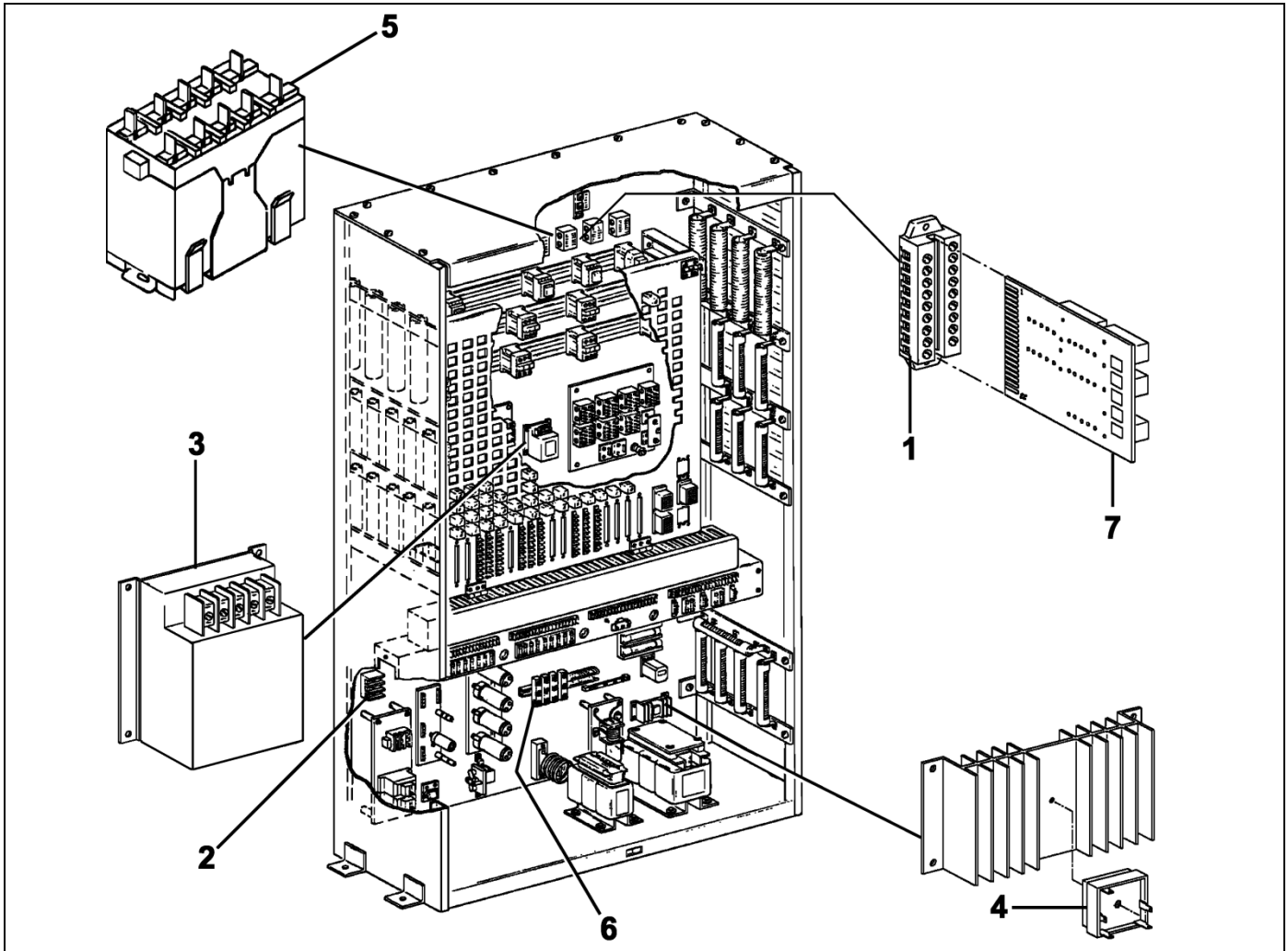
REF. No.	DESCRIPTION		👁 PAGE	SYMBOL
1	Type 8200AJ Door Operator Panel		Page 15	DOP
2	Type 7412C Relay Panel		Pages 19-21	---
3	Type 7412B 7770 Sub-Assembly Panel		Page 13	---
4	Type 6938T Condenser Panel		Page 17	G5F
5	7412D Sub-Assembly RCR Panel		Page 18	---
6	Contactor	NEMA 1 7151AB1 7151AB5 7151AB105	👁 Detail in SPL 10-7151A	---
	Contactor	NEMA 2 7151AB2 AAA638W2 AAA638W107		
	Contactor	NEMA 3 7151AD1 AAA638D2 AAA638D107		
7	Latch		P94GA1	---



REF. No.	DESCRIPTION		Page	SYMBOL
1	QL Door Operator Parts		Page 16	---
2	Type 7412C Relay Panel		Pages 19-21	---
3	Type 7412B QL Sub-Assembly Panel		Page 14	---
4	Type 6938T Condenser Panel		Page 17	G5F
5	7412D1 Sub- Assembly RCR Panel		Page 18	---
6	Contactactor NEMA 1	7151AB1 7151AB5 7151AB105	Detail in SPL 10-7151A	---
	Contactactor NEMA 2	7151AB2 AAA638W2 AAA638W107		
	Contactactor NEMA 3	7151AD1 AAA638D2 AAA638D107		
7	Latch		P94GA1	---

# Relays (W/O and Y 01 Vintage)

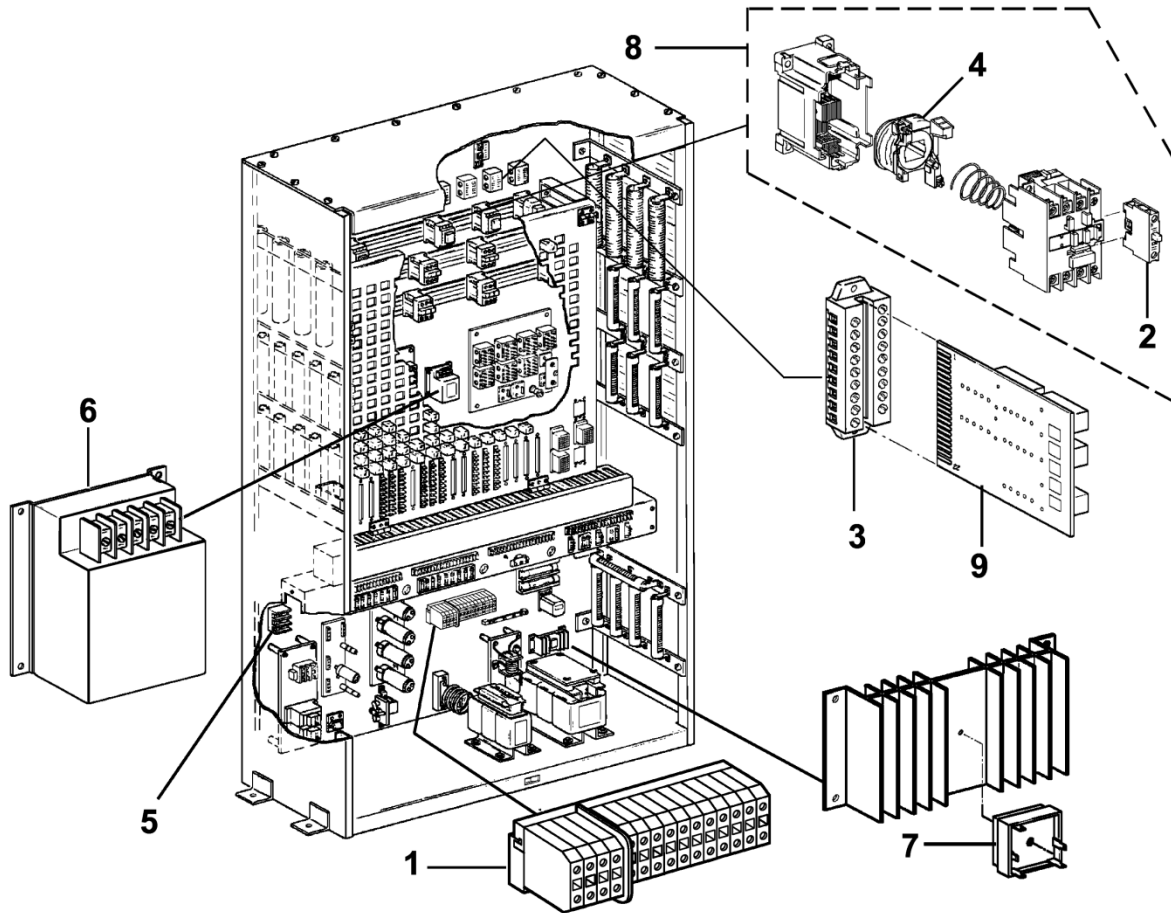
**10-7412A**



W/O VINTAGE & VINTAGE Y 01							
REF. No.	PART No.	DESCRIPTION	SYMBOL/REMARKS				
1	P614AV1	Card Holder	---				
2	AAA303DM1	Power Distribution Block	---				
3	P621D1	Power Supply	---				
4	P230BP3	Rectifier, Bridge, 25 A, 800 V	---				
5	P613AP6 AAA24831M6 AAA613DL17	Relay, 115 VAC, 2 N.O., 2 N.C. Contacts	See NOTE	NR	HSL	ACT	CND
	P613AP9 AAA24831M9 AAA613DL16	Relay, 115 VAC, 3 N.O., 1 N.C. Contacts		NL	K	LAS	LAT
				STP	SMG	PFS	AUD
				HZ	DR	---	---
6	252Y1	Terminal Assembly					
7	A8121AB1	Timer Board	TMB2	---	---	---	

**NOTE:** For first time replacement, order AAA24831M\_; for subsequent replacements, order AAA613DL\_. Refer to TIP 1.2.0-38, P613AP6, 7 and 9 Aromat Relay Replacements, for replacement options.

