



SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data Sheet

PE71S6505

Features

- Single Pole Six Throw (SP6T) Electromechanical Relay Switch
- DC to 12 GHz Frequency Range
- Normally Open Actuator
- TTL Logic Control
- Indicators
- 2M Lifecycle Rating
- Insertion Loss 0.2 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.25:1 max
- +28 Volt DC Bias
- Solder Terminal Pins for DC Command Control
- N Type Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 160 Watt Average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

Applications

- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

Description

The PE71S6505 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range of DC to 12 GHz and can handle up to 160W of average power in a break before make condition. The design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Impressive typical performance includes 0.2 dB insertion loss and isolation greater than 70 dB. This switch requires +28Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports N Type female connectors and Solder Pins for DC control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

Electrical Specifications (TA = +25°C, DC Voltage = +28 Vdc)

Switch Type SP6T
Actuator Type Normally Open

Description	Minimum	Typical	Maximum	Units
Frequency Range	DC		12.4	GHz
Operating Voltage		+28		Volts
Actuating Set Current @ +28 Volts			280	mA
VSWR		1.4:1	1.7:1	
Insertion Loss		0.2	0.7	dB
Isolation	60	70		dB
Input Power (CW) (at 12.4 GHz)			160	Watts

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](#)



SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data

PE71S6505

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC to 1	1 to 4	4 to 8	8 to 12		GHz
VSWR, Max	1.25:1	1.4:1	1.45:1	1.7:1		
Insertion Loss, Max	0.3	0.4	0.4	0.7		dB
Isolation, Min	70	60	60	60		dB

Mechanical Specifications

Size

Length	2.15 in [54.61 mm]
Width/Diameter	2.5 in [63.5 mm]
Height	2.5 in [63.5 mm]
Weight	0.1 lbs [45.36 g]

Connectors

RF Connector Type	N Female
-------------------	----------

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
-------	--

Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)
-----------	---

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](#)

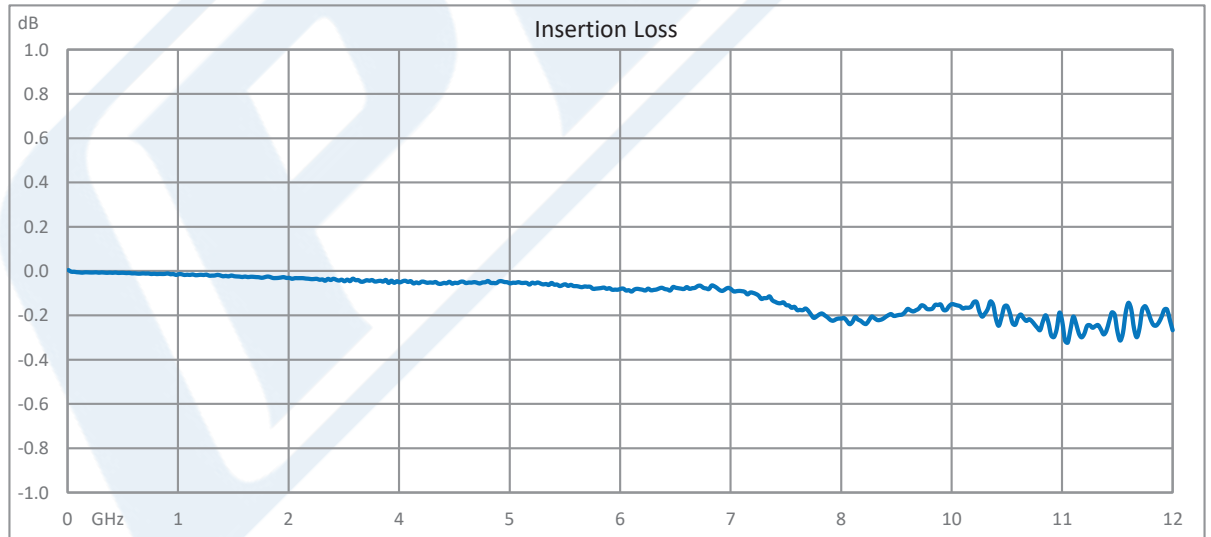
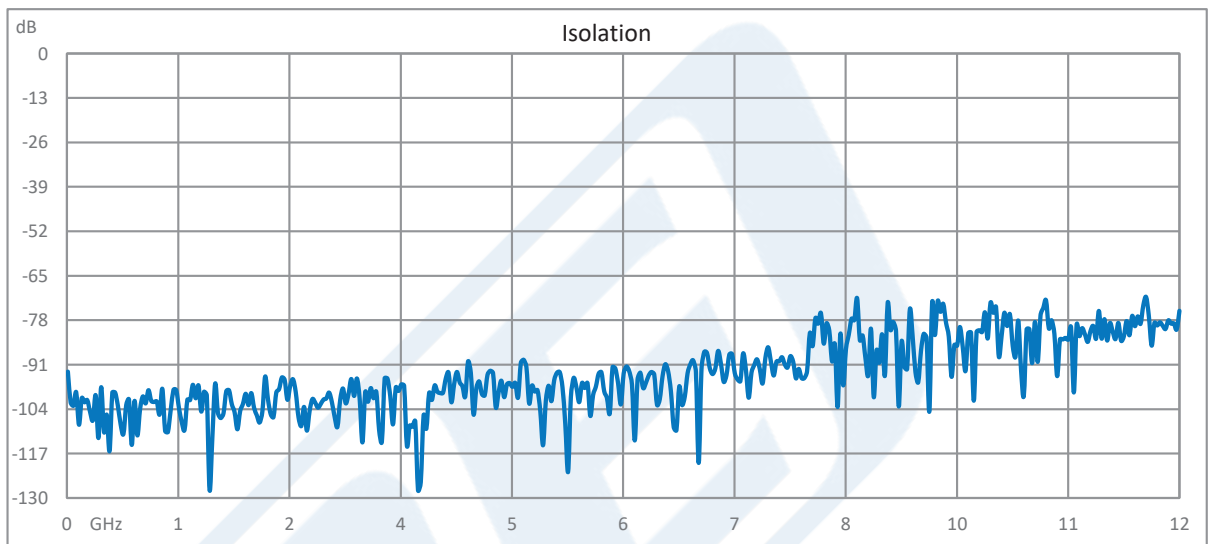


SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data

PE71S6505

Typical Performance Data



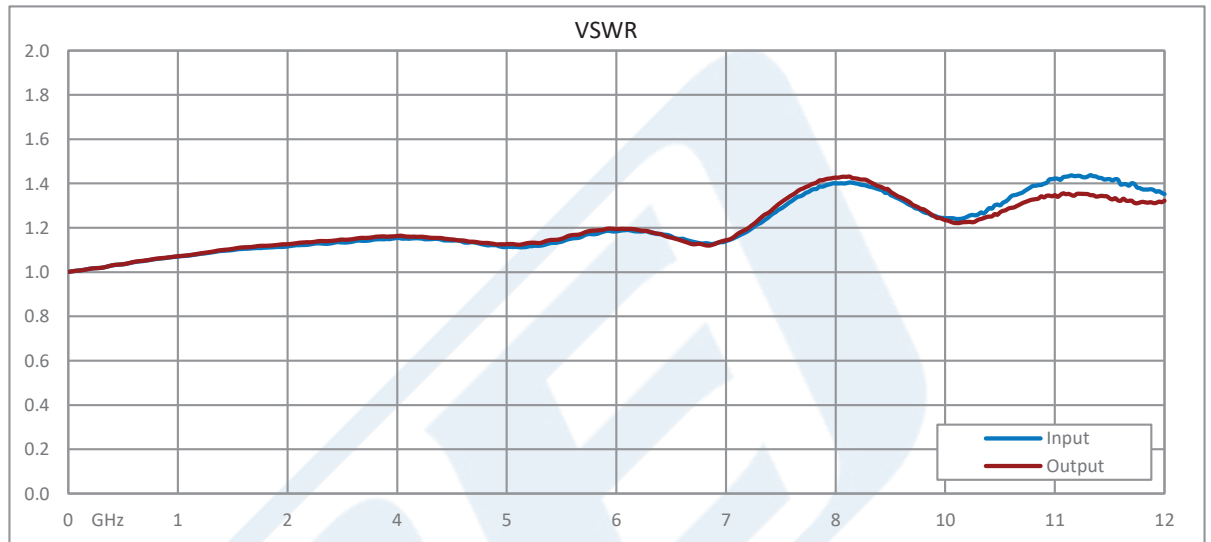
Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](#)



SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data

PE71S6505



Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](#)

