

Multicolour LED Rocker Switch Panel



Introduction

The E-Plex 428RSP series; a programmable, multi-color LED, rocker switch panel designed to operate within an E-Plex system. This innovative new product incorporates independently controlled LED's, allowing custom-configured color selection on a per LED basis. Via E-Plex software, each LED is capable of being configured to produce up to 64 unique colors without the need for special ordering or assembly.

The 428RSP utilizes optical interrupters to create a switch output, which means there are no electrical contacts within the switch. The 428RSP provides interchangeable cams, including 1 & 2 position momentary, 2 & 3 position stationary and 2 position momentary / 1 position stationary switches. These cams are designed on a simple snap-in platform that allows for easy and inexpensive assemblies and modifications. In addition, switch banks greater than eight positions can be combined by dovetailing multiple units together.

Key Features

- LED color configuration, choose from a 64-color palette via E-Logic.
- Each LED can be configured with up to four unique system-status colors.
- Interchangeable cams to create different switch modes.
- Laser-etched actuators (customer-specified legends).
- Rocker switch uses optical interrupters (no contacts).
- Panel assembly is weather resistant and the board is conformal coated. External use requires additional physical protection to suit application.
- LEN value 17 to 25.

Design Specifications

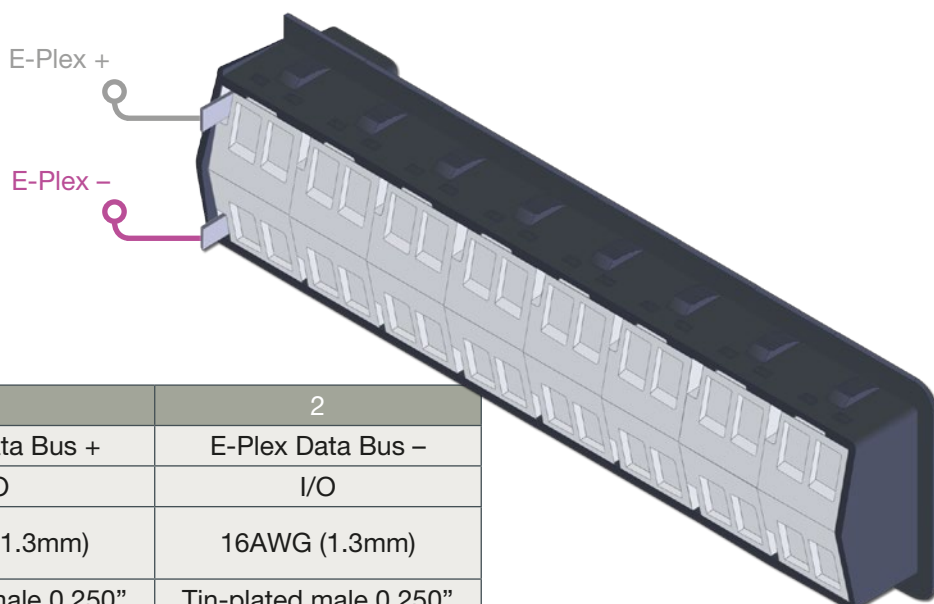
- Shock: Mil Std 202 Method 213 test condition 1.
- Vibration: Tested to Lloyds Registered approval vibration test 2.
- Ingress Protection: IP40.
- PCB characteristics: UL94V-0.
- UVB certification: UVB 400 hours.

Electrical Specifications

Description	Minimum	Nominal	Maximum
Operating Voltage	10 VDC	12 / 24 VDC	32 VDC
Operating Current, no E-Plex loads	75 mA	—	350 mA

