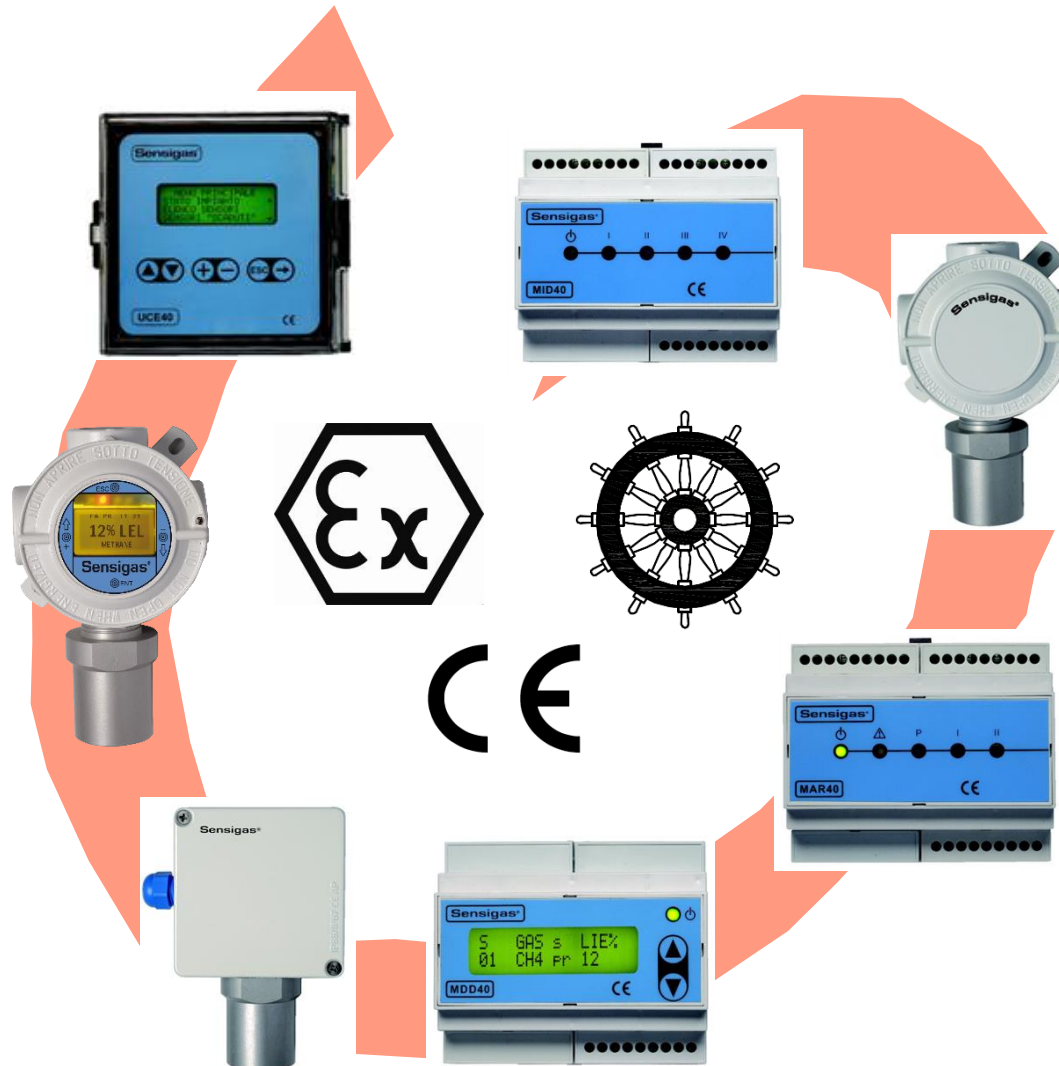


EW40: Gas detection system for Industrial & Marine Applications



EW40 system: applications

Gas detected:

