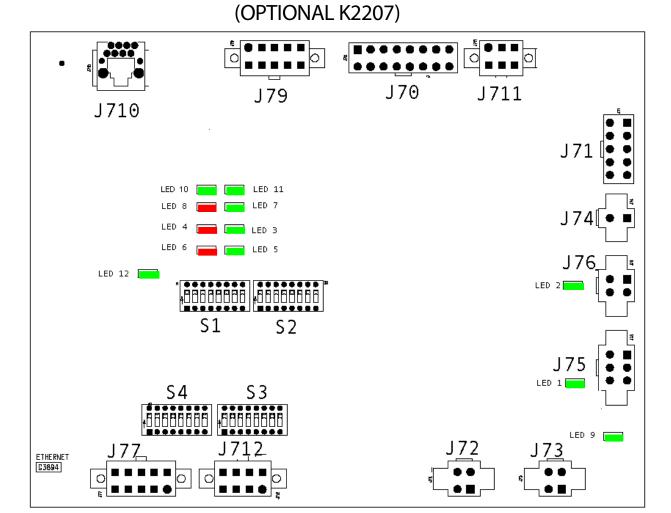


# ETHERNET MODULE



#### **Description of LED functions on the Power Wave 455M** For reference only

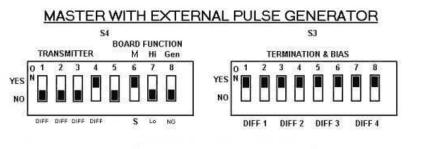
G3894 Ethernet Gateway PC Board			
LED	COLOR	FUNCTION	
#			
1	Green	Indicates Isolated Module Section Supply is ON	
2	Green	Indicates DeviceNet Supply is ON	
3	Green	ArcLink Status Indicators (Main System <i>Slave</i> ArcLink Connection)	
4	Red	Solid Green only when functional (See software for error codes)	
5	Green	Reserved For Future Use	
6	Red	Reserved For Future Ose	
7	Green	Device Not Status Indicators (See software arrays for soding)	
8	Red	DeviceNet Status Indicators (See software group for coding)	
9	Green	Indicates Isolated ArcLink Section Supply is ON	
10	Green	10Base-T Link Status ON indicates functional ethernet link has been	
		established	
11	Green	Receiver Polarity ON indicates proper ethernet signal polarity	
12	Green	Indicates I/O+5V Supply is ON This is used by differential I/O pair 4	
		circuitry, J712 pins 1 and 2.	

### Ethernet Board DIP Switch:

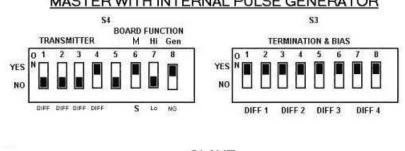
Switch	Description	Comments
1	Object Instance LSB	
2	Object Instance MSB	
3	Equipment Group 1 Select	Used for Arclink
4	Equipment Group 2 Select	Configuration
5	Equipment Group 3 Select	
6	Equipment Group 4 Select	1
7	Reserved for future use	
8	Reserved for future use	
	Table 1	<u></u> 15

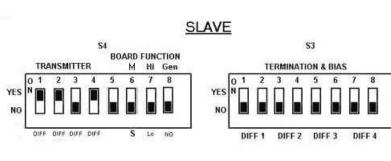
Bank S2	2	
Switch	Description	Comments
1 - 2	Devicenet Baud Rate	Used for DeviceNet
3 - 4	Devicenet Mac ID	configuration