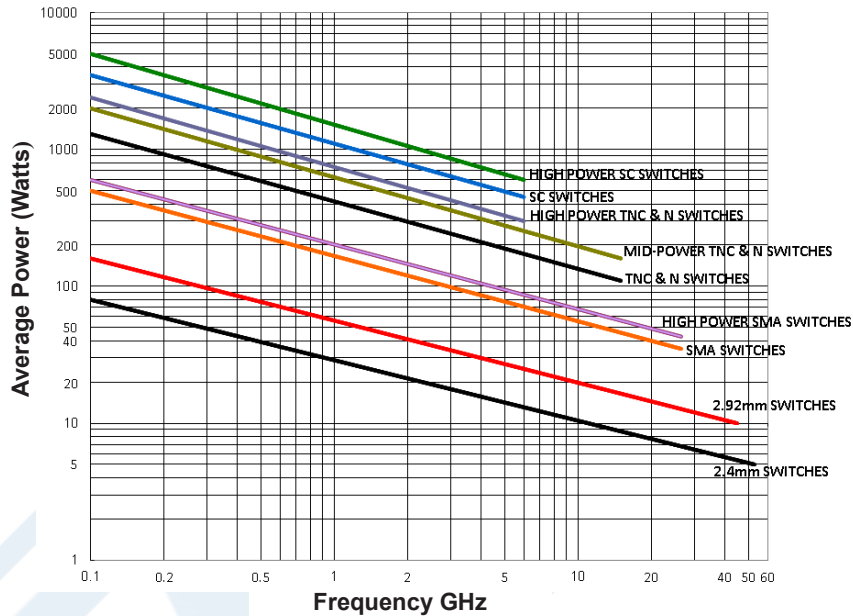


SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data

PE71S6505

Power Handling vs. Frequency



Power Handling De-rating vs. Load VSWR



Power Handling Chart and Derating Curves based on the following Test and Environmental Conditions:
 Ambient temperature: 20-25°C
 Altitude: Sea Level to 1,000 feet
 Relative Humidity: 50-55%
 Load VSWR: ≤ 1.20:1
 Operation: Cold Switching

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](#)



SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

Electromechanical Relay Switches Technical Data

PE71S6505

SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins PE71S6505](https://www.pasternack.com/sp6t-electromechanical-relay-normally-open-switch-dc-to-12.4-ghz-2m-lifecycles-n-160-watts-28v-solder-pins-pe71s6505)

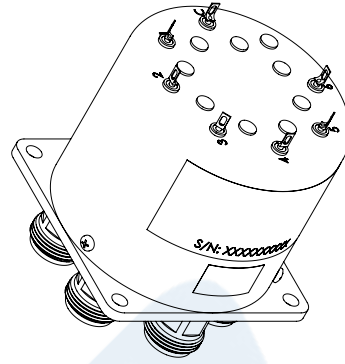
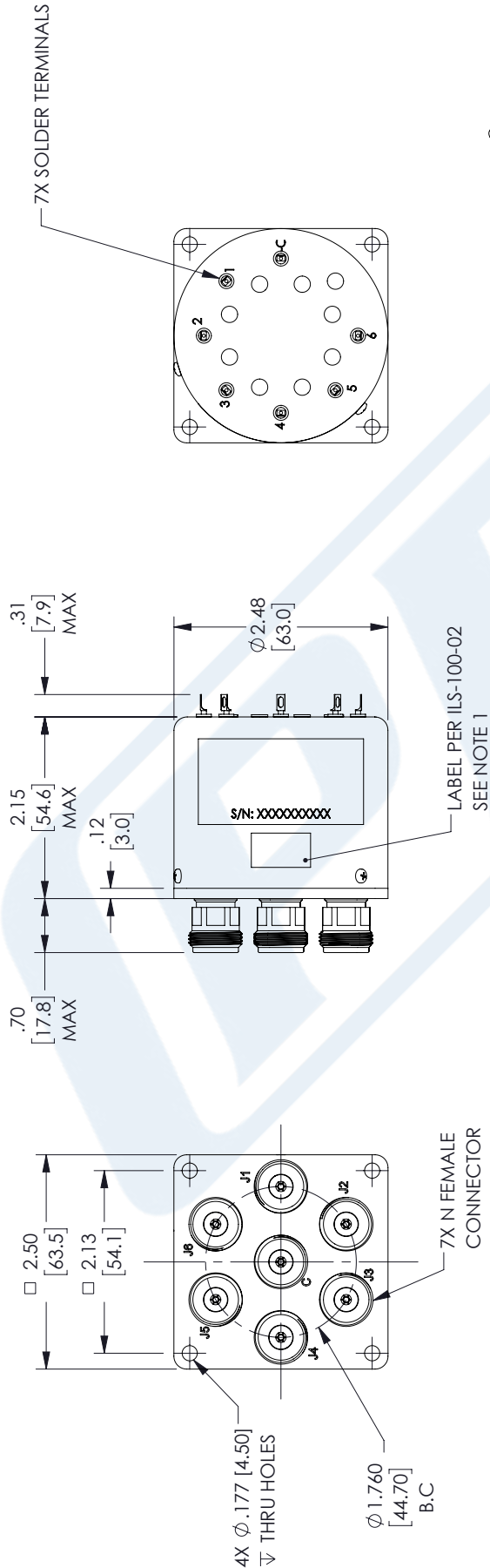
URL: <https://www.pasternack.com/sp6t-electromechanical-relay-normally-open-switch-12.4-ghz-160w-28v-n-pe71s6505-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