- ✓ Methane gas
- ✓ Carbon Monoxide
- ✓ LPG
- ✓ Gasoline Vapour
- ✓ Propane
- ✓ Acetylene
- ✓ Ammonia
- ✓ Hydrogen
- ✓ Ethylene
- ✓ Octane
- ✓ Ethyl Alcohol
- ✓ Oxygen
- ✓ Carbon Dioxide
- ✓ Other gases on request

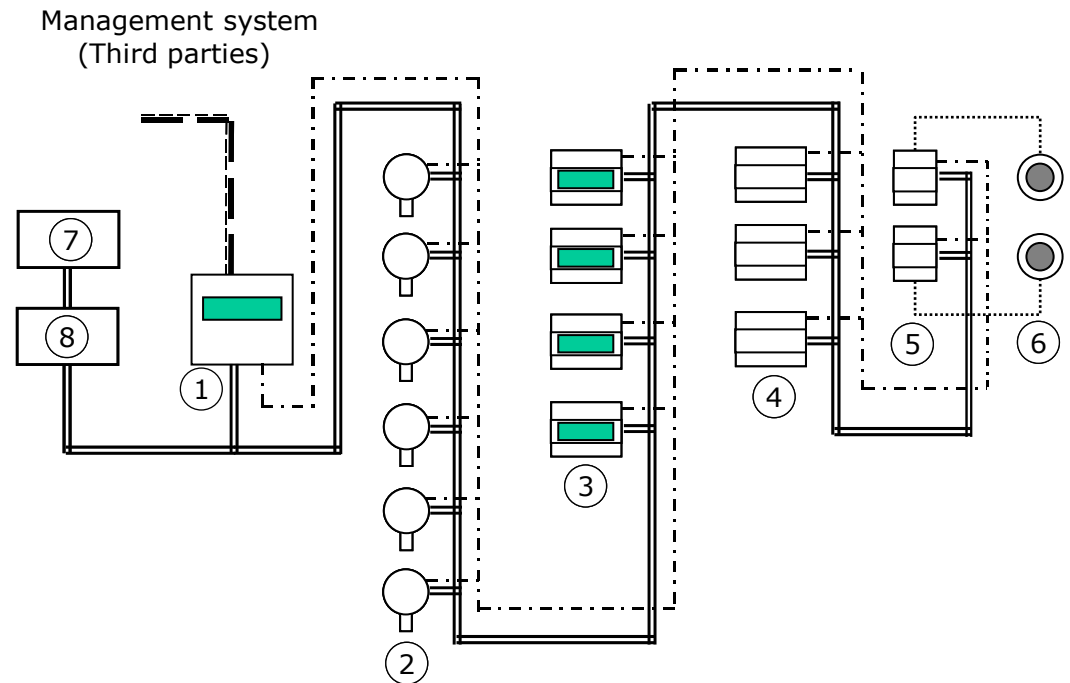
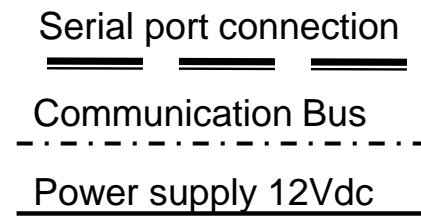
Applications:

- ✓ Boiler rooms
- ✓ Manufacturing plants
- ✓ Laboratories
- ✓ Warehouses
- ✓ Laundries
- ✓ Cooking rooms
- ✓ Car parking
- ✓ Explosion risk area
- ✓ Marine

Digital Inputs Alarms
Centralization (By MID40)

EW40 system: layout

- (1) Central Unit
- (2) Gas sensors
- (3) Display Unit
- (4) Relè Unit
- (5) Input Unit
- (6) Emergency push button
- (7) Battery
- (8) UPS



EW40 system: UCE40MPA - Central Unit

- Technical features

- ✓ Power supply: 10÷14Vdc

Interfaces:

- n.1 display 4x20 backlighting
- n.1 keypad 6 multifunction keys
- n.1 RS232 (printer or supervisor)
- n.1 RS422/485 (supervisor)