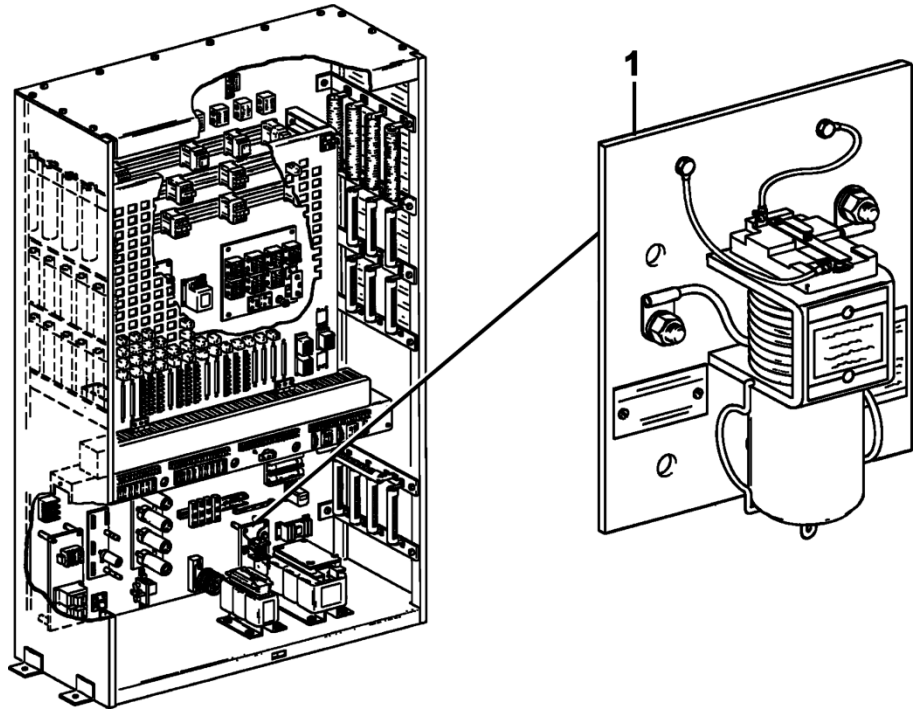
**Relays (Vintage Y 02)**




VINTAGE Y 02						
REF. No.	PART No.	DESCRIPTION	SYMBOL/REMARKS			
1	252AE1	Assembly, w/(4) Terminals, 600 V, 143 A, & (12) 2 AWG, + (14) Terminals 600 V, 47 A	---			
	252AE2	Assembly, w/(4) Terminals, 600 V, 200 A, & (4)00 AWG, + (14) Terminals 600 V, 47 A	---			
2	613BX/CA3-P10	Auxiliary Contact, 1 Normally Open	---			
3	P614AV1	Card Holder	---			
4	613BX/22.122.304-33	Coil, 120 VAC	---			
5	AAA303DM1	Power Distribution Block	---			
6	P621D1	Power Supply	---			
7	P230BP3	Rectifier, Bridge, 25A, 800V	---			
8	613BX4	Relay, 120 VAC, 2 Normally Open, 2 Normally Closed Contacts	NR	HSL	ACT	CND
			NL	K	LAS	LAT
			STP	SMG	PFS	AUD
	613BX2	Relay, 120 VAC, 4 Normally Open Contacts	LAS	DR	---	---
	613BX9	Relay, 120 VAC, 3 Normally Open, 1 Normally Closed Contacts	HZ	---	---	---
9	A8121AB1	Timer Board	TMB2	---	---	---

# Overload Relay

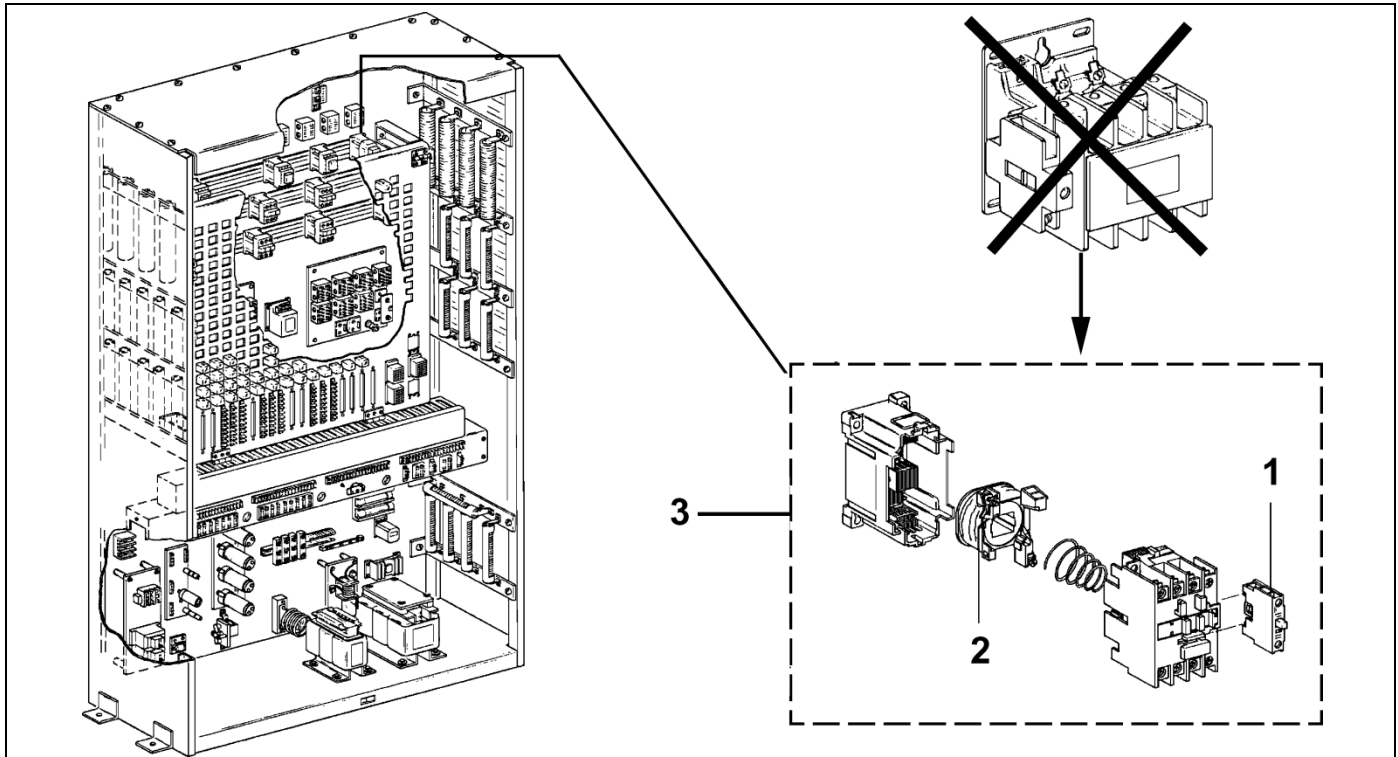
**10-7412A**



<b>W/O VINTAGE &amp; VINTAGE Y 01</b>				
<b>REF. No.</b>	<b>PART No.</b>	<b>DESCRIPTION</b>	<b>ELEVATOR MOTOR FULL LOAD RUNNING CURRENT</b>	<b>SYMBOL</b>
1	6315J1-CH4	 Overload Relay SPL 10-FX6315J for Detail	15	P2A
	6315J1-CH3		20	
	6315J1-CH2		30	
	6315J1-CH1		36	
	6315J1-CG8		53	
	6315J1-CG7		75	
	6315J1-CG6		112	
	6315J3-LA10		160	
	6315J3-LA14		220	
	6315J3-LA16		330	
	6315J3-LA18		487	

# 10-7412A

# Relay

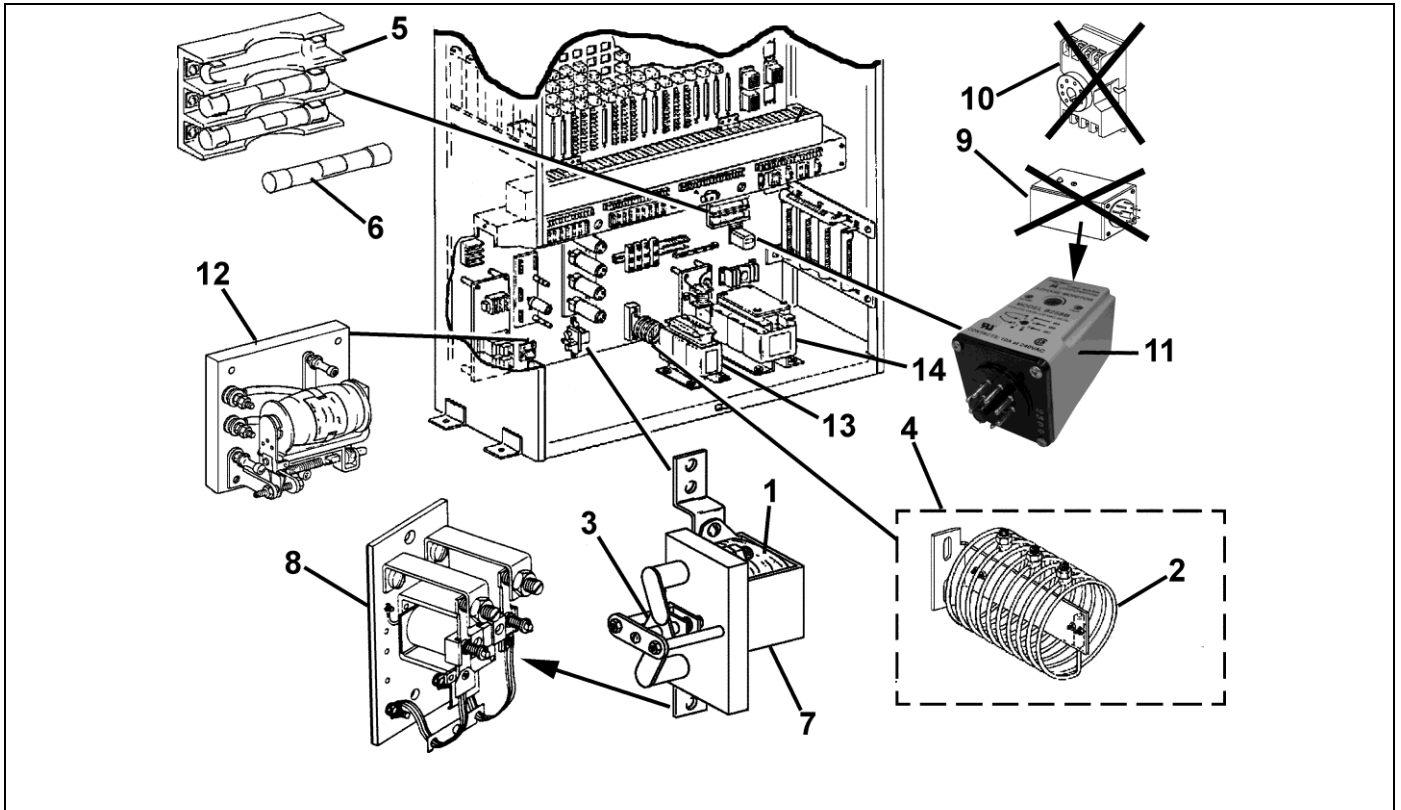


ALL VINTAGES							
REF. No.	PART No.	DESCRIPTION	CONTACTS		SYMBOL		
			MAIN	AUX.			
			NO = Normally Open NC = Normally Closed				
1	613BX/CA3-PL01	Auxiliary Contact	---	1 NC	---		
	613BX/CA3-P10		---	1 NO	---		
	613BX/CA3-P20		---	2 NO	---		
2	613BX/22.122.304-33		Coil, 120 VAC		---		
	613BX/22.501.304-76		Coil, 110 VDC		---		
	643BH1	613BX2	Relay, 120 VAC	4 NO	---	PL	
		613BX4		2 NO, 2 NC	---	E2A	
		613BX3		4 NO	1 NO	E1A	
		613BX9		3 NO, 1 NC	1 NO	HX	
643BH8	613BX1	3 NO, 1 NC	2 NO	C HX			
3	643BH15	613BX7	Relay, 110 VDC		2 NO, 2 NC	1 NO	H
	643BH16	613BX8	Relay, 110 VDC		4 NO	1 NO	HB
	643BH14	613BX5	Relay, 120 VAC		2 NO, 2 NC	1 NC	FE
	643BH7	613BX6	Relay, 120 VAC		4 NO	2 NO	FEX CZ
	---	613BX11	Relay, 120 VAC (for QL Operator)		3 NO, 1 NC	1 NO, 1 NC	DOR, DCR, RDOR, RDCR
	643BK1	613BV2	Relay, 120 VAC		2 NO, 2 NC	2 NO	UX-DX
	643BK3	613BV1	Relay, 110 VDC		4 NO	1 NO	U-D