PE71S6505 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/17/2022	T. GALLA



UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:

.X = ±.2	[5.08]	FRACTIONS
.XX = ±.02	[.51]	±.132
.XXX = ±.005	[.13]	ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:

L ≤ 12 [305]	= +1 [25] / -0
12 [305] < L ≤ 60 [1524]	= +2 [51] / -0
60 [1524] < L ≤ 120 [3048]	= +4 [102] / -0
120 [3048] < L ≤ 300 [7620]	= +6 [152] / -0
300 [7620] < L	= +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION

THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF PASTERNAK CORPORATION ALL RIGHTS RESERVED.

SHEET 1 OF 2

SCALE N/A

REV A

PE PASTERNAK
an INFINITE brand

Pasternack Enterprises, Inc.
P.O. Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com

ITEM NO. PE71S6505

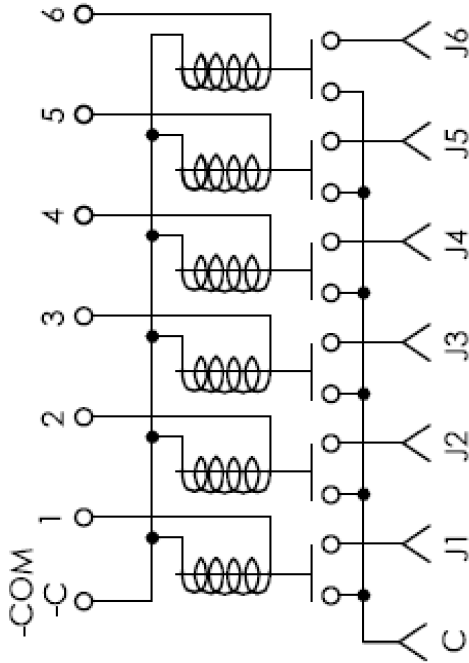
SIZE A CAGE CODE 53919 DRAWN BY KGLEBOVA

- NOTES:
- LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
LABEL LOCATION FOR REFERENCE ONLY.

THESE COMMODITIES, TECHNOLOGY OR SOFTWARE WERE EXPORTED FROM THE UNITED STATES IN ACCORDANCE WITH THE EXPORT ADMINISTRATION REGULATIONS. DIVERSION CONTRARY TO U.S. LAW PROHIBITED.

PE71S6505 CAD Drawing

SP6T Electromechanical Relay Normally Open Switch DC to 12.4 GHz, 2M Lifecycles, N, 160 Watts, 28V, Solder Pins



RF POSITION
SCHEMATIC

TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS PIN ASSIGNMENT	RF PATH					
	J1	J2	J3	J4	J5	J6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	OFF	OFF	ON	OFF	OFF	OFF
4	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF
6	OFF	OFF	OFF	OFF	OFF	ON

PIN -C. -COM

UNLESS OTHERWISE SPECIFIED
LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [] ARE MILLIMETERS

TOLERANCES:
 .X = ±.2 [.08] FRACTIONS
 .XX = ±.02 [.51] ± 1/32
 .XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:
 L ≤ 12 [305] = +1 [25] / -0
 12 [305] < L ≤ 60 [1524] = +2 [51] / -0
 60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
 120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
 300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN
ARE FOR REFERENCE ONLY.

PE PASTERNAK
an INFINITE brand

Pasternack Enterprises, Inc.
P. O. Box 16759, Irvine, CA 92623.
Phone: 1.949.261.1920 | 1.866.727.8376
Fax: 1.949.261.7451
Website: www.pasternack.com
E-mail: sales@pasternack.com

SIZE [CAGE CODE] DRAWN BY
A 53919 KGLEBOVA

ITEM NO. PE71S6505

THIRD-ANGLE PROJECTION

THE INFORMATION AND DESIGN IN THIS DOCUMENT IS THE PROPERTY OF PASTERNAK CORPORATION. ALL RIGHTS RESERVED.

SHEET 2 OF 2

SCALE N/A

REV A