- ✓ Field Bus:

- Standard: CAN bus
- Max lenght: 1.000 m
- Topology: daisy chain
- Protocol: Proprietary

- ✓ Protection degree: IP40 (IP54 with front cover installed)

- ✓ Digital outputs: N.4 VFC SPDT 250Vac 8(5)A for cumulative alarms:
(Fault, Pre-alarm, Alarm threshold 1, Alarm threshold 2)

- ✓ Battery Protection Circuit with dedicated VFC SPDT 250Vca 8(5)A relay



EW40 system: Gas Sensors

- ATEX classified areas (Zone 1 & Zone 2)



ATEX + MED Certified: **UR(x)41(z)E**
 (x): gas type
 (z): sensor type

ATEX marking: II 2G Ex d IIC T6 Gb
 In conformity (ATEX): EN90079-0 /-1 /-29-1
 (MED): IEC 60092-504



ATEX + MED Certified: **UR(x)41(z)S**
 (x): gas type
 (z): sensor type

ATEX marking: II 3G Ex nA IIC T6 Gb
 In conformity (ATEX): EN90079-0 /-1 /-15 /-29-1
 (MED): IEC 60092-504

EW40 system: Gas Sensors

- ATEX not classified areas



Industrial applications:

UR(x)41(z)I

(x): gas type
(z): sensor type

Compliant with Standards (ATEX): EN90079-0 /-1 /-29-1
(MED): IEC 60092-504

Protection Degree: IP65



Industrial applications:

UR(x)41(z)L

(x): gas type
(z): sensor type

Compliant with Standards (ATEX): EN90079-0 /-15 /-29-1
(MED): IEC 60092-504

Protection Degree: IP55



Car Parks applications:

UR(x)41(z)P

(x): gas type
(z): sensor type

Compliant with Standards (ATEX): EN90079-0 /-15
(Parking / Tunnels): EN50545-1

Protection Degree: IP55

EW40 system: UR.40.. Gas Sensors

- Technical features

- ✓ Power supply : 10÷28 Vdc
- ✓ Sensor Type:
 - Standard Catalytic
 - Professional Catalytic
 - Standard Electrochemical Cell (CO, O₂ etc.)
 - Non Dispersive InfraRed (CO₂, Hydrocarbons, etc.)
 -
- ✓ Full Scale Range (some examples):

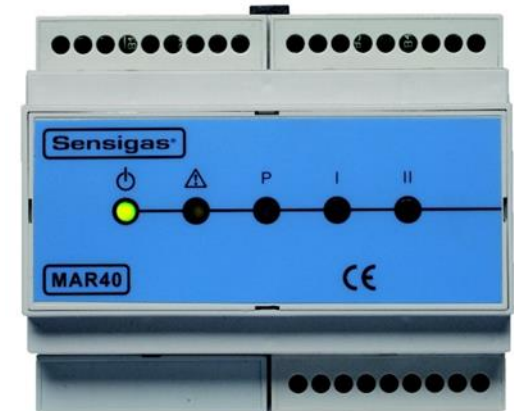
• Flammable Gases:	0÷100% LEL (step 1%)
• Carbon Monoxide	0÷500 ppm CO (step 2 ppm)
• Oxygen	0÷30% O ₂ (step 0,1%)
• Carbon Dioxide	0÷20.000 ppm of CO ₂ (step 100 ppm)
- ✓ Operating status LED indication: not configured sensor
configured sensor
alarm states or fault
- ✓ Sensor lifetime: (255 weeks), (120 weeks for Oxygen)



