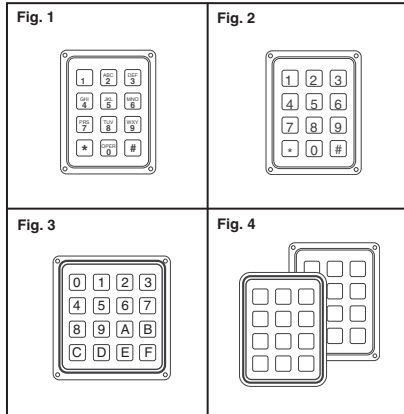
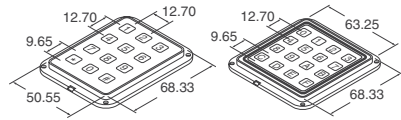




Series 88 Sealed Keypads

Versatile keypads that work indoors or outdoors.



Grayhill Series 88 keypads are fully sealed keypads for use indoors or outdoors that offer a fully sealed snap-dome contact with an operational life of 3 million operations per key. Various colored graphic overlays are available or you can create your own keypad by using 3 items: (1) a blank keyboard; (2) the clear window overlay; (3) a sheet of legend transfers. Optional panel seal gasket provides a dust and water weather seal between your keypad and your equipment panel.

Specifications:

Rating Criteria: • Rating at 24Vdc: 10 millamps, resistive • **Contact Resistance:** Compatible with MOS, TTL and DTL (10 Ω maximum) • **Voltage Breakdown:** 250Vac between mutually insulated parts • **Life Expectancy:** 3,000,000 operations per button • **Contact Bounce:** Less than 4 milliseconds at make, 10 milliseconds at break • **Operating Temperature:** -40°C - 80°C.

Operating Features: • **Button Travel:** 0.015" (.381mm) nominal total travel • **Typical Operating Force:** 350 grams.

Materials and Finishes: • **Housing:** ABS polycarbonate, black • **Graphic Overlay:** Polyester • **Contact Dome:** Stainless steel, selectively gold plated • **Terminals:** Copper alloy, CDA No. 725, Tin-lead plated.

Fig.	Description	Digi-Key Part No.	1	Price Each 10	100	Grayhill Part No.
Series 88 Keypads						
1	12-Key Keypad with Black housing; White keys and Black lettering	GH5012-ND	23.60	20.71	17.70	88AB2-143
2	12-Key Keypad with Black housing; White keys and Blue lettering	GH5013-ND	23.60	20.71	17.70	88AB2-152
2	12-Key Keypad with Black housing; Blue keys and White lettering	GH5014-ND	23.60	20.71	17.70	88AB2-172
3	16-Key Keypad with Black housing, Blue/White keys and Black/Blue lettering	GH5015-ND	27.26	23.93	20.45	88BB2-052
	16-Key Keypad with Black housing, Blue keys and White lettering	GH5016-ND	27.26	23.93	20.45	88BB2-072
	16-Key Keypad with Black housing, Red keys and White lettering	GH5017-ND	27.26	23.93	20.45	88BB2-082
Series 88 Clear Key Keypads — Customize Your Own Keypad Layout						
4	12-Key Keypad with Blank keys for use with Legend sheets below	GH5018-ND	18.73	16.44	14.05	88AB2
	16-Key Keypad with Blank keys for use with Legend sheets below	GH5019-ND	20.82	18.27	15.62	88BB2
	20-Key Keypad with Blank keys for use with Legend sheets below	GH5020-ND	27.74	24.35	20.81	88JB2
	Legend Sheet, Small Print lettering for Blank Keys, dry transfer type	GH5021-ND	3.78	3.57	2.84	87-DT-2096-088
	Legend Sheet, Medium Print lettering for Blank Keys, dry transfer type	GH5022-ND	3.78	3.57	2.84	87-DT-2096-125
	Legend Sheet, Large Print lettering for Blank Keys, dry transfer type	GH5023-ND	3.78	3.57	2.84	87-DT-2096-187
	Legend Sheet, Medium Print lettering for Blank Keys, self-adhesive type	GH5024-ND	5.23	4.94	3.93	87AC2046
4	Clear Protective Overlay for 12-Key Keypad (protects your customized lettering)	GH5025-ND	17.04	16.10	12.79	88-101
	Clear Protective Overlay for 16-Key Keypad (protects your customized lettering)	GH5026-ND	14.94	14.11	11.21	88-001
	Clear Protective Overlay for 20-Key Keypad (protects your customized lettering)	GH5027-ND	15.48	14.63	11.62	88-201
Panel Seal Gaskets for Series 88 Keypads						
	Optional Panel Gasket Seal for all 12-Key Series 88 Keypads - Subpanel Mount	GH5028-ND	1.29	1.22	.97	88M2001-2
	Optional Panel Gasket Seal for all 16-Key Series 88 Keypads - Subpanel Mount	GH5029-ND	1.32	1.25	.99	88M2009-2
	Optional Panel Gasket Seal for all 20-Key Series 88 Keypads - Subpanel Mount	GH5030-ND	1.37	1.30	1.03	88M2019-1
	Optional Panel Gasket Seal for all 12-Key Series 88 Keypads - Top Panel Mount	GH5031-ND	1.62	1.53	1.22	88M2012-1
	Optional Panel Gasket Seal for all 16-Key Series 88 Keypads - Top Panel Mount	GH5032-ND	1.69	1.60	1.27	88M2015-1
	Optional Panel Gasket Seal for all 20-Key Series 88 Keypads - Top Panel Mount	GH5033-ND	1.73	1.64	1.31	88M2018-1

