DALLAS
SEMICONDUCTOR

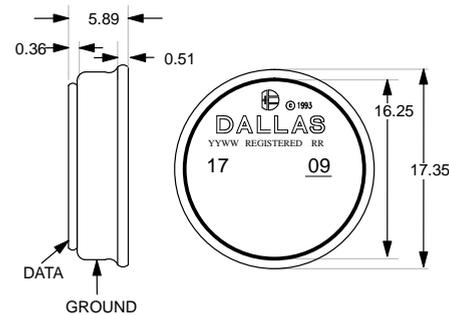# DS1422
1Kbit Add–Only UniqueWare Button

SPECIAL FEATURES

- 1024–bits Electrically Programmable Read Only Memory (EPROM) partitioned into four 256–bit pages for randomly accessing packetized data records

- Each memory page can be permanently write–protected to prevent tampering

- Device is an "add only" memory where additional data can be programmed into EPROM without disturbing existing data

- Architecture allows software to patch data by superseding an old page in favor of a newly programmed page

- Reads over a wide voltage range of 2.8V to 6.0V from –40°C to +85°C; programs at 11.5V ± 0.5V from –40°C to +85°C

COMMON BUTTON FEATURES

- Unique, factory–lasered 64–bit identification number

- Communicates at 16.3Kbits per second

- Standard 16 mm diameter and 1–Wire protocol ensure compatibility with Button family

- Steel case withstands harsh environments

- Meets UL#913 (4th Edit.); Intrinsically Safe Apparatus, Approved under Entity Concept for use in Class I, Division 1, Group A, B, C and D Locations

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DESCRIPTION

The DS1422 UniqueWare Button is an add only alternative to the static RAM based DS1425 and DS1427 Buttons. The DS1422 consists of a factory–lasered 64 bit identification number plus 1Kbit of EPROM, which is user–programmable. The power to program and read the DS1422 is derived entirely from the 1–Wire communication line. Data is transferred serially via the 1–Wire protocol. The entire device can be programmed and then write–protected if desired. Alternatively, the part may be programmed multiple times with new data being appended to, but not overwriting, existing data with each subsequent programming of the device. Note: Individual bits can be changed only from a logical 1 to a logical 0, never from a logical 0 to a logical 1. A provision is also included for indicating that a certain page or pages of data are no longer valid and have been replaced with new or updated data that is now residing at an alternate page address. This page address redirection allows software to patch data and enhance the flexibility of the device as a standalone database.

The DS1422 can be programmed with unchangeable information (perhaps a division, location or family code of the applications origin) and used to maintain update and version control information, tied to a unique identification number. Audibility becomes a snap by reading the history of the software's distribution, customized for each installation of your software.

DS1422 MEMORY MAP Figure 1

STARTING
ADDRESS

8–BIT SCRATCHPAD

0000h	PAGE 0 32 BYTES
0020h	PAGE 1 32 BYTES
0040h	PAGE 2 32 BYTES
0060h	PAGE 3 32 BYTES

1024–BIT
EPROM

EPROM STATUS BYTES

ADDRESS:	0007h (MSB)	0006h	0005h	0004h	0003h	0002h	0001h	0000h (LSB)
	7	6	5	4	3	2	1	0

FACTORY–PROGRAMMED 00h

RESERVED FOR FUTURE EXPANSION

PAGE ADDRESS REDIRECTION BYTE FOR PAGE 3

PAGE ADDRESS REDIRECTION BYTE FOR PAGE 2

PAGE ADDRESS REDIRECTION BYTE FOR PAGE 1

PAGE ADDRESS REDIRECTION BYTE FOR PAGE 0

BIT 0 = WRITE PROTECT PAGE 0
BIT 1 = WRITE PROTECT PAGE 1
BIT 2 = WRITE PROTECT PAGE 2
BIT 3 = WRITE PROTECT PAGE 3
BIT 4–7 = RESERVED