Anti Knocking System

HT-AKS-100

Key Features

- Enhanced DSP Processor
- Support Inline and V engine
- Pick Up or Binary signal for timing
- Supports for up to 20 cylinders
- Analog Output for timing reduction 0-5 VDC
- Analog Output for timing reduction 4-20 mAmp
- Binary Output for engine knocking
- Binary Output for Load reduction
- Binary Output for trip, emergency
- USB PnP communication interface for configuration and system monitoring
- IP67
- CAN communications interface for control by third party ECU

Configuration Software:

- Easy configuration and system monitoring

Connector:

- Clip mounting system
- Robust against vibration
- 100% contact guaranteed

Introduction

The HT-AKS-100, an intelligent, digital anti knocking control unit, has a powerful DSP sound processor beeing capable picking the slightest ping of engine knock.

A smart sound filter enables to hear slightest noise from the knocking sensors.

Each individual cylinder can be monitored. Even having less knocking sensors as number of cylinders, the HT-AKS-100 is capable to monitor individual cylinders due to opening timing windows for each cylinder and sensor.

The internal DSP software allows mapping the engine during normal condition and operation and makes adjustment much easyer to determine the correct knocking frequency.

Configuration of the various features and settings of the HT-AKS-100 can be done simply through the intuitive PC application software to match the various available engine setups.

General Description

Pickup sensors

The HT-AKS-100 supports selected Huegli Tech pickup sensors, including an active and a Variable Reluctance type.
For timing signal information the same pick up as for the ignition system can be shared.
Further, the AKS accepts a timing signal from HT-LEF 200 via binary output.
Depending on which Ignition System is used, it is further possible to receive the trigger signal for the HT-AKS-100 through a transformer reading the ignition coil of the first cylinder.

Communication Interfaces

The HT-AKS-100 is equipped with USB and CAN communications interfaces.
The USB interface is used by the HT-AKS-100 PC software for initial system configuration and for operation monitoring.
The CAN interface can be used by third party controllers and ECUs for control and monitoring purposes.

HT-AKS-100 Configuration Software

The HT-AKS-100 System Configuration Software is used to configure and monitoring the system.
Configuration includes:

- Engine spec, Inline or V type
- Number of cylinder
- Trigger disk option
- Detonation Delay
- Detonation Window Width
- Reference frequency
- Lower bound frequency
- Upper bound frequency
- Input Gains for individual cylinder
- Output options timing reduction
- CAN Parameters
- Sample sequence mapping

Alarm Output

The HT-AKS-100 provides 3 binary outputs.

- Knocking detected
- Load Reduction
- Trip (Open GCB or user defined)

Analog Output

The HT-AKS-100 provides 2 analog outputs.
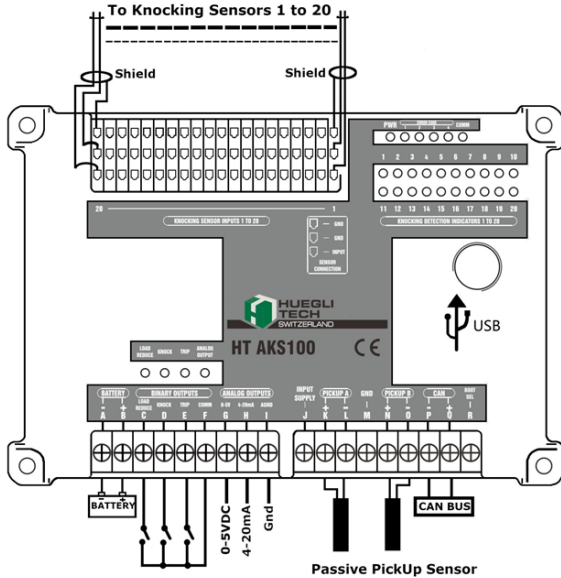
- 0 to 5V max. load current 2mALoad Reduction
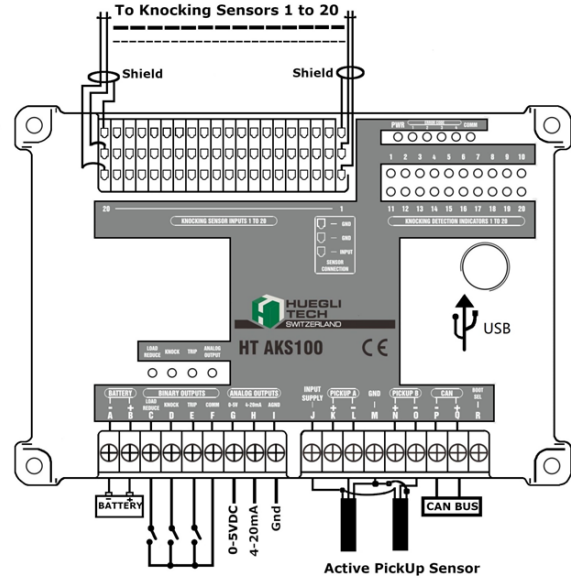- current loop 4-20mA max. Voltage 30V