Physical Specifications

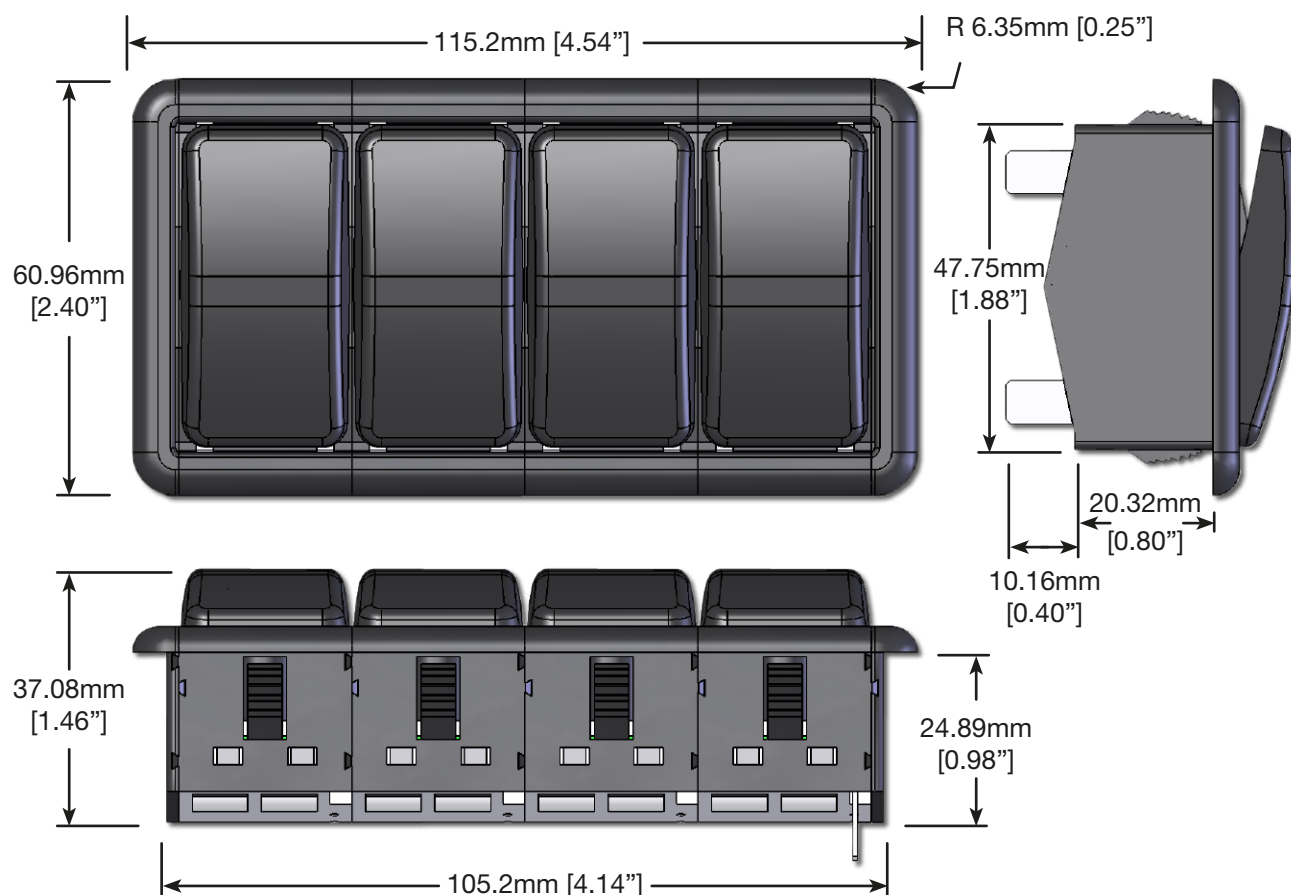
Description	Color	Intensity
Visible Lighting (without actuator installed)	Red	1500 ~ 2100 mcd
	Green	4200 ~ 5800 mcd
	Blue	1100 ~ 1500 mcd
Housing	UL 94 V-0 ABS injection molded	
CAM, Arm, Arm Housing	UL 94 V-0 Nylon	
Arm Spring	SUS304	
Actuator	Lexan®, laser etched with clear coat	
Actuator Guard	UL 94 V-0 ABS injection molded	
Operating Temperature	-20°C to 60°C	
Storage Temperature	-40°C to 85°C	
Operating Humidity	0% to 100% (condensing)	
Weight (8 position)	0.375 lb (170 g)	
Endurance	Tested to 100,000 cycles	



Wiring Specifications

Pin #	1	2
Description	E-Plex Data Bus +	E-Plex Data Bus -
Inputs & Outputs	I/O	I/O
Recommended Wire Gauge	16AWG (1.3mm)	16AWG (1.3mm)
Terminal Connector	Tin-plated male 0.250" quick-connect tabs	Tin-plated male 0.250" quick-connect tabs
Mating Connector	0.250" female spade terminal	0.250" female spade terminal

Dimensional Mounting Diagram



Mounting Specifications

In order to mount the 428RSP, the panel opening cut out needs to fall within the minimum and maximum allowances, see the 4-switch dimensional drawings below to determine.