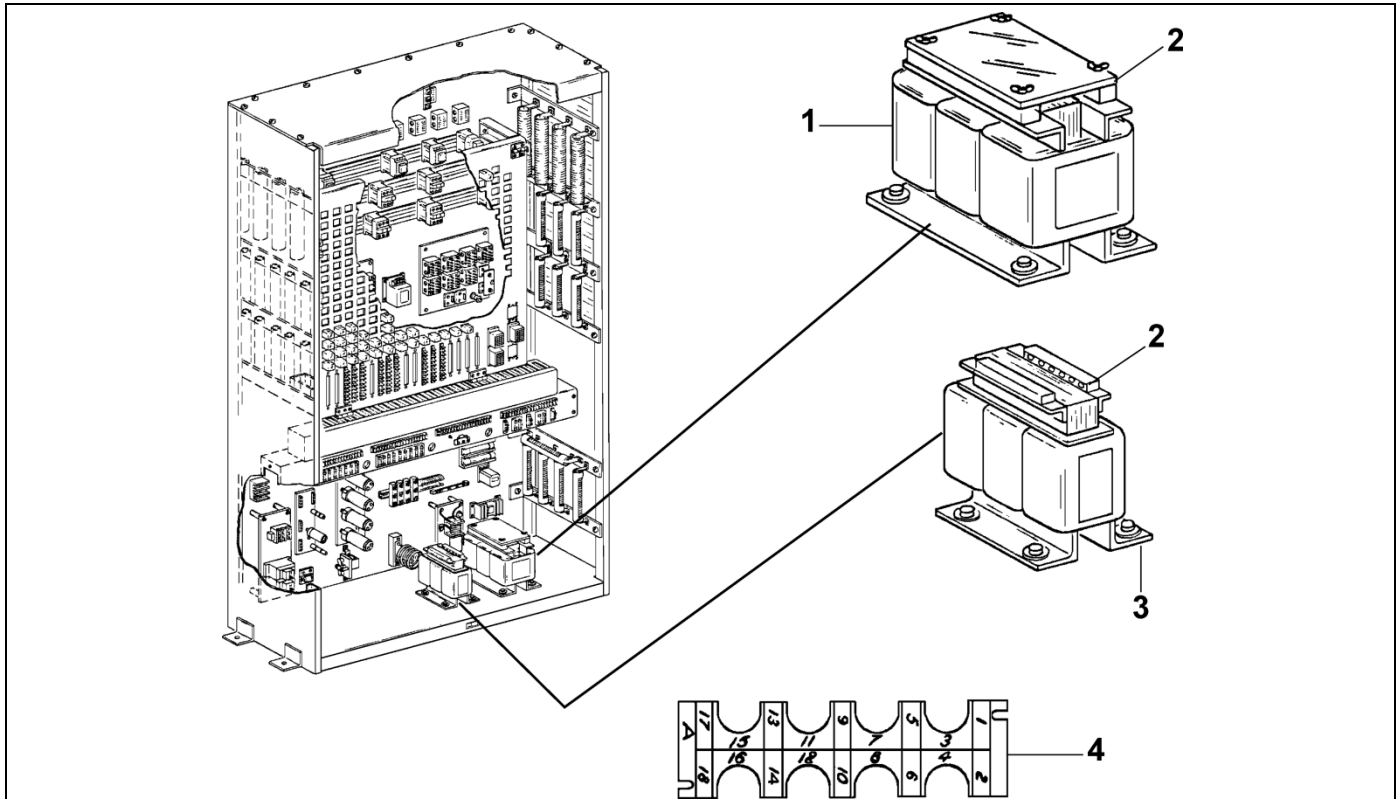


# MRS Controller

10-7412A



All VINTAGES				
REF. No.	PART OR M.L.	DESCRIPTION	SYMBOL	
1	P613BG1-COIL	Coil	---	
2	224H1	Coil, 0.051 Ohms (21 & 30U Controller)	---	
	224H2	Coil, 0.121 Ohms (10U Controller)	---	
3	P613BG1-CONTACT	Contact	---	
4	6369P1	Field Shunt	10U Controller	GSH
	6369P2		21U & 30U Controller	
5	180CN1	Fuse Holder	FP	
6	375J4	Fuse, 4 A, 600 V (Svc. Volts > 251)	FP1-2, FP3-4	
	375J8	Fuse, 8 A, 600 V (Svc. Volts < 250)	FP5 - 6	
7	P613BG4	Relay	SF	
8	2700ADH3	Relay, Kit, Series Field Switch and Bracket		
9	6204F1	Relay, Reverse Phase	J	
10	P618AC1	Relay, Socket (reverse phase)		
11	613BY7 613BY22	Relay, Reverse Phase, 95-140 V		
12	P613BJ2	Relay	<b>MOTOR = 6333</b>	MC
			CK	
	CL		1.6	
	CM		1.7	
P613BJ3	CJ	1.8		
13	---	Transformer, Type 235CD(DE)(DN). See pages 10 & 11.	TRM	
14	TYPE 235SK	Transformer, Type 235SK. See pages 10 & 11.	TRF	

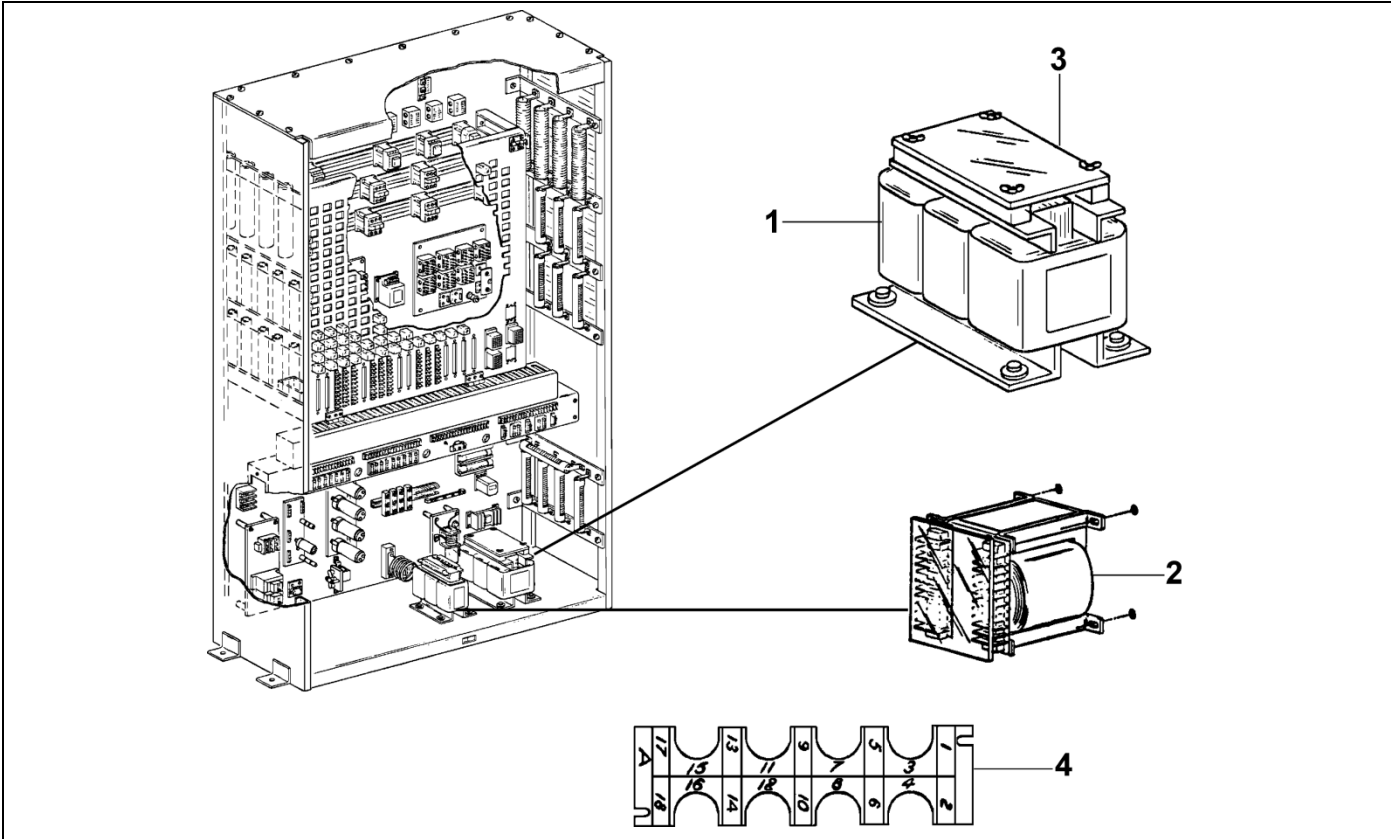


**W/O VINTAGE & VINTAGE Y 01**

REF. No.	PART No.	DESCRIPTION	DESCRIPTION		
			PRIMARY VOLTS	SECONDARY VOLTS	SYMBOL
1	235SK1	Transformer, 2000 VA	208-240	115, 92.5, 105, 25	TRF
	235SK2		440-480		
	235SK3		550-600		
2	303H1	Terminal Block	---	---	---
3	235CD1	Transformer, 350 VA	208-240	60, 25	TRM
	235CD2		440-480		
	235CD3		550-600		
4	102CD200	Marking Plate	208-240	115, 92.5, 105, 25	TRF
	102CD201		440-480		
	102CD202				
	102CD203				
	102CD204	550-600	60, 25	TRM	
	102CD205	208-240			
	102CD182				
	102CD183				
102CD184	550-600				

