



ContaminationSensor Module Economy 1000 CSM-E

Description

The ContaminationSensor Module CSM Economy 1000 is a compact and cost-effective online Condition Monitoring module for conditioning the flow rate of hydraulic and lubricating fluids and diesel fuels (CSM-E 1xxx-4). It is used together with the fluid sensors (available separately) to measure solid particle contamination, water saturation and oil ageing.

The CSM Economy consists of a motor, pump, air releasing path and inline sensor installation and can also be combined with the fluid sensors of the series CS1000, AS1000 or AS3000 and HLB1400. Furthermore, the optionally available data storage and network communication module CSI C-11 makes it possible to upgrade the CSM-E to form a compact condition monitoring solution for fluids.

Fields of application

- Monitoring lubrication systems in the paper, steel and energy industries
- Monitoring diesel in fuel reservoirs
- Component cleanliness monitoring in test benches
- Monitoring of oil cleanliness in tanks and pressure lines
- When no pressure is present at the measurement point
- As a tool for preventive and proactive maintenance strategies

Advantages

- Modular, cost-effective system for flexible combination with various fluid sensors
 - ContaminationSensor CS1000 for measuring the solid particle contamination
 - AquaSensor AS1000 or AS3000 for measuring the water saturation
 - HydacLab HLB1400 for determining the fluid condition
- Also available for pumps with high inlet pressures

Technical data

Hydraulic specifications	CSM-E 1xxx-1	CSM-E 1xxx-2	CSM-E 1xxx-4
Operating pressure, maximum			
P _{IN} (INLET)	-0.4 to 0.5 bar	-0.4 to 120 bar	-0.4 to 80 bar
P _{OUT} (OUTLET)	5 bar	5 bar	5 bar
Leakage oil (LEAK)	-	0.5 bar	-
Hydraulic connections			
P _{IN} (INLET)	G 1/4 acc. ISO 228-1	G 1/4 acc. ISO 228-1	G 1/4 acc. ISO 228-1
P _{OUT} (OUTLET)	G 1/4 acc. ISO 228-1	G 1/4 acc. ISO 228-1	G 1/4 acc. ISO 228-1
Leakage oil (LEAK)	-	G 1/4 acc. ISO 228-1	-
Permissible viscosity range for operation	10–3000 mm²/s	10–3000 mm²/s	2–1000 mm²/s
Permitted viscosity range for measurement	10–1000 mm²/s	10–1000 mm²/s	2–800 mm²/s
Flow rate (for 1500 rpm)	~ 130 ml/min	~ 180 ml/min	~ 280 ml/min
Permitted fluids	Hydraulic and lubrication fluids based on mineral oil		
	-	-	Diesel fuels
Pump type	Gear pump		
Suction height	Maximum 0.5 m		
Fluid temperature range	0–85 °C		
Electrical data			
Power consumption	180 W @ 50 Hz 210 W @ 60 Hz		
Protection class	IP55		
General data			
Dimensions (without sensors and accessories)	256 x 262 x 189 mm (with inline installation for CS 1000 and AS 1000 / AS 3000)		
	259 x 268 x 189 mm (with inline installation for CS 1000 and HLB 1400)		
Weight when empty	~ 12 kg including sensors		
Ambient temperature range	0–40 °C		
Storage temperature range	-40–80 °C		
Relative humidity	Max. 90%, non-condensing		

Model code

CSM-E - 1 0 0 0 - 1 - Z - W/N/X60/O60 /-

Type
CSM-E = ContaminationSensor
Module – Economy

Series
1 = for CS1000 with flange connection

Inline installation
0 = set up for AS1000 / AS3000
1 = set up for HydacLab HLB 1400

Version
0 = standard

Media
0 = mineral oil

Hydraulic version
1 = gear pump, standard
2 = gear pump, inlet pressure-stability with drain line
4 = gear pump, magnetically coupled,
inlet pressure-stability without drain line

Sensors
Z = none

Power supply
W/N/X60/O60 = 230V, 50 Hz, 3 Ph / 265V, 60 Hz, 3 Ph
400V, 50 Hz, 3 Ph / 460V, 60 Hz, 3 Ph

Supplementary details
- = none

Scope of delivery

- CSM-E, ready for connection (without sensors)
- Installation and Maintenance Instructions
- 4 fastening screws for the CS

Suitable sensors

The following sensors are suitable for use on the CSM-E.