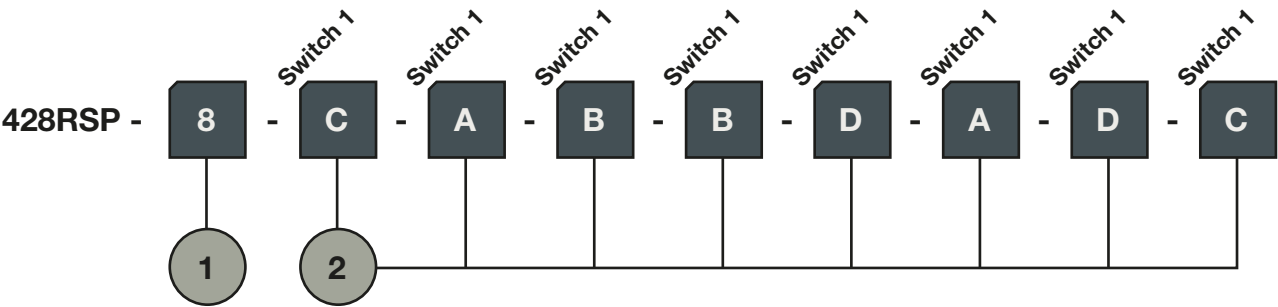
Recommended hole cutout: length of 4.15" (105.41mm) and a width of 1.90" (48.26mm). For each additional unit, add 1.00" (25.4mm) to the length.

Maximum panel thickness is 0.35" (8.89mm), for rocker switch assembly to lock into place.

Allow for additional space behind the assembly for wiring of quick connects.

Part Number Builder (1 of 2):

The example below indicates a 428RSP with 8 rocker switches, with switch 1 (left most, front face of the module, E-Plex terminal side) having a 2-position stationary cam, switch 2 having a 1-position momentary cam, switch 3 having a 2-position momentary cam, switch 4 having a 2-position momentary cam, switch 5 having a 3-position stationary cam, switch 6 having a 1-position momentary cam, switch 7 having a 3-position stationary cam, switch 8 having a 2-position stationary cam.



Use the table below to specify your 428RSP switch and CAM characteristics. Contact Airpax ED&D to specify legend / icon engraving and face guard options. Switch bank housings are modular, and can be combined into “one housing assembly”. An E-Plex connection is required for each switch bank ordered.

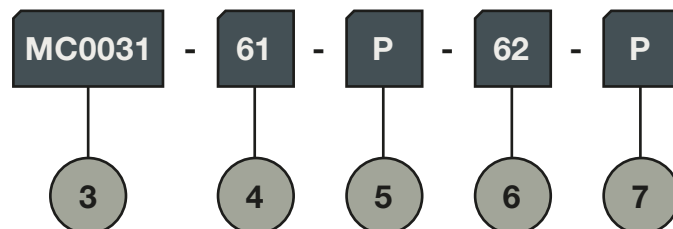
STEP 1	STEP 2	
Choose between 4 to 8 switches in the bank.	Choose cam option for each required switch in the bank, starting from left most, front face as switch #1.	
Example: A 4-switch bank is specified as code “ 4 ”	CODE	DESCRIPTION
	A	1-position momentary
	B	2-position momentary
	C	2-position stationary
	D	3-position stationary
	E	2-position stationary, 1-position momentary

Legends can be laser-etched into the face plate with either a positive or negative lens. You can have two positive lens, two negative lens, no lens at all (blank), or a combination there of on any switch. Contact the factory for additional legends and for custom designs. LED colors are specified via the E-Logic software.



Part Number Builder (2 of 2):

The example below indicates how to specify the legends on the 428RSP face plate, with MC0031 being a normal size face, with an upper legend “61” (“anchor up”) positive lens, with a lower legend “62” (“anchor down”) positive lens.