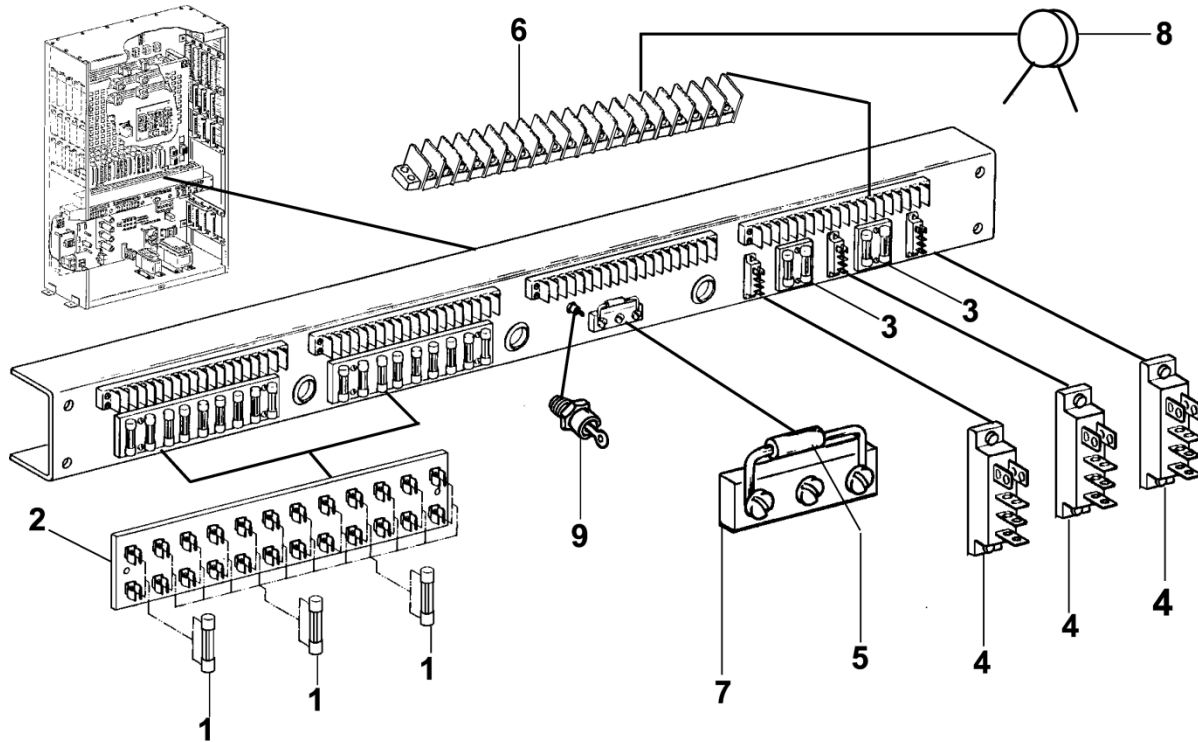
# Transformers (w/QL Door Operator)

**10-7412A**



<b>VINTAGE Y 02</b>		<b>DESCRIPTION</b>			
<b>REF. No.</b>	<b>PART No.</b>		<b>PRIMARY VOLTS</b>	<b>SECONDARY VOLTS</b>	<b>SYMBOL</b>
1	235SK1	Transformer, 2000 VA	208-240	115, 92.5, 105, 25	TRF
	235SK2		440-480		
	235SK3		550-600		
2	235DE1	Transformer, 575 VA (front opening operator)	208-240	120, 115, 105, 21.2, 75, 80	TRM
	235DE2		440-480		
	235DE3		550-600		
	235DN1	Transformer, 341 VA (front & rear opening operator)	208-240		
	235DN2		440-480		
	235DN3		550-600		
3	303H1	Terminal Block	---	---	---
4	102CD200	Marking Plate	208-240	115, 92.5, 105, 25	TRF
	102CD201		440-480		
	102CD202				
	102CD203				
	102CD204		550-600		
	102CD205				

**Fuse Panel, 7770 Door Operator**

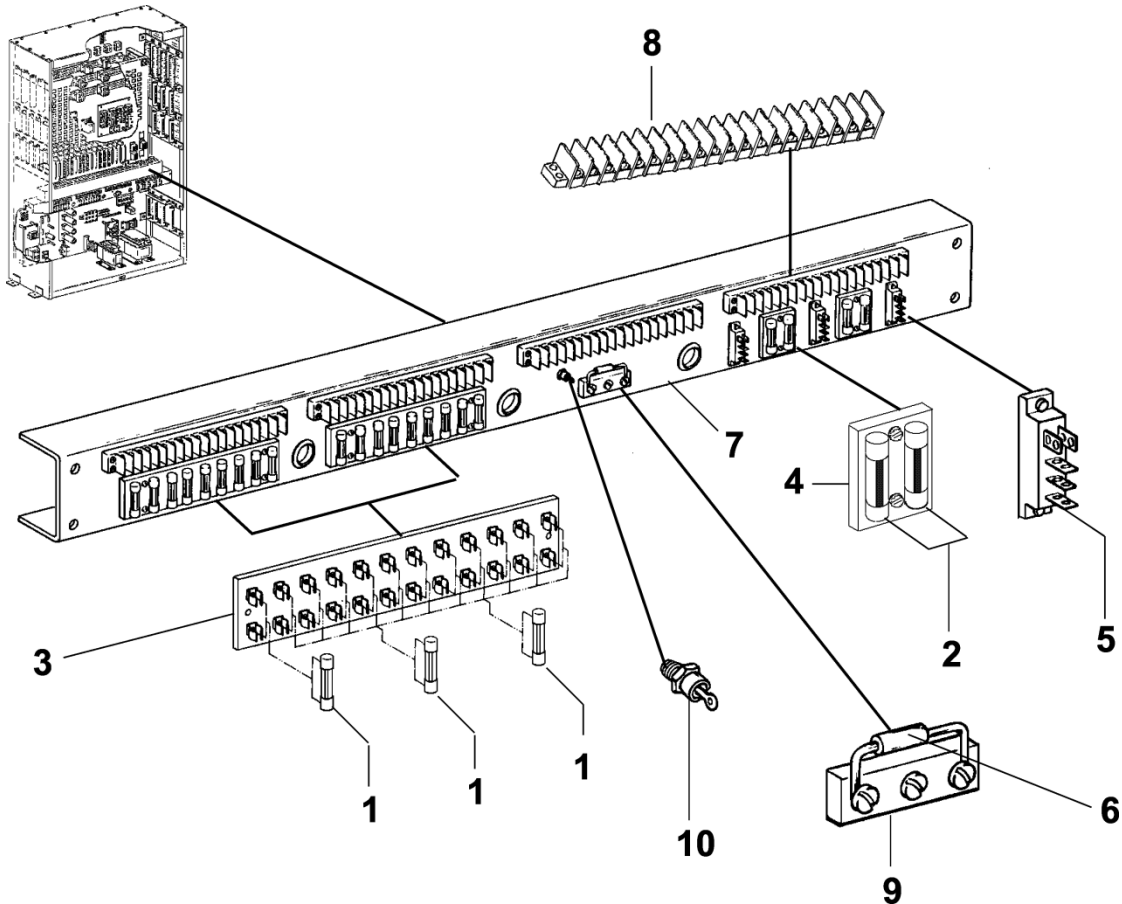


**W/O VINTAGE,  
VINTAGE Y 01 & Y 02**

REF. No.	PART No.	DESCRIPTION	SYMBOL
1	375P1	Fuse, Glass 250 V, 1 A	F1, F2, F3, F9, F15, F19
	375P2	Fuse, Glass 250 V, 2 A	F11
	375P3	Fuse, Glass 250 V, 3 A	F4, F5, F6, F12, F1, F1, F17
	375P5	Fuse, Glass 250 V, 5 A	F8, F10, F21
	375P6	Fuse, Glass 250 V, 6 A	DF1, DF2, DF3, DF4, DF5, DF6
	AAA375BT11	Fuse, Ceramic 250 V, 8 A	F16, F18
	375P24	Fuse, Glass 250 V, 0.5 A	F7, F20
2	P303BA5	Fuse Block	F1 - F12, F13 - F24
3	P303BA6	Fuse Block	DF1 - DF3, DF4 - DF6
4	P230BL2	Rectifier	DRF1, DRF2, RF2
5	232FB6	Resistor, 50 Ohm, 10 W	VRR
6	P303CG1	Terminal Block	---
7	P303CL1	Terminal Strip	---
8	604F2	Varistor	---
9	P612F2	Zener Diode, 24 V	VR1

