Electronic Top Mounted Hand Throttle 972 000 series

1. Mechanical Specifications:

- **Adjustable actuating force**
- **No return spring**
- **Allows engine constant RPM at selected rate through lever position**
- **Easy to use in combination with Throttle Pedal or Throttle Position Sensor**
- **Very convenient whenever engine is operated from a/several remote stations**
- **CE certified**

Travel angle	90°
Protection classification	IP66
Storage temperature	-40°C to +95°C
Operating temperature	-40°C to +85°C
Connector	AMP - 6 pins - waterproof (IP69)

- **Options: Twin sensors available for 972 000 Hand Throttle series**
  Connector kit or customized wire harness
- **Technical specification sheet and part numbers are available upon request**

2. Electrical Specifications:

- **Complies with 72/245/EEC**
- **E1 number 03 5754**

All Electronic Throttle Controls are fitted with programmable Hall Effect Sensors.

The signals generated by the Electronic Throttle Controls will allow a smooth and precise engine speed control.

The output values are programmable and hence can be adapted to the customer's specifications. Electronic Throttle Controls can be connected directly to the engine management system, or engine Electronic Control Module

Available programmable sensor models:
Please, refer to pages 3 and 4

A/ Programmable single analogue sensor with programmable electronic Idle Validation Switch (IVS)

Analogue channel :

Current consumption	< 7,5mA
Supply (Vs)	Between 5V and 28 V DC
Output signal value	Between 5% and 95% (+/- 1%) of 5V DC
Output current	Max 1mA

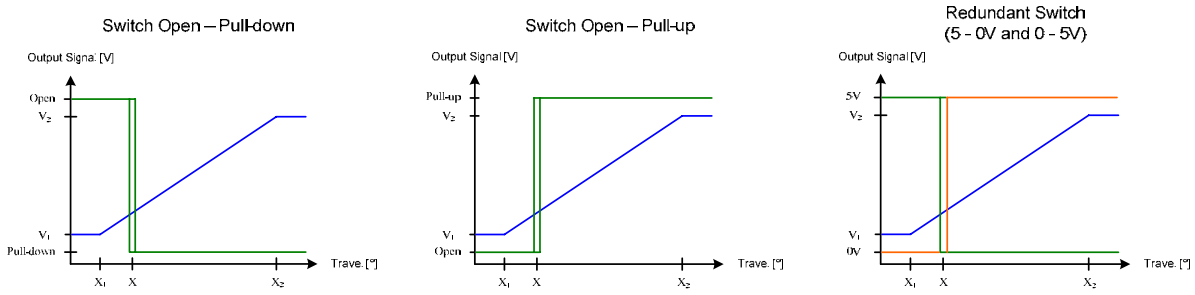
Switch channel option 1 :

Current consumption	< 10mA
Supply (Vs)	Between 8V and 36V DC
Idle Validation Switch	Configurable (Open collector, Pull-up or Pull-down)
Output current	Max 10mA

Switch channel option 2 :

Current consumption	< 10mA
Supply (Vs)	Between 8V and 36V DC
Redundant Idle Validation Switch (2 outputs)	Output 1 : High - Low (5 - 0V) Output 2 : Low - High (0 - 5V)
Output current	Max 1mA / output

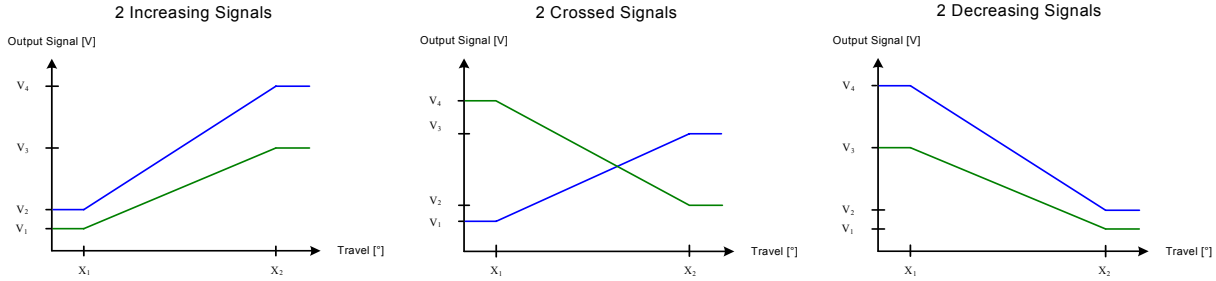
Examples:



B/ Programmable dual output analogue sensor

Current consumption	< 8mA / channel
Supply (Vs)	5V DC / channel
Output channel #1	Between 5% and 95% (+/- 1%) of Vs
Output channel #2	Between 5% and 95% (+/- 1%) of Vs
Output current	Max 1mA / channel

Examples:



C/ Programmable single or dual output digital sensor (PWM)

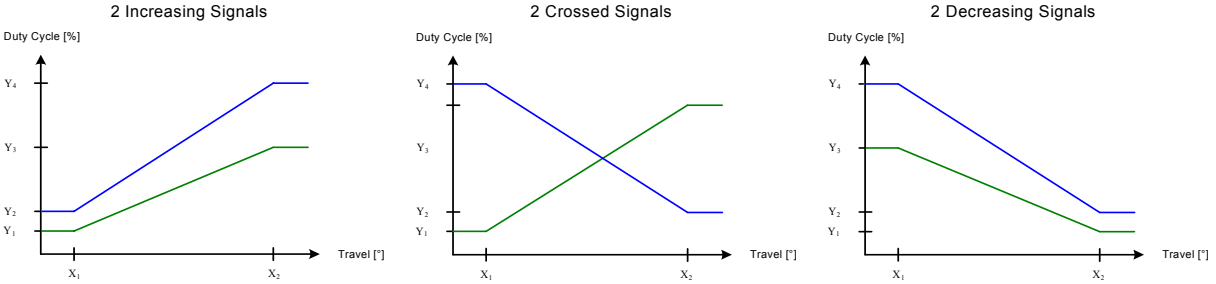
Digital channel(s) :