Use steps 3 through 7 below to specify your 428RSP switch face legends / markings. For legends 00 to 02, skip steps 5 and 7. Contact Airpax ED&D to specify face guard options. Switch bank housings are modular, and can be combined into “one housing assembly”. An E-Plex connection is required for each switch bank ordered.

STEP 3	Choose between normal and narrow button face
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CODE	DESCRIPTION
MC0031	Normal size
MC0033	Narrow size (for face guard)

STEP 4	Select from the “Legends” on pages 6 and 7 to set the upper legend symbol
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STEP 5	Upper legend, choose between “P” for positive lens, “N” for negative lens, “B” for blank / none
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CODE	DESCRIPTION
P	Positive lens (LED lighting around the symbol)
N	Negative lens (LED lighting through the symbol only)

STEP 6	Select from the “Legends” on pages 6 and 7 to set the lower legend symbol
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




































STEP 7	Lower legend, choose between “P” for positive lens, “N” for negative lens, “B” for blank / none
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CODE	DESCRIPTION
P	Positive lens (LED lighting around the symbol)
N	Negative lens (LED lighting through the symbol only)











































Legends

SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE
	NONE	00		WATER TANK	14		RUNNING LIGHTS	28
	INDICATOR STYLE 1	01		RIGHT STABILIZER	15	 SPOTLIGHT	MASTER LIGHT SWITCH (SPOTLIGHT)	29
	INDICATOR STYLE 2	02		LEFT STABILIZER	16	 OVERHEAD	MASTER LIGHT SWITCH (OVERHEAD)	30
 WIPER	WIPER WITH TEXT	03		DEPTH SOUNDER	17	 ENTRY	MASTER LIGHT SWITCH (ENTRY)	31
	WIPER	04		BATTER-IES	18	 HULL	MASTER LIGHT SWITCH (HULL)	32
 1	WIPER (#1)	05		LAMP 01	19	 DIMMER	MASTER LIGHT SWITCH (DIMMER)	33
	WINDSHIELD WASHER / WIPER	06		LAMP 02	20	 COCKPIT	MASTER LIGHT SWITCH (COCKPIT)	34
 WASHER	WINDSHIELD WASHER WITH TEXT	07		LAMP (BRIGHTER)	21	 BRIDGE	MASTER LIGHT SWITCH (BRIDGE)	35
	WINDSHIELD WASHER	08		LAMP (DIMMER)	22	 BILGE	MASTER LIGHT SWITCH (BILGE)	36
	REAR WINDSHIELD WASHER	09		INTERIOR LIGHTS	23		MASTER LIGHT SWITCH	37
	DE-FROSTER	10		HIGH BEAM LIGHTS	24		LIGHTS	38
	HORN	11		LOW BEAM LIGHTS	25		TURN SIGNALS	39
	TRIM TAB 1	12		ANCHOR / RUNNING LIGHTS	26		VENTILATION FAN / BLOWER	40
	TRIM TAB 2	13		ANCHOR LIGHTS	27		GENERATOR	41




































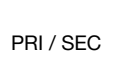






Legends

SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE
	FUEL	42		MUTE	56		ACCESSORY (TEXT)	70
	ENGINE STOP	43		MUSIC	57		SPEED CONTROL (TEXT)	71
	ENGINE START	44		ANCHOR	58		TENDER HATCH (TEXT)	72
	EMERGENCY START			ANCHOR w/ MAIN	59		ENGINE HATCH (TEXT)	73
	ENGINE BLOCK HEATER	46		ANCHOR (UP)	60		CLOSE (TEXT)	74
	DRIVE TILT UP	47		ANCHOR (DOWN)	61		NAVIGATIONAL EQUIPMENT (TEXT)	75
	BILGE PUMP	48		ANCHOR (UP/DOWN)	62		CHART LIGHT (TEXT)	76
	BILGE PUMP (#1)	49		STOP REQUEST	63		LED (TEXT)	77
	BILGE PUMP (#2)	50		HAZARD WARNING	64		ENGINE BAY LIGHTS	78
	BILGE PUMP (#3)	51		ENGINE SYNC	65		LIGHT w/ TEXT "LIGHTS OVER- HEAD"	79
	BILGE PUMP (#4)	52		ELECTRIC (TEXT)	66		LIGHT w/ TEXT "COCKPIT INDI- RECT"	80
	BILGE PUMP w/ FWD	53		AUTO PILOT	67		LIGHT w/ TEXT "ENTRY INDIRECT"	81
	BILGE PUMP w/ AFT	54		RADAR (TEXT)	68		LIGHT w/ TEXT "HULL LIGHTS"	82
	BILGE BLOWER	55		THRUSTER MAIN (TEXT)	69		LIGHT w/ TEXT "OVERHEAD AFT"	83