# Fuse Panel, QL Door Operator

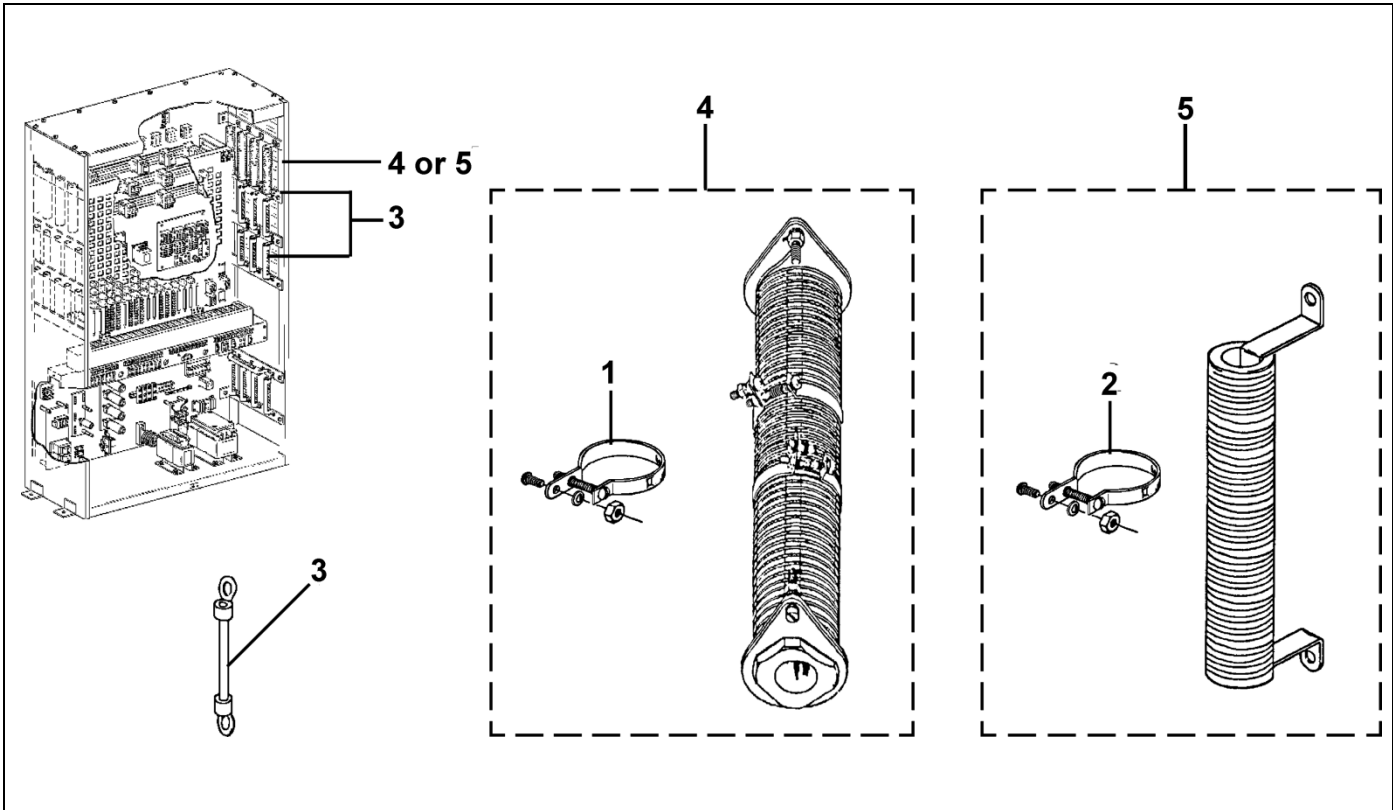
10-7412A



**W/O VINTAGE,  
VINTAGE Y 01 & Y 02**

REF. No.	PART No.	DESCRIPTION	SYMBOL
1	375P1	Fuse, Glass 250 V, 1 A	F1, F2, F3, F9, F19
	375P2	Fuse, Glass 250 V, 2 A	F11
	375P3	Fuse, Glass 250 V, 3 A	F4, F5, F6, F12, F13, F14, F16, F17
	375P5	Fuse, Glass 250 V, 5 A	F8, F10, F21
	AAA375BT11	Fuse, Ceramic 250 V, 8 A	F18
	375P24	Fuse, Glass 250 V, 0.5 A	F7, F20
2	375Y3	Fuse, 250 V, 3.0 A	DF1, DF2, RDF1, RDF2
3	P303BA5	Fuse Block	F1 - F12, F13 - F24
4	P180BP1	Fuse Block	DF1 - DF3, DF4 - DF6
5	P230BL2	Rectifier	DRF1, DRF2, RDF1, RDF2
6	232FB6	Resistor, 50 Ohm, 10 W	VRR
7	177DP1	Switch, Toggle	GCOS
8	P303CG1	Terminal Block	---
9	P303CL1	Terminal Strip	---
10	P612F2	Zenor Diode, 24 V	---

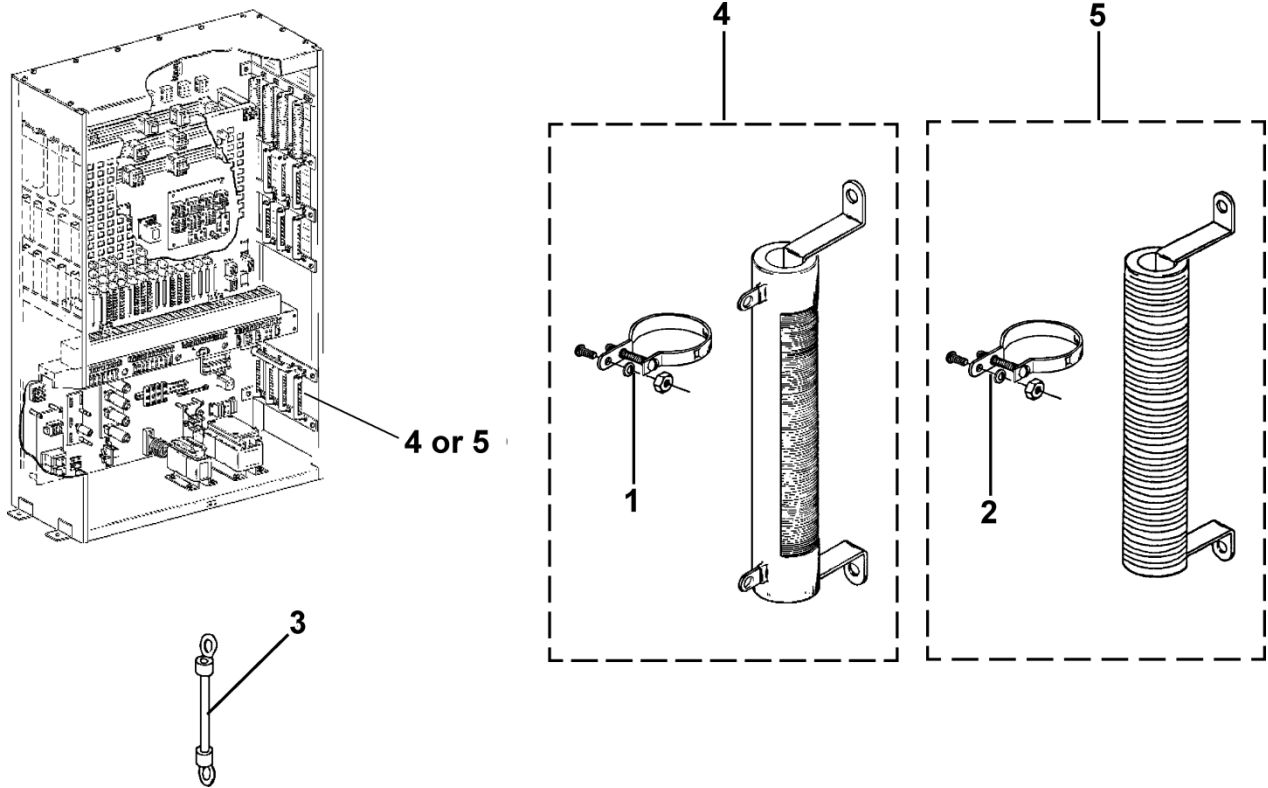
**Generator/Motor Field Resistors**



ALL VINTAGES		DESCRIPTION			
REF. No.	PART No.		OHMS	WATTS	SYMBOL
1	336CV1	Adjustable Clamp	---	---	GF2, GF, MF, B, LFR
2	232EG/75522103	Adjustable Clamp	---	---	
3	175AN2	Conductor, 10.0 in. L  Ref 4	---	---	
	175J60	Conductor, 8.0 in. L  Ref 5	---	---	
4	232AA46	Resistor, 10.125 in. L w/ 2 Clamps & w/o Conductor	6.12	700	
	232AA47		9.28		
	232AA48		14.10		
5	232EG17	Resistor, 6.5 in. L w/ 2 Clamps & w/o Conductor	10	100	
	232EG18		15		
	232EG19		25		
	232EG20		50		
	232EG21		100		
	232EG22		150		
	232EG23		200		
	232EG24		250		
	232EG25		300		
	232EG26		400		
	232EG27	500			

# Resistors, Door Operator

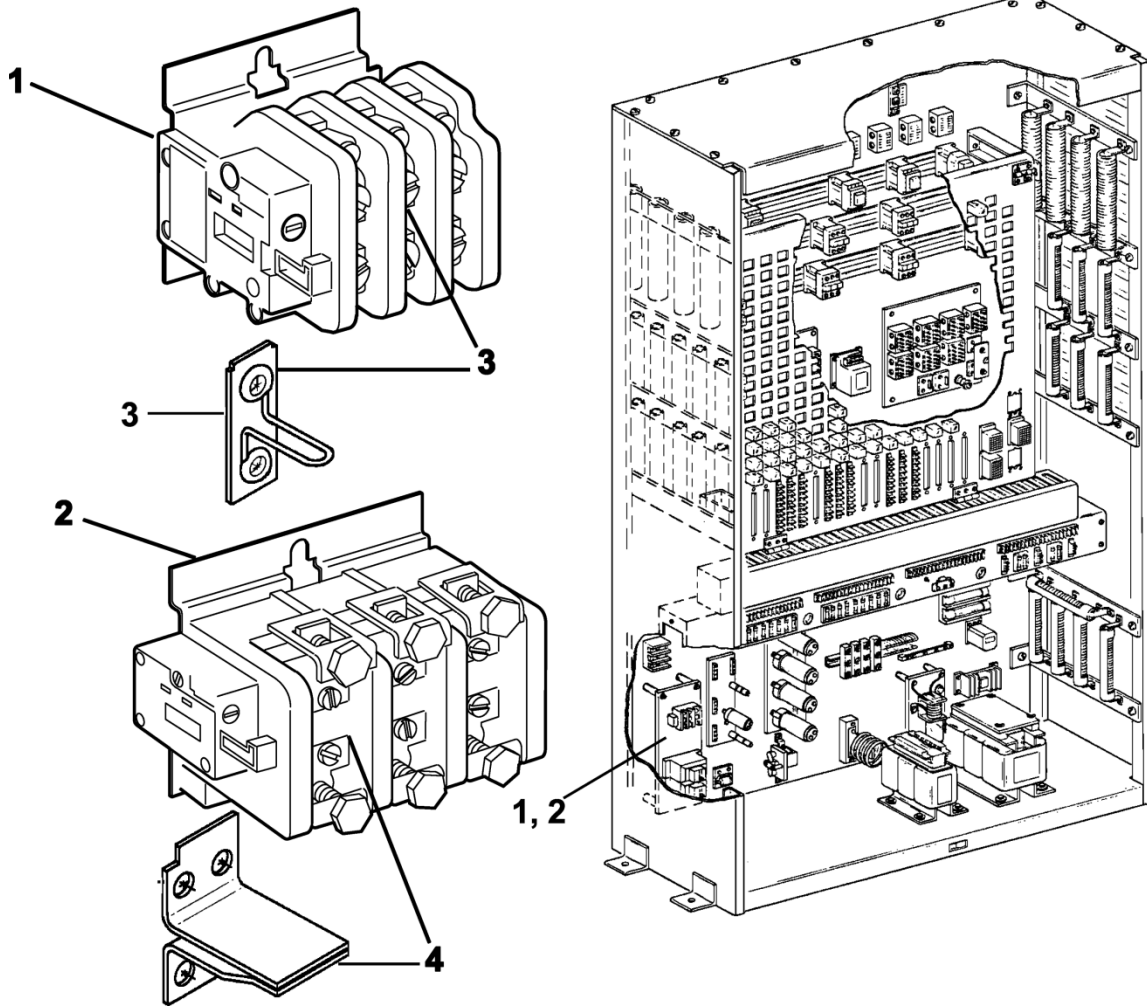
10-7412A



ALL VINTAGES		DESCRIPTION			
REF. No.	PART OR M.L.		OHMS	WATTS	REMARKS
1	P190AR1	Adjustable Lug	---	---	---
2	232EH/75522105	Adjustable Clamp	---	---	---
3	175J60	Conductor 8.0 in. L <b>[W]</b> → Ref 5	---	---	---
4	AAA617K8	Resistor, 10.5 in. L w/1 Adjustable Lug & w/o Conductor	50	225	Operator 7782AA (QL)
	AAA617K10		250		
5	232EH2	Resistor, 10.5 in. L w/ 1 Adjustable Clamp w/o Conductor	25	225	Operator 7770A
	232EH3		50		
	232EH4		100		
	232EH6		250		

