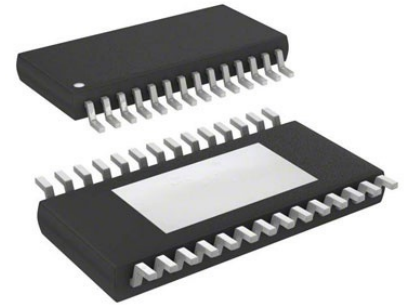


AFE 2 ADC 3.3V/5V 20-Pin TSSOP T/R



Images are for reference only

[Inquiry](#)

Manufacturer: [STMicroelectronics, Inc](#)

Package/Case: TSSOP

Product Type: Data Conversion ICs

RoHS: RoHS Compliant/Lead free 

Lifecycle: NRND

General Description

The STPM01 is designed for effective measurement of active, reactive and apparent energy in a power line system using Rogowski coil, current transformer and shunt sensors. This device can be implemented as a single chip monophasic energy meter or as a peripheral measurement in a microcontroller based monophasic or 3-phase energy meter. The STPM01 consists, essentially, of two parts: the analog part and the digital part. The former, is composed by preamplifier and 1st order $\Delta \Sigma$ A/D converter blocks, band gap voltage reference, low drop voltage regulator, the latter, is composed by system control, oscillator, hard wired DSP and SPI interface. There is also an OTP block, which is controlled through the SPI by means of a dedicated command set. The configured bits are used for testing, configuration and calibration purpose. From a pair of $\Delta \Sigma$ output signals coming from analog section, a DSP unit computes the amount of consummated active, reactive and apparent energy, RMS and instantaneous values of voltage and current. The results of computation are available as pulse frequency and states on the digital outputs of the device or as data bits in a data stream, which can be read from the device by means of SPI interface. This system bus interface is used also during production testing of the device and/or for temporary or permanent programming of bits of internal OTP. In the STPM01 an output signal with pulse frequency proportional to energy is generated, this signal is used in the calibration phase of the energy meter application allowing a very easy approach. When the device is fully configured and calibrated, a dedicated bit of OTP block can be written permanently in order to prevent accidental entering into some test mode or changing any configuration bit.

Key Features

Active, reactive, apparent energies and RMS values

Ripple free active energy pulsed output

Live and neutral monitoring for tamper detection

Easy and fast digital calibration in only one point over the whole current range

OTP for calibration and configuration

Integrated linear VREGs for digital and analog supply

Selectable RC or crystal oscillator

Support 50 ÷ 60 Hz – IEC62052-11, IEC62053-2x specification

Less than 0.1 % error

Precision voltage reference: 1.23 V and 30 ppm/°C max

Recommended For You

STIS14PHR

STMicroelectronics, Inc

HSOP-8

ST890CDR

STMicroelectronics, Inc

SOP-8

STWD100YNYWY3F

STMicroelectronics, Inc

SOT23-5

STC3100IQT

STMicroelectronics, Inc

QFN

STM706TM6F

STMicroelectronics, Inc

SOP-8

STWD100NYWY3F

STMicroelectronics, Inc

SOT23-5

STPD01PUR

STMicroelectronics, Inc

24-QFN

STGAP2SICSNTR

STMicroelectronics, Inc

SOIC-8

STSPIN230

STMicroelectronics, Inc

VFQFPN16

STNS01PUR

STMicroelectronics, Inc

DFN-12

STWBC

STMicroelectronics, Inc

QFN32

STWBC2

STMicroelectronics, Inc

SOP

STMPS2171MIR

STMicroelectronics, Inc

SO-8

STSPIN240

STMicroelectronics, Inc

QFN16

STMPS2151MIR

STMicroelectronics, Inc

SOP8