### Configuring the DIP Switches on the Ethernet-Gateway Board

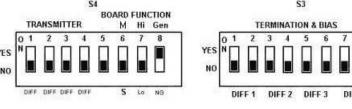


## MASTER WITH INTERNAL PULSE GENERATOR

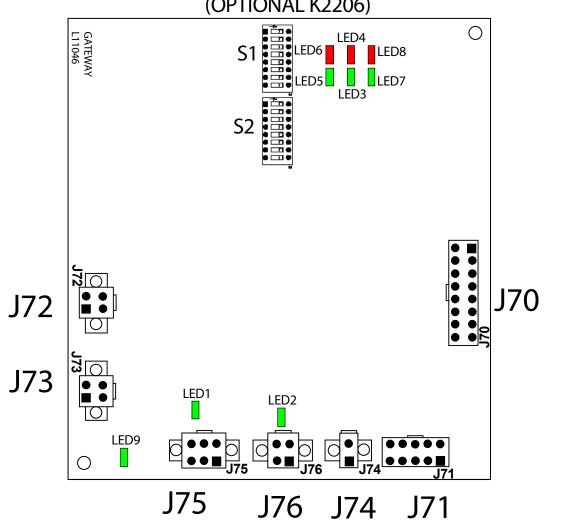




### **PULSE GENERATOR**



# DEVICENET MODULE (OPTIONAL K2206)

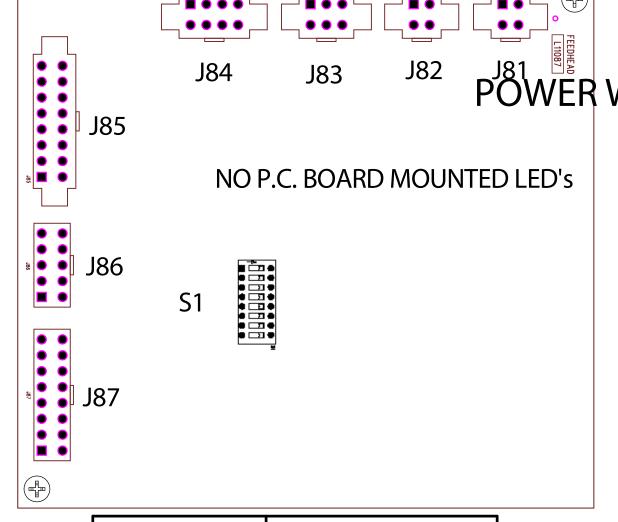


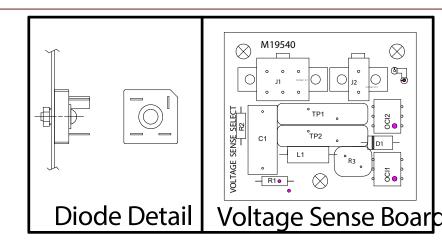
Devic	enet Board DIP Switch			on the Dev	icenet Board
	Bank (S1)		0		0
Switch	Description		N	1 2 3 4 5 6 7 8	$N \mid 1 \mid 2 \mid 3 \mid 4 \mid 5 \mid 6 \mid 7 \mid 8$
1	Object Instance LSB (see Table 1)				
2	Object Instance MSB (see Table 1)		<b>A</b>		
3	Equipment Group 1 Select		Т	'Bank S1 Default'	T Bank S2 Default
4	Equipment Group 2 Select			barnes i beraan	Darik 32 Delauit
5	Equipment Group 3 Select				
6	Equipment Group 4 Select	Descr	intion of	f LED functions on Power	r-Wave tyne systems
7	Reserved for future use	Desci	iption of	LED functions on 1 ower	1- wave type systems
8	Reserved for future use			L11046 DeviceNet Gateway	PC Roard
	Bank (S1)	LED#	COLOR	FUNCTION	1 C Board
Switch	Description	1	Green	Indicates Isolated Module Section St	upply is ON
1	DeviceNet Baud Rate	2	Green	Indicates DeviceNet Supply is ON	
2	Devicenet badd hate	3	Green		stem Slave ArcLink Connection) Solid
3		4	Red	Green only when functional (See so	
4		5	Green	Module Status Indicators (See softw	vare group)
5	DeviceNet Mac ID	6	Red	1	
6	Default ID=62	7	Green	<b>DeviceNet Status Indicators (See sof</b>	tware group for coding)
7		8	Red		