**10-7412A**

# Overload Relay

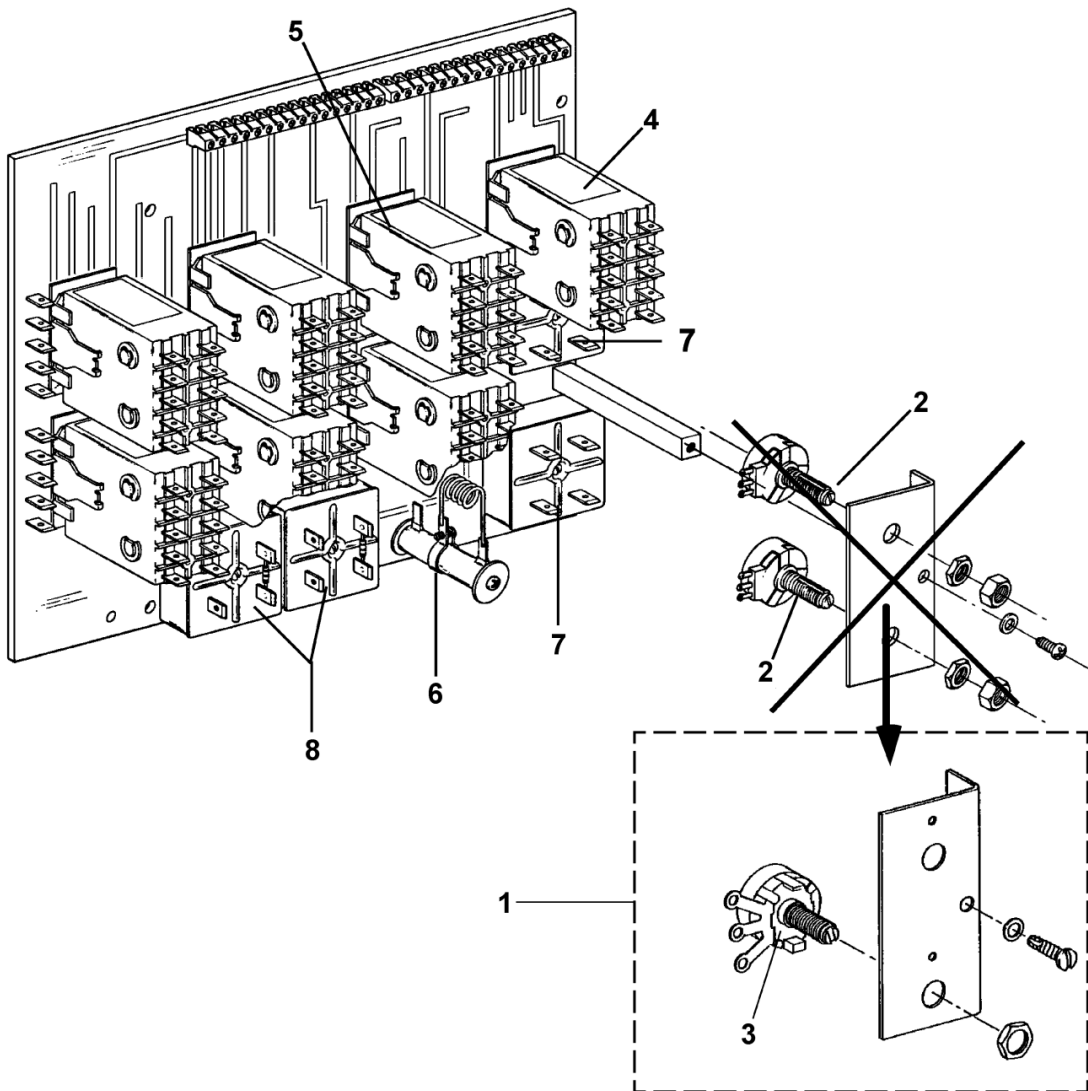


ALL VINTAGES		DESCRIPTION							
REF. No.	PART No.		DUTY			SYMBOL			
			< 300 V		> 300 V				
1	6315Y2	Overload Relay	2020	---	---	2020	2520	3020	P1A
			---	---	---	3520	4020	2035	
			---	---	---	2535	---	---	
	6315Y1		2520	3020	3520	4520	3035	3535	
			4020	2035	2535	4035	---	---	
			4520	3035	3535	---	---	---	
2	6315Y5		4035	---	---	---	---		
3	---	Type 232AP	Heater Element, See SPL 10-232AP						
4	---	Type 232AR							



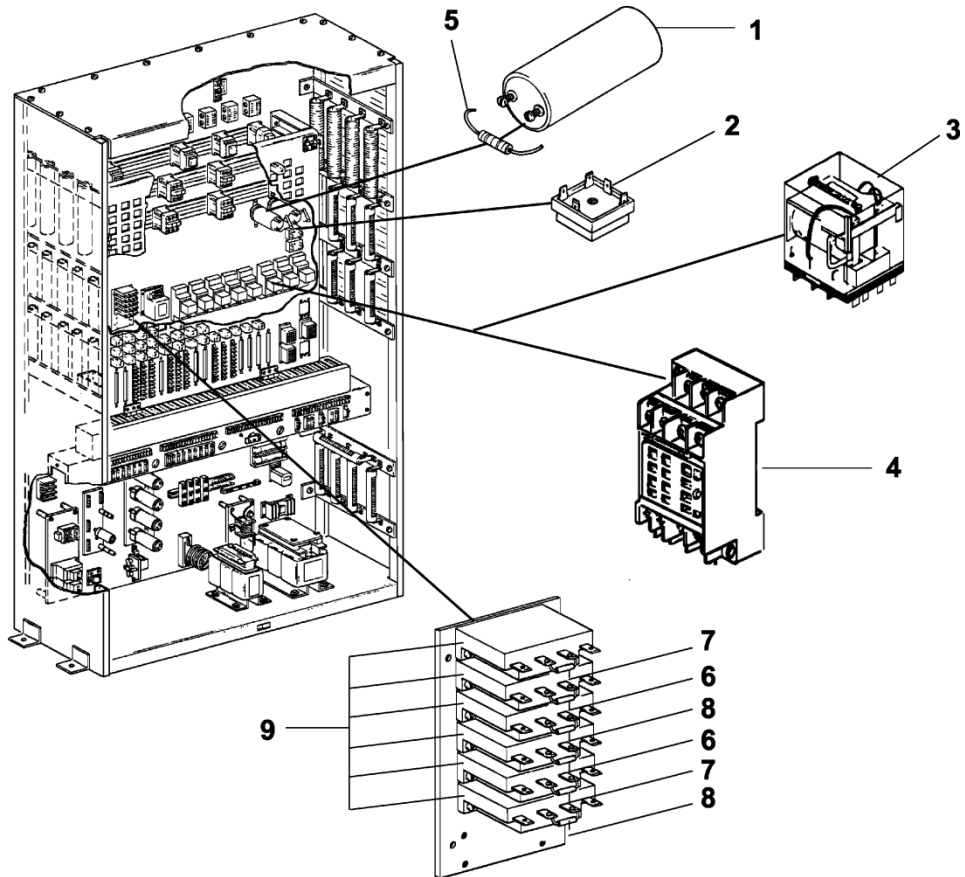
# 8200AJ Door Operator Panel

10-7412A



ALL VINTAGES			
REF. No.	PART No.	DESCRIPTION	SYMBOL
1	2700CAV1	Kit, Potentiometer + Bracket	R1, R2
2	P232DK4	Potentiometer, 1M Ohm	R1, R2
3	232EY1	Potentiometer, 1M Ohm	R1, R2
4	P613AP6 AAA24831M6 AAA613DL17	Relay, 120 VAC, 2 N.O., 2 N.C. Contacts	See NOTE S1 - S4 S6, S7
5	P613AP7 AAA24831M7 AAA613DL15	Relay, 120 VAC, 4 N.O. Contacts	
6	AAA617M10	Resistor, Adjustable	R3
7	P623B4	Timer	T3, T4
8	P623B5	Timer	T1, T2

**NOTE:** For first time replacement, order AAA24831M\_; for subsequent replacements, order AAA613DL\_. Refer to TIP 1.2.0-38, P613AP6, 7 and 9 Aromat Relay Replacements, for replacement options.