EW40 system: MAR40 Relay Unit

- Technical features

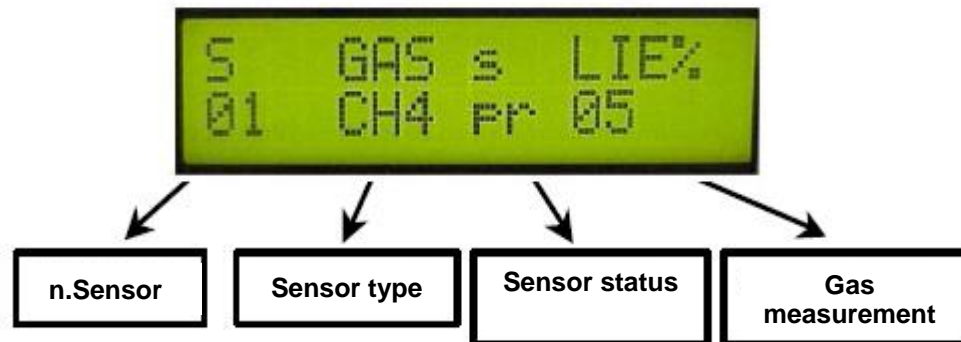
- ✓ Power supply: 10÷14 Vdc
 - ✓ Digital outputs:
 - N.4 VFC SPDT 250Vca 8(5)A
 - Fault
 - Pre-alarm
 - Alarm threshold 1
 - Alarm threshold 2
- configurable as:
- Continuous or pulse output
 - Direct or reverse output
- ✓ Protection degree: IP40, when installed in the switchboard
- ✓ Operating status LED indications :
 - Configuration status
 - Fault
 - Pre-allarm
 - Alarm threshold 1
 - Alarm threshold 2



EW40 system : MDD40 Display Unit

- Technical features

- ✓ Power supply: 10÷14 Vdc
- ✓ Display: 2x16 backlighting (in alarm)
- ✓ Alarm log
 - Gas sensor status
 - Digital Input Module status
- ✓ Protection degree: IP40, when installed in the switchboard



EW40 system : MID40 Digital Input Unit

- Technical features

- ✓ Power supply: 10÷14 Vdc
- ✓ Digital Input Unit: N.4 voltage free contact
 - Continuous / pulse mode
 - Direct/revers operation logic (by C.U.)
 - Configurable input type:
 - Pre-alarm
 - Alarm threshold 1
 - Alarm threshold 2
- ✓ Protection degree: IP40, when installed in the switchboard
- ✓ Operating status LED indications:
 - Configured, unconfigured
 - Input 1 alarm
 - Input 2 alarm
 - Input 3 alarm
 - Input 4 alarm