HUEGLI TECH
SWITZERLAND

System Diagrams

Passive Pick Up

Passive PickUp Sensor

Active Pick Up

Active PickUp Sensor

PC-Software
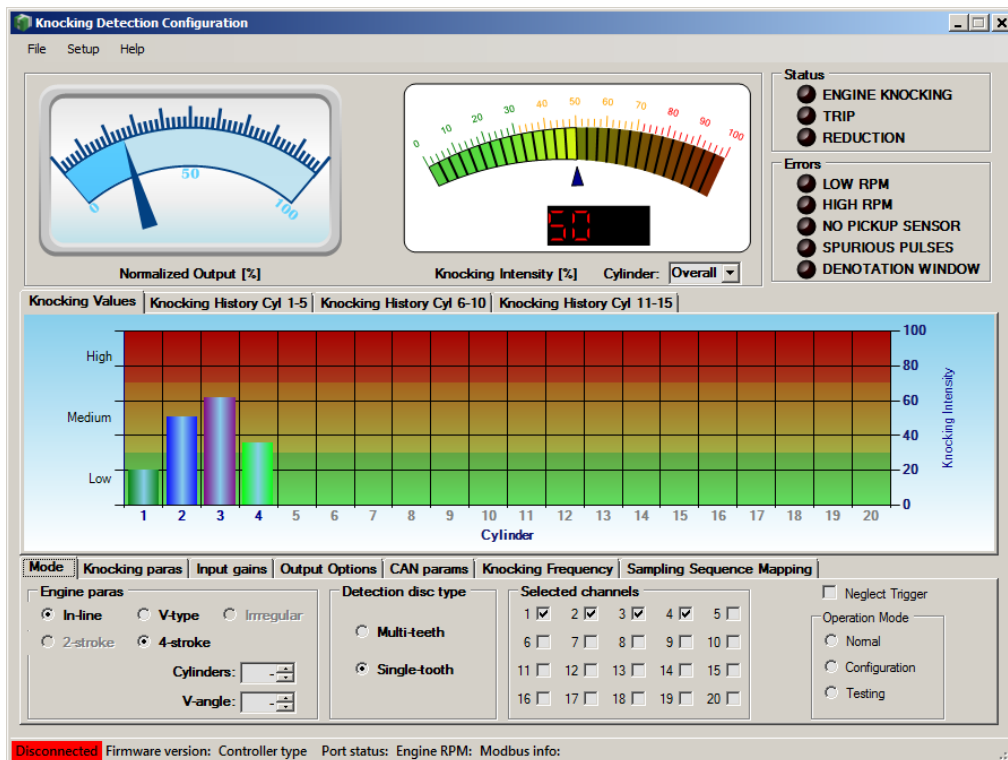
Specifications

Basic

Number of Channels 20

Number of Supported Cylinders 20

Pickup Sensor Types ....Variable Reluctance, Active (Square Wave Output)

Binary Output 3

Analog Output ....(0-5 VDC / 4-20mAmp)..2

Electrical

Supply Voltage ....12 or 24 VDC Battery, (7 VDC to 30 VDC)

Power consumption (Control Electronics only) .... 3 W max @ 25°

Reverse Polarity Protection .... Yes

Transient Voltage Protection 60V

Communications

Ports .... USB, CAN Bus

Configuration Protocol ....USB

External ECU Interface ....CAN Bus / J1939

Norms/Standards

Authorising office .... CE and RoHS requirements

CE certificate EN55011, EN50081-2, EN50082-2, EN61326-1

Reliability

Vibration ....7G, 20-100 Hz

Shock ....20G Peak

Production Test .... 100% functionality inspection

Dimensions and Weight

Dimensions .... 230 x 157 x 49 mm

Weight .... 0.9 kg

Installation ....Screw type (4)

Surroundings

Temperature Range ....-40° to 85°C (-40 to +180°F)

Relative Humidity .... up to 95%

Surface Finish ....Fungus Proof and Corrosion Resistant

Configuration Software

Operating System .... Microsoft Windows 7, 8, 10

Memory (RAM) .... 4 GB

Communications ....USB 2.0 Minimum

Local Distributor / Partner:

HUEGLI TECH

SWITZERLAND

HUEGLI TECH AG (LTD)
Murgenthalstrasse 30
4900 Langenthal Switzerland
Phone: +41 62 916 50 30
Fax: +41 62 916 50 35

e-mail: sales@huegli-tech.com
www.huegli-tech.com