Series 96 Keypads

Grayhill's Series 96 are their most economical 3x4 and 4x4 keypad family. They have such features as conductive rubber contacts with an operational life of 3 million operations and a good tactile feel for positive feedback to the operator. GH5001 thru GH5004 have black legends with white keys and a black ABS housing. GH5008 thru GH5011 have white legends with black keys and a black ABS housing.

Specifications:

Rating Criteria: • Rating at 12Vdc: 5mA for .5 seconds • **Contact Bounce:** <12 milliseconds • **Contact Resistance:** <100 Ω (@ stated operating force) • **Operation Life:** 3,000,000 minimum cycles per key • **Operating Force:** 175 \pm 40 grams • **Operating Temperature:** -30°C - 80°C **Material and Finishes:** • **Terminal Pin:** Phosphor Bronze, solder plated • **PC Board:** FR-4 glass cloth epoxy • **Keypad:** Silicone rubber • **Housing:** ABS, cyclocac "KJW" • **Housing Color:** Black • **Output:** Matrix (Rear SIL Header)

12 Key mating connector use Digi-Key® part numbers: A3016-ND (connector, 1 piece) / A3007-ND (contacts, 1 package); **16 Key mating connector use Digi-Key® part numbers:** A3017-ND (connector, 1 piece) / A3007-ND (contacts, 1 package)