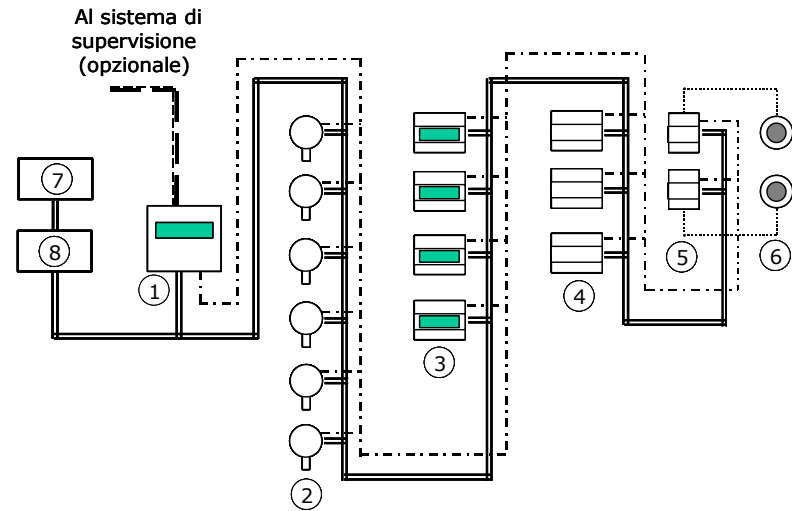
EW40 system : Certifications



ATEX in conformity:	MED in conformity:
EN60079-0 (General requirements)	IEC 60092-504 (Automation in Ship)
EN60079-1 (Ex d Explosion Proof)	IEC 60533 (EMC capabilities in Ship)
EN60079-15 (Ex nA Not Sparking)	EN60079-0 (ATEX General requirements)
EN60079-29-1 (Performance)	EN60079-29-1 (ATEX Performance)
EN50270 (EMC capabilities)	SOLAS Reg. II-2/4 (Fire Protection)
EN50271 (Software capabilities)	SOLAS Reg. VI/3 (Detection Equipments)
EN50402 (Functional Safety)	IMO Res. MSC.98 (73- Fire Safety Systems)
EN61508-1,-2,-3,-4,-5,-6,-7 (Functional Safety)	IMO MSC.1/Circ.1370 (Guideline for G.D.S.)

EW40 system : Functionality

- (1) Central Unit
- (2) Gas sensors
- (3) Display Units
- (4) Relais Units
- (5) Digital Input Units
- (6) Emergency Push-button
- (7) Battery
- (8) UPS



- ✓ Monitoring: Central and local data display
- ✓ Supervision: gas measurement, status, alarms, diagnostic, expired sensors

EW40 system : Functionality

- System commissioning and maintenance
- Alarm management
(car parks alarm modes)
- Data display
- System protection
- Supervision

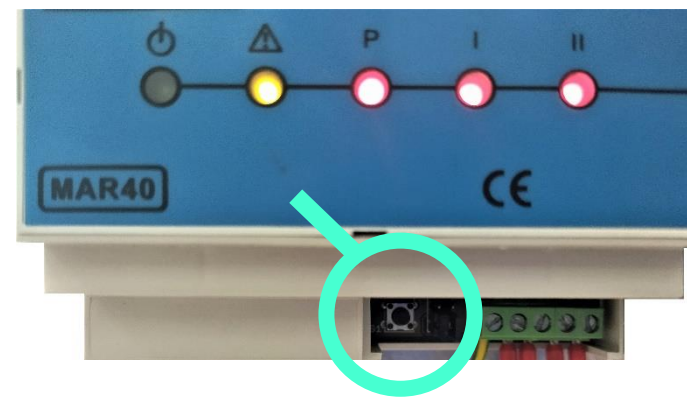
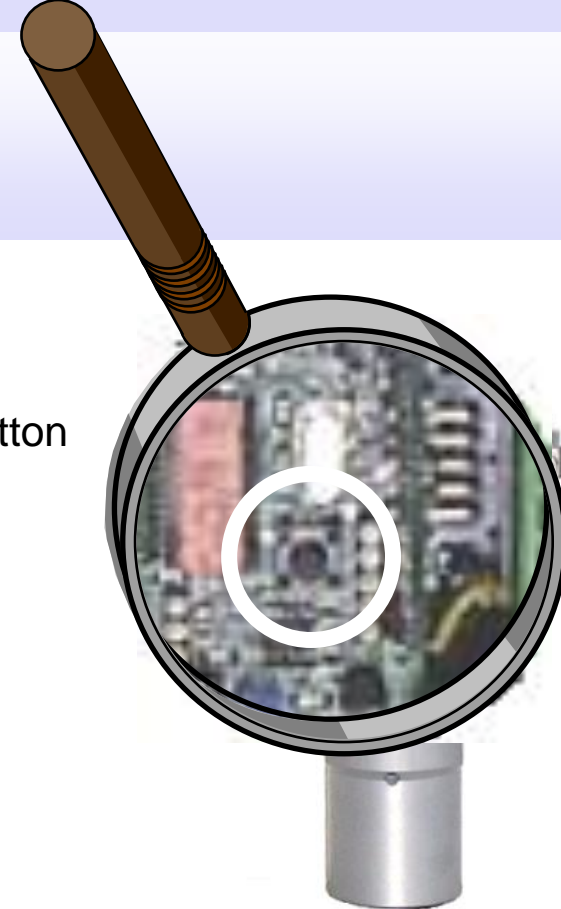
EW40 system : Functions