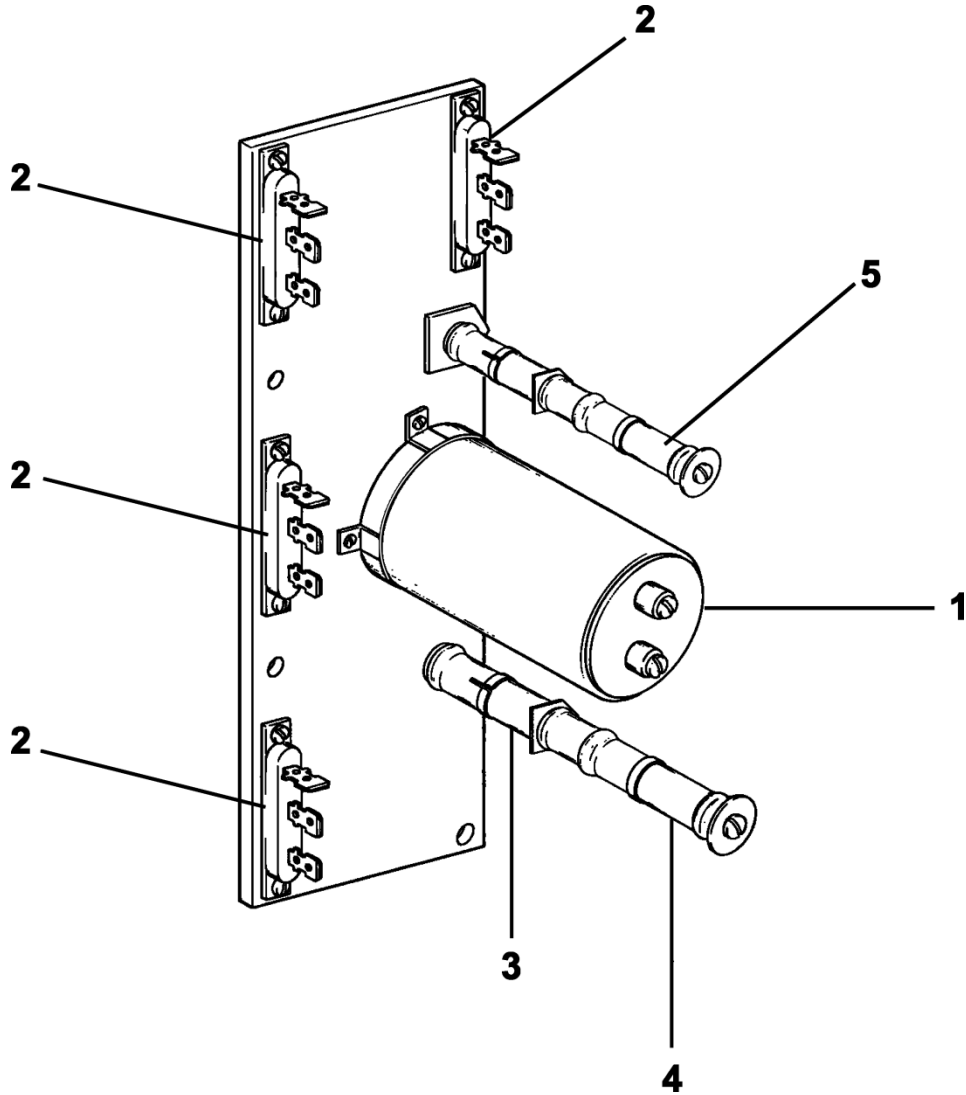


ALL VINTAGES					
REF. No.	PART No.	DESCRIPTION	SYMBOL		
1	P226DA5	Condenser	CRF	RCRF	---
2	P230BP2 AAA612AM4	Rectifier	DRF	RDRF	---
3	630F4	Relay, 115 VAC 4 Pole, Double Throw	DP	DOLX	DNFC
			DFCD	RDP	RDOLX
			RDNFC	RDFCD	---
4	P613AP7 AAA24831M7 AAA613DL15	Relay 115 VAC (see <b>NOTE</b> )	LAS	---	---
4	P618Y1	Relay Socket	---	---	---
5	232T17	Resistor	R	RR	---
6	232F23	Resistor, Carbon Molded 0.5 W, 0.51 M Ω			
7	232F24	Resistor, Carbon Molded 0.5 W, 1.00 M Ω			
8	232F25	Resistor, Carbon Molded 0.5 W, 2.70 M Ω			
9	P623P4	Timer			

**NOTE:** For first time replacement, order AAA24831M\_; for subsequent replacements, order AAA613DL\_. Refer to TIP 1.2.0-38, P613AP6, 7 and 9 Aromat Relay Replacements, for replacement options.

# 7412D RCR Panel

10-7412A

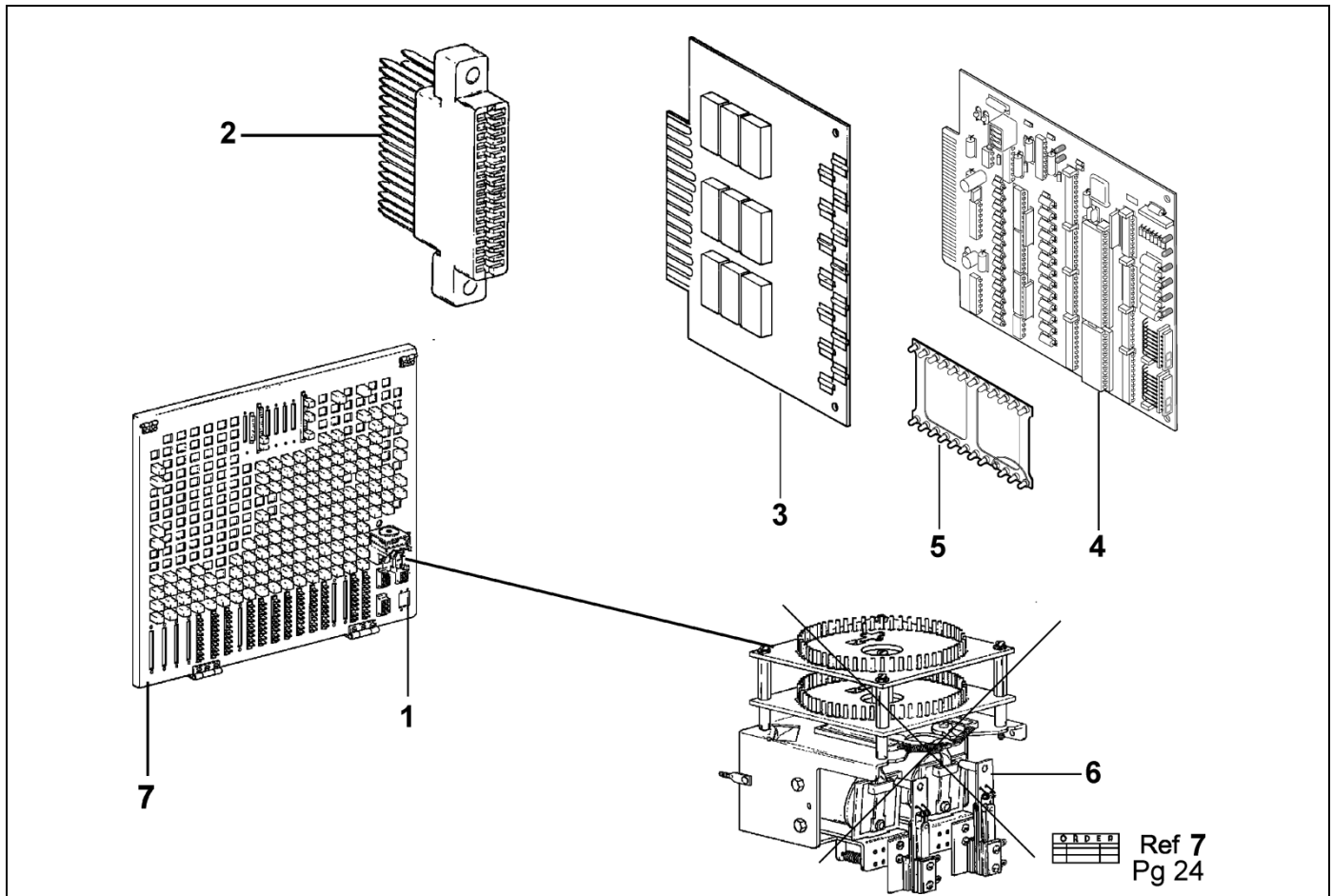




ALL VINTAGES			
REF. No.	PART No.	DESCRIPTION	SYMBOL
1	226H2	Condenser, 150 VDC, 250 $\mu$ FD	H
2	P230BN1	Rectifier, 400 VAC, 15 A	B, MF, 3RF, H
3	232B9	Resistor, 100 $\Omega$	B2
4	232B18	Resistor, 1000 $\Omega$	B1
5	232B21	Resistor, 2000 $\Omega$	H



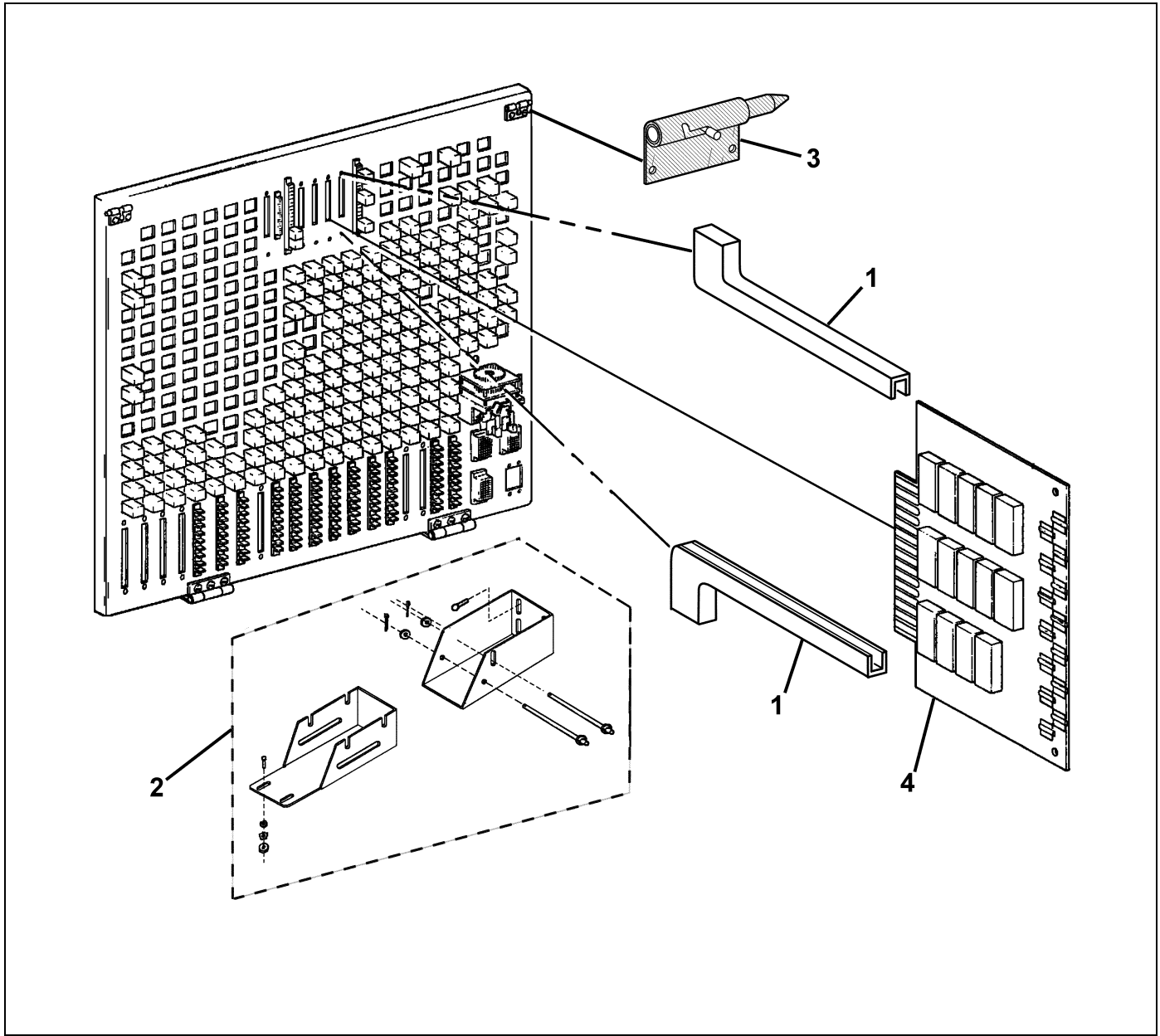
# 7412C Relay Panel

**10-7412A**



REF. No.	W/O VINTAGE		DESCRIPTION	SYMBOL
		VINTAGE Y01 & Y02		
	PART No.			
1	P614H12		Connector	1P
2	P614T5		Connector, PC Board	---
3	A8121AA10		PC Board, Timer (DUP + E2P)	TMB1
	A8121AA9		PC Board, Timer (GSS+DUP+XE2P)	
	A8121AA8		PC Board, Timer (XGSS + DUP)	
4	A8121AH1		PC Board, Vacuum Fluorescent w/o Speech	VFSB
	A8121AH2		PC Board, Vacuum Fluorescent & Speech (w/2716 EPROM)	
	B8121AH2		PC Board, Vacuum Fluorescent & Speech (w/2732 EPROM)	
	AAA8121W1			
5	AAA618AM2		Socket, Adaptor  2716 EPROM	
6	P613BC2	P613BY1	Switch, Stepper  Ref. 7 p. 24	SEL
7	P303CC1		Terminal Block	---