ContaminationSensor CS1000

Model code	Part no.
CS1210-A-x-x-x-1/-000	3314212
CS1210-B-x-x-x-1/-000	3308284
CS1220-A-x-x-x-1/-000	3237730
CS1220-B-x-x-x-1/-000	3313779
CS1310-A-x-x-x-1/-000	3336820
CS1320-A-x-x-x-1/-000	3332066
CS1320-B-x-x-x-1/-000	3381031

AquaSensor AS1000

Model code	Part no.
AS1008-C-000	909109

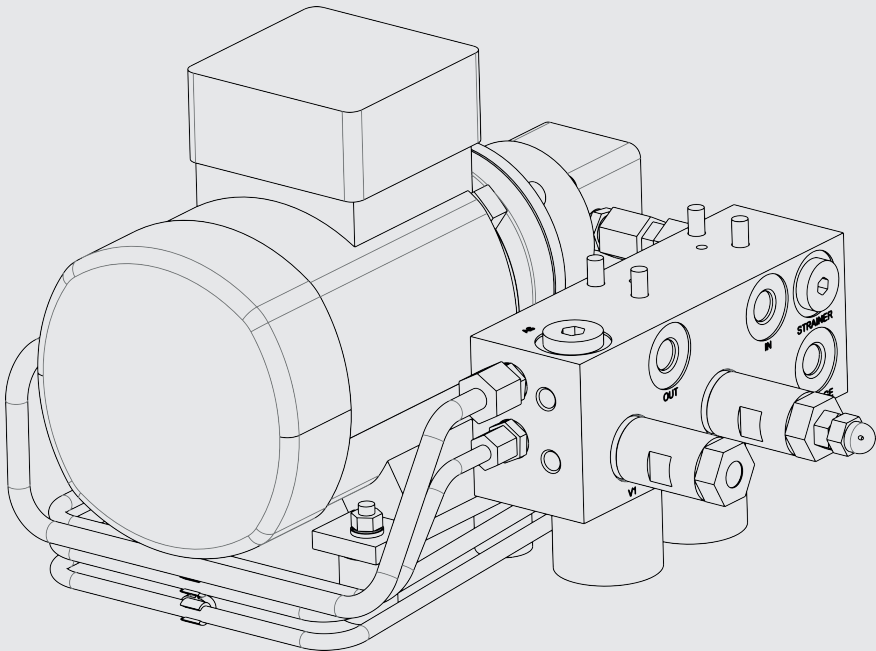
AquaSensor AS3000

Model code	Part no.
AS3008-5-000	922591

HydacLab HLB 1400

Model code	Part no.
HLB14J8-1C000-000	923684
HLB14J8-00S12-000	923685

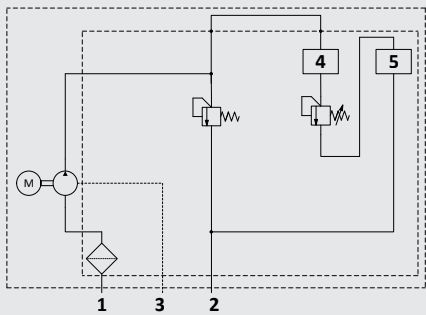
Hydraulic connections



IN = inlet
OUT = outlet
LEAK = drain port (optional depending on the pump)

Sensors not included in scope of delivery;
Figure shows CSM-E without sensors and data communication module CSI-C-11