Legends

SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE
	LIGHT w/ TEXT "OVERHEAD OUTER"	84		"STEP LIGHTS" (TEXT)	98		"SIREN HORN" (TEXT)	112
	LIGHT w/ TEXT "OVERHEAD INNER"	85		NAVIGATION LIGHTS "NAV LTS" (TEXT)	99		AFT 2 BILGE PUMP w/ TEXT "AFT 2"	113
	LIGHT w/ TEXT "FWD INDIRECT"	86		ANCHOR LIGHTS "ANCH LTS" (TEXT)			WIPER w/ TEXT "WIPER ON"	114
	LIGHT w/ TEXT "AFT INDIRECT"	87		"WELCOME ABOARD" (TEXT)	101		WIPER w/ TEXT "WIPER OFF"	115
	"BLACK" (TEXT)	88		"PLATFORM" (TEXT)	102		HIGH BEAM LIGHTS w/ TEXT "UW LIGHT"	116
	POWER WINDOW UP	89		"STEPS" (TEXT)	103		INTERIOR LIGHTS w/ TEXT "CABIN"	117
	POWER WINDOW DOWN	90		"STEPS / PLATFORM" (TEXT)	104		INTERIOR LIGHTS w/ TEXT "ENG RM"	118
	"AUX" (TEXT)	91		"GRILL" (TEXT)	105		LIGHT w/ TEXT "DECK"	119
	FORWARD BILGE PUMP w/ TEXT "FWD BILGE"	92		FOG HORN w/ TEXT "FOG"	106		INTERIOR LIGHTS w/ TEXT "HARDTOP"	120
	MID BILGE PUMP w/ TEXT "MID BILGE"	93		POWER WINDOW UP / DOWN	107		LAMP 2 w/ TEXT "HELM LT"	121
	AFT 1 BILGE PUMP w/ TEXT "AFT 1"	94		"MASTER" (TEXT)	108		RUNNING LIGHTS w/ TEXT "NAV LT"	122
	ACCESSORY SWITCH w/ TEXT "ACC"	95		"PRI / SEC" (TEXT)	109		ANCHOR LIGHTS w/ TEXT "ANCHOR"	123
	MASTER LIGHT SWITCH w/ TEXT "OVERHEAD AFT"	96		"FRONT LT BAR" (TEXT)	110		BATTERIES w/ TEXT "PORT"	124
	"SEARCH LIGHT" (TEXT)	97		"CORNER LIGHTS" (TEXT)	111		BATTERIES w/ TEXT "HOUSE"	125