9 Green Indicates Isolated ArcLink Section Supply is ON

Configuring the DIP switches

### WIRE DRIVE MODULE (OPTIONAL K2205)

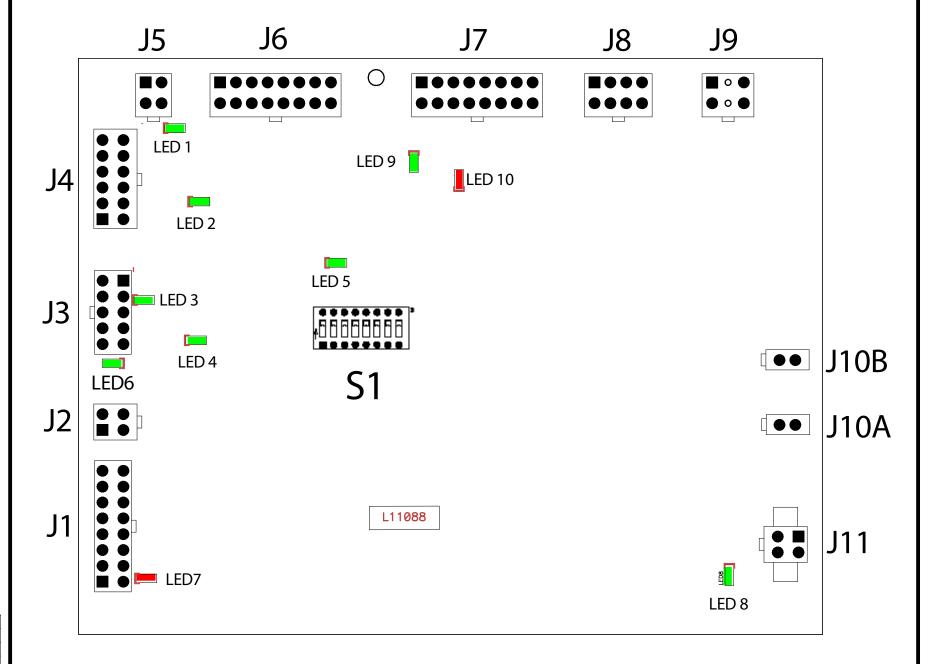




### Feed Head Board DIP Switch:

	<i>,</i>	da Boara Bir Gwitch.		
Sw	vitch	Description	Comments	
1 Object Instance LSB		Object Instance LSB		
2 Object Instance MSB		Object Instance MSB		
3 Equipment Group 1 Select		Equipment Group 1 Select		
4 Equipment Group 2 Select		Equipment Group 2 Select	Used for Arclink Configuration	
5 Equipment Group 3 Select		Equipment Group 3 Select		
6 Equipment Group 4 Select		Equipment Group 4 Select		
_	off Electrode polarity positive (default)			
_ ′	on Electrode polarity negative Used for configuring electrode po		Used for configuring electrode polarity	
8	off	Low speed gear (default)  Used for configuring wirefeeder gear r		

### **CONTROL BOARD**



#### **Control Board DIP Switch:**

Switcl	n Description	Comments
1	Object Instance LSB	
2 Object Instance MSB		
3	Equipment Group 1 Select	I I - 1 f A 1: 1 f
4 Equipment Group 2 Select		Used for Arclink configuration
5	Equipment Group 3 Select	
6 Equipment Group 4 Select		
7	Reserved for future use	
off work sense lead not connected		Hand for configuring would consoled
8 or	on work sense lead connected Used for configuring work sense lead	

### POWER WAVE 455 WIRING DIAGRAM G5570 REV: C **Description of LED functions on the Power Wave 455M** For reference only

L11088 Digital Control PC Board LED# COLOR FUNCTION 1 Green Indicates +15VDC from power supply board is present 2 Green Indicates –15VDC from power supply board is present 3 Green Indicates +5VDC for +5SPI from power supply board is present 4 Green Indicates +15VDC for +15SPI from power supply board is present 5 Green Indicates +5VDC for +5V from power supply board is present 6 Green Indicates +5VDC for +5VRS232 from power supply board is present 7 Red FAULT Signal (See software group for coding)
8 Green Indicates +5VDC for +5CAN from power supply board is present 9 Green ArcLink Status Indicators (Main System *Master* ArcLink Connection) Solid

### POWER BOARDS

10 Red Green only when functional (See software for error codes)

### **Description of LED functions on the Power Wave 455M** For reference only

LED#	COLOR	FUNCTION	
1	<b>R</b> ed	Indicates +5VDC SPI supply is present	
2 Red Indicates +5VDC control supply is present			
	red	indicates 13 v De control supply is present	
	Trou	L11078 +40 Volt DC Bus Board	
LED#	COLOR		