Commissioning:

- ✓ Automatic configuration by dedicated push button

```
NUOVO IMPIANTO
S 0 1      MR --      MD - -
PREMERE PULS . PERIF .
S 0 1      GAS CH 4
```

```
NUOVO IMPIANTO
S 0 4      MR 0 1      MD - - →
PREMERE PULS . PERIF .
MR 0 1 ↓
```



EW40 system : Functions

System maintenance:

- ✓ New Central Unit:

```
NUOVA CENTRALE  
S - - MR - - MD - -  
AUTOCONFIGURAZIONE  
S - -
```

- ✓ Delete peripheral:

```
CANCELLA PERIFERICA  
→ S02 MR01 MD01  
PREMERE PULS ▲ 5 "  
S02 GAS CH4
```

- ✓ Replace peripheral

```
CAMBIA PERIFERICA  
→ S02 MR - - MD - -  
PREMERE PULS PERIF.  
S02 GAS CH4
```

- ✓ Add peripheral:

```
AGGIUNGI PERIFERICA  
S04 MR01 MD02  
PREMERE PULS. PERIF.  
MD02
```

EW40 system : Functions

System maintenance:

- ✓ TUS40.. Tool kit conceived for:
 - ❖ Local diagnostic
 - ❖ Test with sample gases
 - ❖ Calibration with sample gases



EW40 system : Functions

Alarm management:

- ✓ Gas sensors:
 - Pre-alarm
 - Alarm threshold 1
 - Alarm threshold 2
 - Fault condition

- ✓ Digital Input Unit:
 - N.4 Alarm digital inputs: for generic alarms, each input can be configured for switch or push button

- ✓ Parking alarm mode:
 - If more CO sensors in the same zone are in Alarm threshold 1, an Alarm threshold 2 will be performed (D.M. 01-02-86)
 - CO time integral alarms (EN50545-1)

EW40 system : Functions

Alarm Mangement (plant configuration):

- ✓ Detectors Alarm Thresholds Definition (preset & adjustable):
 - Pre-alarm
 - Alarm threshold 1
 - Alarm threshold 2

- ✓ Alarm category definition for each Digital Input:
 - Pre-alarm
 - Alarm threshold 1
 - Alarm threshold 2
 - Push-Button
 } Settable by dip-switch
for each DI

- ✓ Association: Detectors, Digital Alarms
 - Relais Module (MR)
 - Display Module (MD)

	S 0 2	S 0 3	S 0 4	S 0 5	MA 1	MA 2
MR 0 1	X	X	"	"	X	X
MR 0 2	"	"	X	X	"	"
MD 0 1	X	X	"	"	"	"
MD 0 2	"	"	X	X	X	"

EW40 system : Functions

Data display:

The following data are available on the Central Unit:

✓ Peripheral status:

- Operating status
- Alarm thresholds
- Measure
- Residual lifetime
- Expired gas sensor list

✓ Plant status:

- Peripheral: types and number
- Gas sensor: type and number
- Alarms: type and number

EW40 system : Functions

System protection (passwords by key code)

- ✓ End Users:
 - Operating data (status, measures, alarms, faults, etc.)
 - Alarm register

+

- ✓ Technicians:
 - Passwords
 - Alarm thresholds

+

- ✓ Plant managers:
 - Passwords
 - System configuration (add, delete, replacement, etc.)

EW40 system : Functions

Supervision (third parts management system)

- ✓ Data transmission to a third parts management system

- ✓ Comm's protocol: Modbus ASCII/RTU (RS232/422/485)
 - ❖ Read commands:
 - Central Unit status
 - Sensors & peripherals status
 - Sensors Gas measurements (units included)
 - Sensors Lifetime Counter
 - ❖ Write commands:
 - Alarms reset

EW40: gas detection system for Industrial & Marine Applications



THANKS FOR YOUR ATTENTION