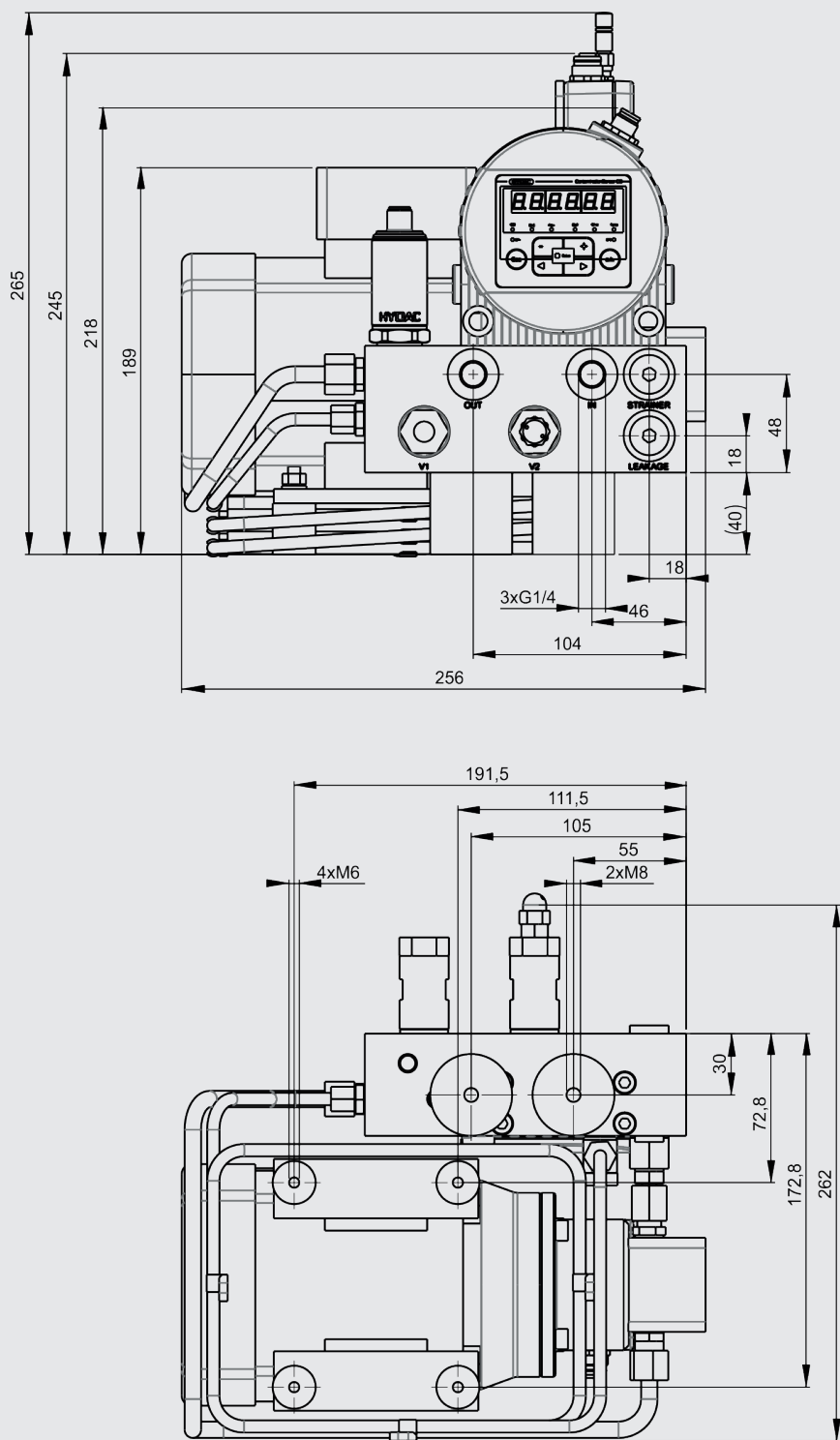
Hydraulic circuit diagram



Item	Designation
1	Inlet (IN)
2	Outlet (OUT)
3	Leakage (LEAK)
4	ContaminationSensor CS
5	AquaSensor AS or HydacLab HLB

Dimensions

CSM-E with CS1000, AS1000 and CSI-C-11



All dimensions in mm
(sensors not included in scope of delivery)

Accessories (sensors)