Current consumption	< 12mA / channel
Supply (Vs)	Between 8 and 36 V DC
Output channel #1	Duty cycle between 5% and 95% (+/- 1%)
Output channel #2	Duty cycle between 5% and 95% (+/- 1%)
Frequency	200Hz to 500Hz +/-15%
Output current	Max 10mA / channel

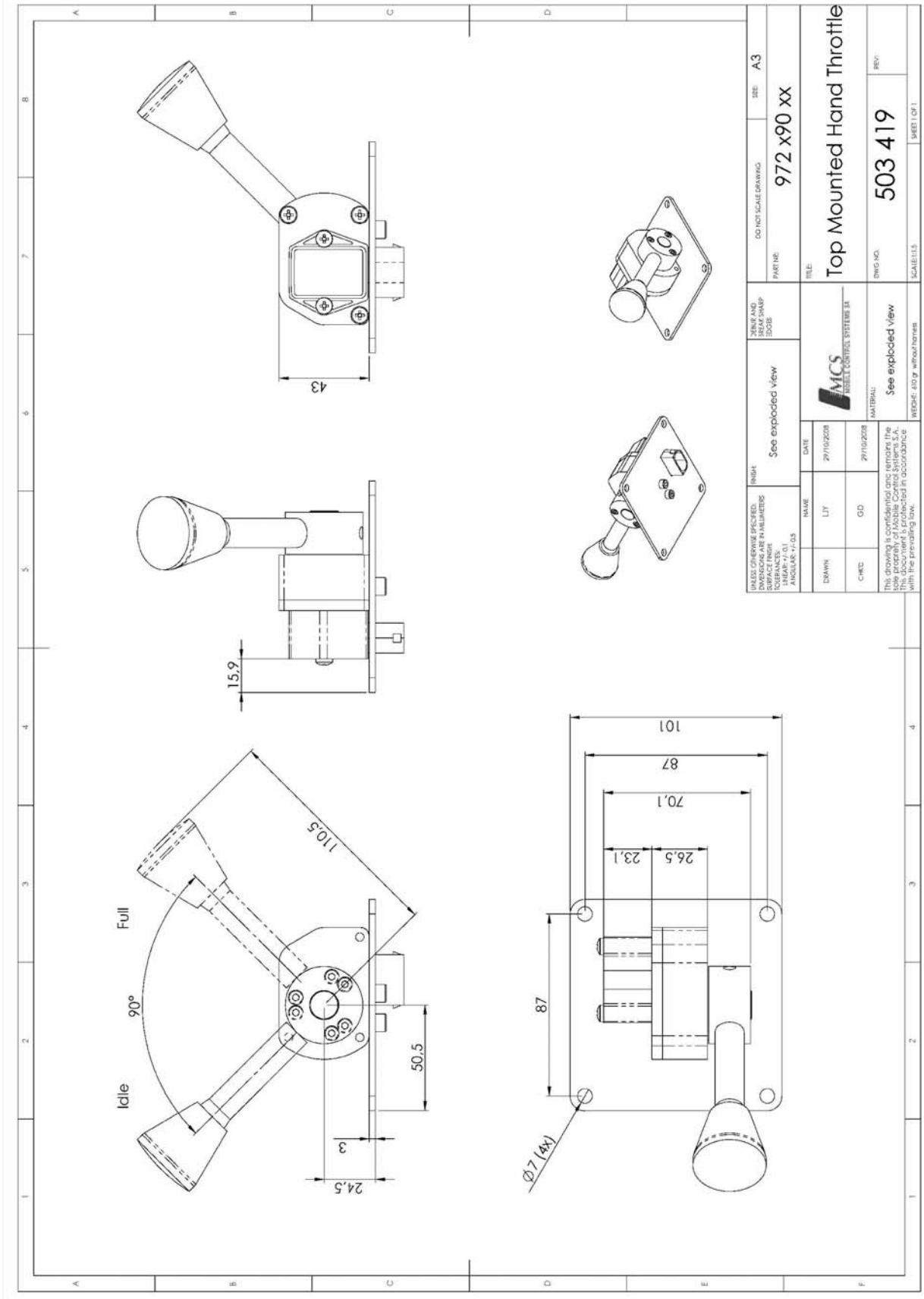
Optional Switch channel with single digital output :

Current consumption	< 12mA
Supply (Vs)	Between 8V and 36V DC
Idle Validation Switch	Configurable (Open collector, Pull-up or Pull-down)
Output current	Max 10mA

Examples:



3. Drawing:



4. Typical Applications:

5. Compatible with the following engines:

- CATERPILLAR
- CUMMINS
- DACHAI
- DEAWOO
- DAF
- DETROIT DIESEL
- DEUTZ
- HINO
- ISUZU
- IVECO
- JCB
- JOHN DEERE
- KUBOTA
- LIEBHERR
- LOVOL
- MAN
- MERCEDES-BENZ
- MTU
- NAVISTAR
- NISSAN
- PERKINS
- RENAULT
- SCANIA
- SHANGHAI DIESEL
- SISU DIESEL
- VOLKSWAGEN
- VOLVO
- WEICHAI
- YANMAR
- YUCHAI

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