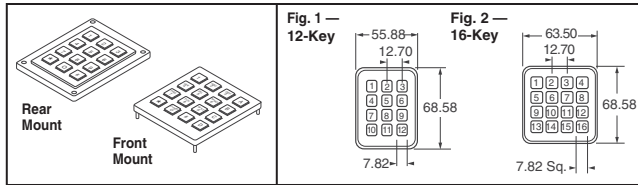


Fig.	Description	Digi-Key Part No.	1	Price Each 10	100	Grayhill Part No.
1	12 Key Keypad, Front Mount, White Keys	GH5001-ND	11.56	10.15	8.67	96AB2-102-F
1	12 Key Keypad, Rear Mount, White Keys	GH5002-ND	11.56	10.15	8.67	96AB2-102-R
2	16 Key Keypad, Front Mount, White Keys	GH5003-ND	12.87	11.30	9.66	96BB2-006-F
2	16 Key Keypad, Rear Mount, White Keys	GH5004-ND	12.87	11.30	9.66	96BB2-006-R
1	12 Key Keypad, Front Mount, Black Keys	GH5008-ND	11.56	10.15	8.67	96AB2-152-F
1	12 Key Keypad, Rear Mount, Black Keys	GH5009-ND	11.56	10.15	8.67	96AB2-152-R
2	16 Key Keypad, Front Mount, Black Keys	GH5010-ND	12.87	11.30	9.66	96BB2-056-F
2	16 Key Keypad, Rear Mount, Black Keys	GH5011-ND	12.87	11.30	9.66	96BB2-056-R

NEW! Series 37 Piezo Keypads and Pushbuttons

Vandal Resistant and Virtually Indestructible

Function:

The switch function is based on the physical principal of the Piezo effect. The external push force activates a Piezo element that releases voltage utilized for switching (MosFet).

Advantages:

• Suitable for harsh environments • Sealed metal surface, epoxy potted • Pressure activated, no moving parts • Water and dust proof • Long life expectancy, tested for 50 million cycles

Applications:

• Vending machines • Lifts • Food industry • Mining equipment • Chemical and petrochemical industry • Safety and security • Medical equipment • Industrial machinery

Specifications:

• Rated Voltage: 24 VAC or VDC • Rated Current: 200mA maximum, 1A if requested • Switch Resistance "ON": 10 Ω maximum • Switch Resistance "OFF": >5M Ω • Switch Capacitance: 25 pF • Actuation Force (typical): 3-5N • Operating Temperature: -20°C - 75°C • IP68 per IEC 529

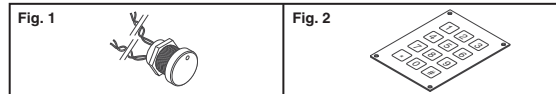


Fig.	Description	Digi-Key Part No.	1	Price Each 10	100	Grayhill Part No.
PIEZO Pushbuttons						
1	Momentary with Pins, Smooth Front	GH7300-ND	22.50	21.17	20.26	37FMA1-AAP1N
	Momentary 18" leads with Red LED	GH7301-ND	43.88	42.00	39.50	37FML1-AA11N
	Momentary 18" leads with Red LED Ring	GH7302-ND	90.00	84.08	81.00	37FBRI-AAW1121N
PIEZO Keypads						
2	PIEZO 12-Key Aluminum Matrix	GH7304-ND	145.00	133.95	130.01	37F1-AB2-AC1
	PIEZO 16-Key Aluminum Matrix	GH7305-ND	155.00	143.55	139.50	37F1-BB2-AC1

Cannon



12-Key with 2 legend sets - A-L / 1-9 * / #

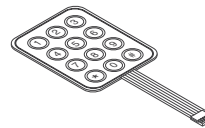
Features:

• Adhesive backed for easy mounting • Tactile feedback on all keys • Attached .1" female connector • Legends easily swapped • Allows for custom legends • Rim embossed keys for finger placement • Splash proof, sealed switches • Low profile height (.059 inches)

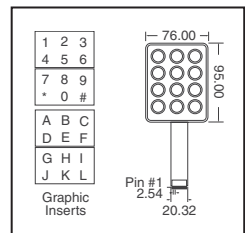
Specifications:

• **Contact Rating:** 0.5VA, 100mA, 30VDC maximum • **Actuation Force:** 300 grams • **Contact Bounce:** Below 10msec. typical • **Travel:** 0.63 - 0.76mm typical • **Operating Temperature:** -30°C - 60°C **Materials:** • **Overlay:** Polyester/polycarbonate blend with uniform low gloss fine texture • **Connector:** Single row female connector, tin lead plating

Sealed Membrane Keypads with Removable Legends



Digi-Key Part No.	Price Each 1	10	100	ITT Ind. Part No.
CKN6010-ND	25.37	21.91	18.45	4234A1



More Product Available Online: www.digikey.com

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