Legends

SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE
 STBD	BATTERIES w/ TEXT "STBD"	126		REAR BILGE PUMP	140		RAISE LIGHT	154
 EMERG	BATTERIES w/ TEXT "EMERG"	127	 BILGE	BILGE LIGHTS	141		LOWER LIGHT	155
 GEN START	ENGINE START w/ TEXT "GEN START"	128	 INDIRECT	INDIRECT LIGHTS	142	 WINDLASS ENABLE	"WINDLASS ENABLE" (TEXT)	156
 GEN STOP	ENGINE STOP w/ TEXT "GEN STOP"	129	 WHITE	WHITE OVERHEAD LIGHTS	143	 BLUE	BLUE OVERHEAD LIGHTS	157
 ELEC- TRONIC	ACCESSORY SWITCH w/ TEXT "ELECTRONIC"	130	 RED	RED OVERHEAD LIGHTS	144	 ELEC	ELECTRONIC SONAR	158
 BLOWER	BILGE BLOWER w/ TEXT "BLOWER"	131	 WHITE	WHITE SIDE MARKER LIGHT	145	 HORN	HORN w/ TEXT "HORN"	159
 HATCH	HATCH UP ARROW w/ TEXT "HATCH"	132	 RED	RED SIDE MARKER LIGHT	146	 WATER	WATER PUMP	160
 HATCH	HATCH DOWN ARROW w/ TEXT "HATCH"	133	 BRDNG	BOARDING LIGHTS	147	 SWIM PLATFORM	SWIM PLATFORM	161
 WINDLASS	ACCESSORY SWITCH w/ TEXT "WINDLASS"	134	 CRTSY	COURTESY LIGHTS	148	 SWIM PLAT- FORM ↑	RAISE SWIM PLATFORM POSITION	162
 SWITCH DIMMER	"SWITCH DIMMER" (TEXT)	135		UNDERWATER LIGHTS	149	 SWIM PLAT- FORM ↓	LOWER SWIM PLATFORM POSITION	163
 WINDLASS	ANCHOR UP 2 w/ TEXT "WINDLASS"	136	 TV ↑	RAISE TV POSITION	150	 MASTER	"MASTER" (TEXT)	164
 WINDLASS	ANCHOR DOWN 2 w/ TEXT "WINDLASS"	137	 TV ↓	LOWER TV POSITION	151	 PRI / SEC	"PRI / SEC" (TEXT)	165
 FWD BILGE PUMP	FWD BILGE PUMP	138	 TABLE ↑	RAISE TABLE POSITION	152	 FRONT LT BAR	"FRONT LIGHT BAR" (TEXT)	166
 MID BILGE PUMP	MID BILGE PUMP	139	 TABLE ↓	LOWER TABLE POSITION	153	 CORNER LIGHTS	"CORNER LIGHTS" (TEXT)	167

Legends

SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE	SYMBOL	DESCRIPTION	CODE
SIREN HORN	"SIREN HORN" (TEXT)	168	HATCH DOWN	"HATCH DOWN" (TEXT)	182	HI	"HI" (TEXT)	196
LEFT FLOOD	LEFT FLOOD LIGHTS "LEFT FLOOD" (TEXT)	169	 PARALLEL	BATTERIES IN PARALLEL	183	LOW	"LOW" (TEXT)	197
RIGHT FLOOD	RIGHT FLOOD LIGHTS "RIGHT FLOOD" (TEXT)	170	HORN COMPRESSOR	"HORN COMPRESSOR" (TEXT)	184		BILGE PUMP w/ TEXT "5"	198
REAR LOAD	"REAR LOAD" (TEXT)		 PORT ON	PORT WINDSHIELD WIPERS ON	185	PORT	"PORT" (TEXT) w/ LIGHTED INDICATOR	199
PATIENT HEAT A / C	"PATIENT HEAT A/C" (TEXT)	172	 PORT DELAY	PORT WINDSHIELD WIPERS DELAY	186	STBD	"STBD" (TEXT) w/ LIGHTED INDICATOR	200
BACK UP ALARM	"BACK UP ALARM" (TEXT)	173	 STBD ON	STBD WINDSHIELD WIPERS ON	187			
LEFT DOMES	"LEFT DOMES" (TEXT)	174	 STBD DELAY	STBD WINDSHIELD WIPERS DELAY	188			
RIGHT DOMES	"RIGHT DOMES" (TEXT)	175	 INT STEP	INTERIOR STEP LIGHT	189			
FLOUR LIGHTS	FLUORESCENT LIGHTS "FLOUR LIGHTS" (TEXT)	176	 PILOTHOUSE	RAISE PILOT LIGHT	190			
EXHAUST FAN	"EXHAUST FAN" (TEXT)	177	 PILOTHOUSE	LOWER PILOT LIGHT	191			
SUCTION PUMP	"SUCTION PUMP" (TEXT)	178	 UP	RAISE ANCHOR POSITION	192			
 COCKPIT	RAISE COCKPIT LIGHT	179	 DOWN	LOWER ANCHOR POSITION	193			
 COCKPIT	LOWER COCKPIT LIGHTS	180	AFT SPREADER	"AFT SPREADER" (TEXT)	194			
HATCH UP	"HATCH UP" (TEXT)	181	FWD SPREADER	"FWD SPREADER" (TEXT)	195			



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