#### **Troubleshooting the PowerWave**

### **Using the Status LED**

MEANING	
Steady Green	System OK. Power source communicating normally with wire feeder and its components.
Blinking Green	Occurs during a reset, and indicates the Power Wave is mapping (identifying) each component in the system. Normal for first 1-10 seconds after power is turned on, or if the system configuration is changed during operation
Alternating Green and Red	Non-recoverable system fault. If the PS Status light is flashing any combination of red and green, errors are present in the Power Wave. <b>Read the error code before the machine is turned off.</b>
	<b>Error Code interpretation</b> through the Status light is detailed in the Service Manual. Individual code digits are flashed in red with a long pause between digits. If more than one code is present, the codes will be separated by a green light.
	To clear the error, turn power source off, and back on to reset.

#### **Error codes for the PowerWave**

The following is a list of possible error codes that the Power Wave can output via the status light

Error Code #	Indication
11 CAN communication bus off.	Probably due to excessive number of communication errors.
12 User Interface time out error.	UI is no longer responding to the Power Source. The most likely cause is a fault/bad connection in the communication leads or control cable.
21 Unprogrammed Weld Mode.	Contact the Service Department for instructions on reloading the Welding Software.
22 Empty Weld Table.	Contact the Service Department for instructions on reloading the Welding Software.
23 Weld Table checksum error.	Contact the Service Department for instructions on reloading the Welding Software.
31 Primary overcurrent error.	Excessive Primary current present. May be related to a switch board or output rectifier failure.
32 Capacitor "A" under voltage (Left side facing machine)	Low voltage on the main capacitors. May be caused by improper input configuration, or an open/short circuit
33 Capacitor "B" under voltage (Right side facing machine)	in the primary side of the machine.
34 Capacitor "A" over voltage (Left side facing machine)	Excess voltage on the main capacitors. May be caused by improper input configuration, or an open/short
35 Capacitor "B" over voltage (Right side facing machine)	circuit in the primary side of the machine.
36 Thermal error	Indicates over temperature. Usually accompanied by Thermal LED. Check fan operation. Be sure process does not exceed duty cycle limit of the machine.
37 Softstart error	Capacitor precharge failed. Usually accompanied by codes 32-35.
41 Secondary overcurrent error	The secondary (weld) current limit has been exceeded. When this occurs the machine output will phase back to 100 amps, typically resulting in a condition refered to as "noodle welding"
42 Ground lead Current Shutdown (On K2202-4 machines only)	The K2202-4 has a special circuit installed that monitors current flowing on the input ground lead. When current is sensed, the machine will turn the welding output off. The machine will need to be turned off for several seconds and then back on to clear this error.
43 Capacitor delta error	The maximum voltage difference between the main capacitors has been exceeded. May be accompanied by errors 32-35.
49 Single phase error	Indicates machine is running on single phase input power. Usually caused by the loss of the middle leg (L2).
Other	Error codes that contain three or four digits are defined as fatal errors. These codes generally indicate internal errors on the PS Control Board. If cycling the input power on the machine does not clear the error, try reloading the operating system. If this fails, replace the control board.



& Ethernet communication Module)

- 1. Power Switch
- Status Light
- 3. High Temperature Light
- 4. 10 Amp Wire Feeder Circuit Breaker 5. Auxiliary Power Circuit Breaker
- 6. Work Sense Lead Connector
- 7. Arclink Receptacle 8. DeviceNET Connector (not shown)\*
- 9. I/O Connector\*
- 10. RS232 Connector
- 11. Work Stud 12. STT Stud
- 13. Electrode Stud
- 14. Robotic Interface Connector\* 15. Auxiliary Output (110V or 220V)
- 16. Ethernet Connector\*
- 17. Wire Drive Interface Module (not shown)\*
- 18. Wire Drive Status LED\* 19. Communication Interface Module (not shown)\*
- 20. Communication Status LED\*
- \* Not Standard in Base Model

2/22