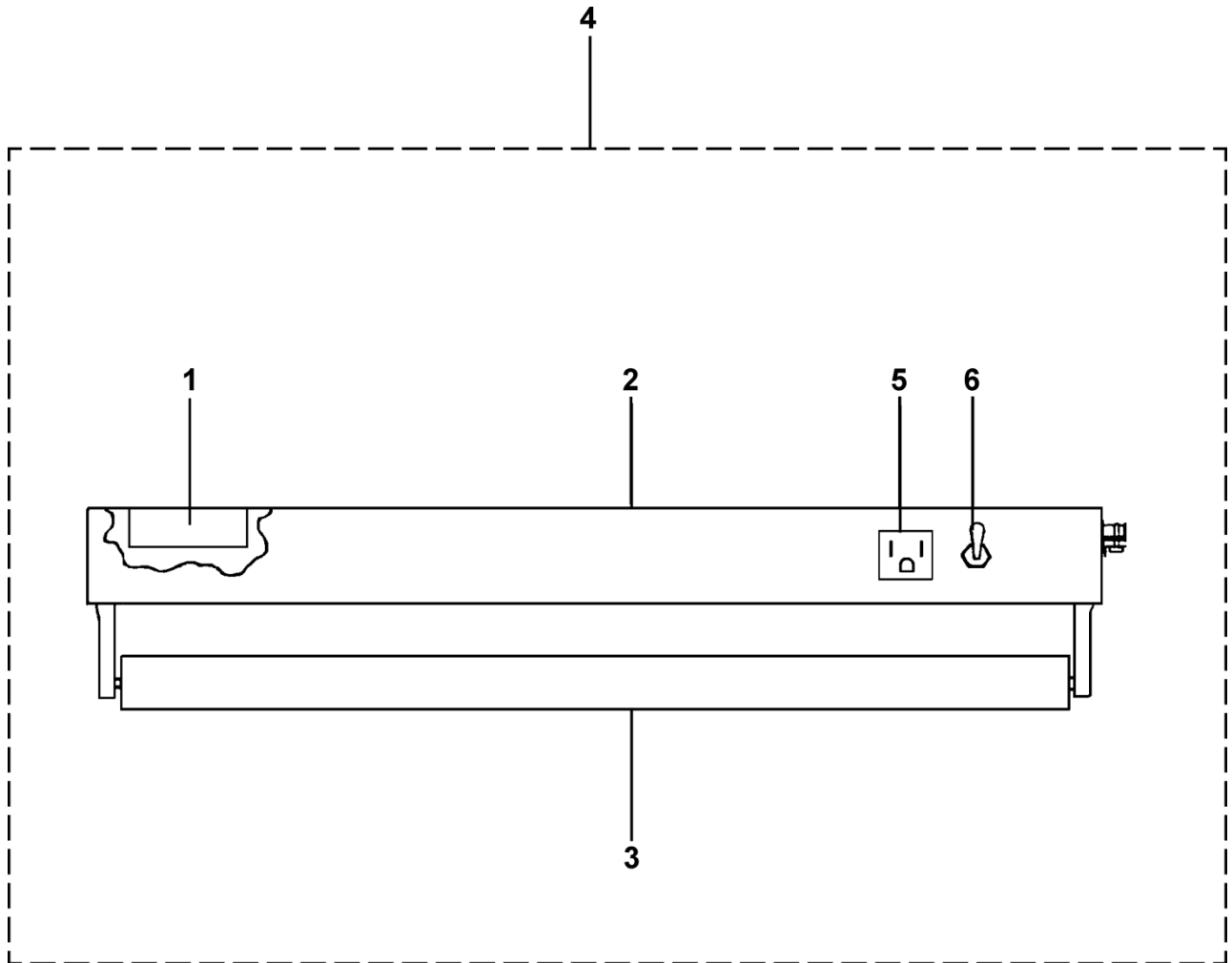
# Type 7412C Relay Panel



	W/O VINTAGE	W/O VINTAGE VINTAGE Y 01 & Y 02		
REF. No.	PART OR M.L.		DESCRIPTION	SYMBOL
1	P385MT4		Guide, Card	---
2	AAA7412R1		Kit, Retrofit, Relay Panel Brackets	---
3	391BS1	391BS3	Latch Release Hinge	---
	391BS2	391BS4	Latch Release Hinge	---
4	A8121AL9 A8121AL10 A812AL14 A8121AL4	A8121AL8 A8121AL8 A8121AL8 A8121AL24	Timer P.C. Board, Condition = DUP+ELA+E2P	TMB

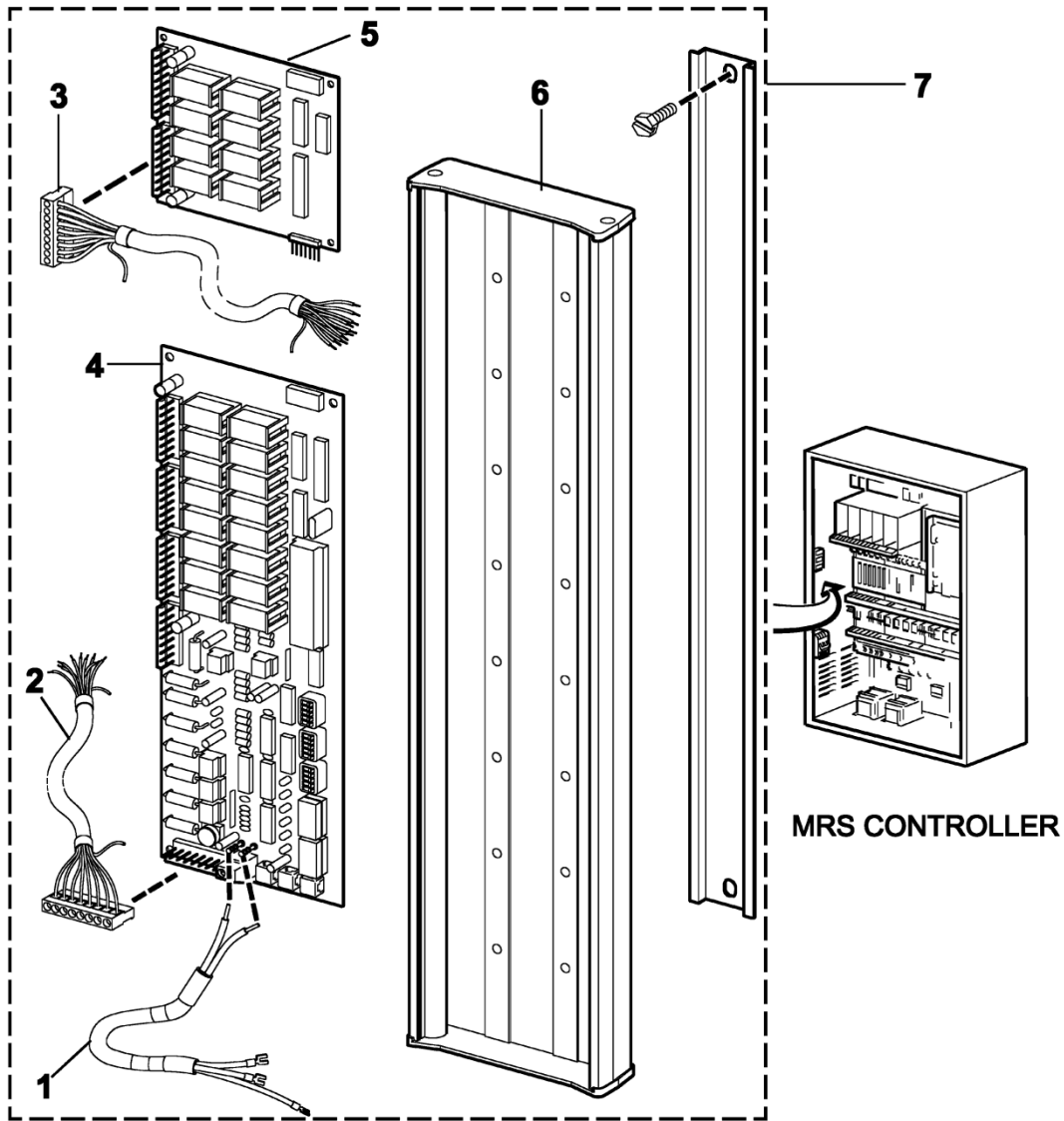
# 7412H Light Fixture

10-7412A



ALL VINTAGES		
REF. No.	PART No.	DESCRIPTION
1	417CC1/BALLAST	Lamp Ballast
2	417CC1	Lamp Fixture
3	424E15	Lamp, 20 W
4	7412H1	Light Fixture Assembly
5	6599R2	Outlet, Convenience
6	6599A3	Switch

**Electronic Stepper Kit**



**ALL VINTAGES**

REF. No.	PART No.	DESCRIPTION
1	AAA174KK1	Cable Assembly, 2-Conductor, 20 AWG
2	AAA174KJ1	Cable Assembly, 8-Conductor, 22 AWG
3	AAA174KJ2	Cable Assembly, 10-Conductor, 22 AWG
4	8128GE3	Electronic Stepper PC Board
5	8128GF2	Expander PC Board
6	AAA180DE1	Holder, PC Board (For AAA7412J5)
	AAA180DE2	Holder, PC Board (For AAA7412J6)
	AAA180DE3	Holder, PC Board (For AAA7412J7)
7	AAA7412J5	Kit, Stepper (Up to 15 Landings)
	AAA7412J6	Kit, Stepper (Up to 23 Landings)
	AAA7412J7	Kit, Stepper (Up to 31 Landings)