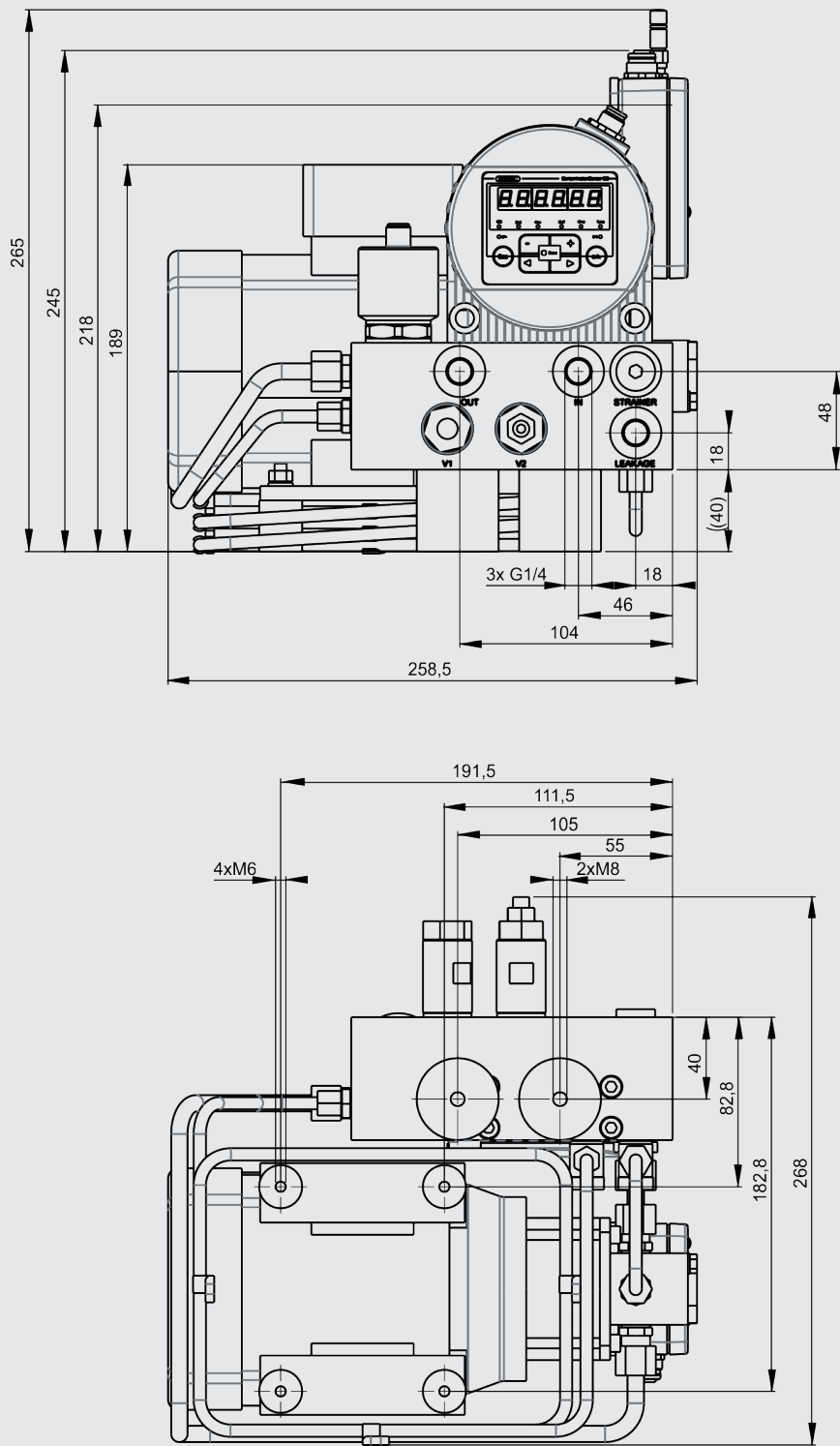
ContaminationSensor CS1000	
Designation	Part no.
CD FluMoS light	3141522
CD FluMoS Professional	3355176
CD FluMoT, driver package	3355177
ZBE42S-02 Mating connector 8-pin with cable, length = 2m	3281220
ZBE42S-05 Mating connector 8-pin with cable, length = 5m	3281239
ZBE43-05 extension cable, connector male/female 8-pin, length = 5m	3281240
ZBE43-10 extension cable, connector male/female 8-pin, length = 10m	3519768
ZBE44 Mating connector 8-pin, shielded, with screw terminals	3281243
ZBE43-005 connecting cable CSI-C-11, connector male/female 8-pin, length = 0.5 m	4193544

AquaSensor AS / HydacLab	
Designation	Part no.
ZBE08S-02 Mating connector, 5-pin, angled, with cable, length = 2m	6019455
ZBE08S-05 Mating connector, 5-pin, angled, with cable, length = 5m	6019456
ZBE08S-10 Mating connector, 5-pin, angled, with cable, length = 10m	6023102
ZBE08 Mating connector, 5-pin, angled, shielded with screw terminals	6006786
ZBE30-005 Connecting cable CSI-C-11 connector male/female 5-pin, length = 0.5 m	4193586

ManometerKit	
Designation	Part no.
ManometerKit 0-60 bar	3942792

Dimensions

CSM-E with CS1000, HLB 1400 and CSI-C-11



All dimensions in mm
(sensors not included in scope of delivery)

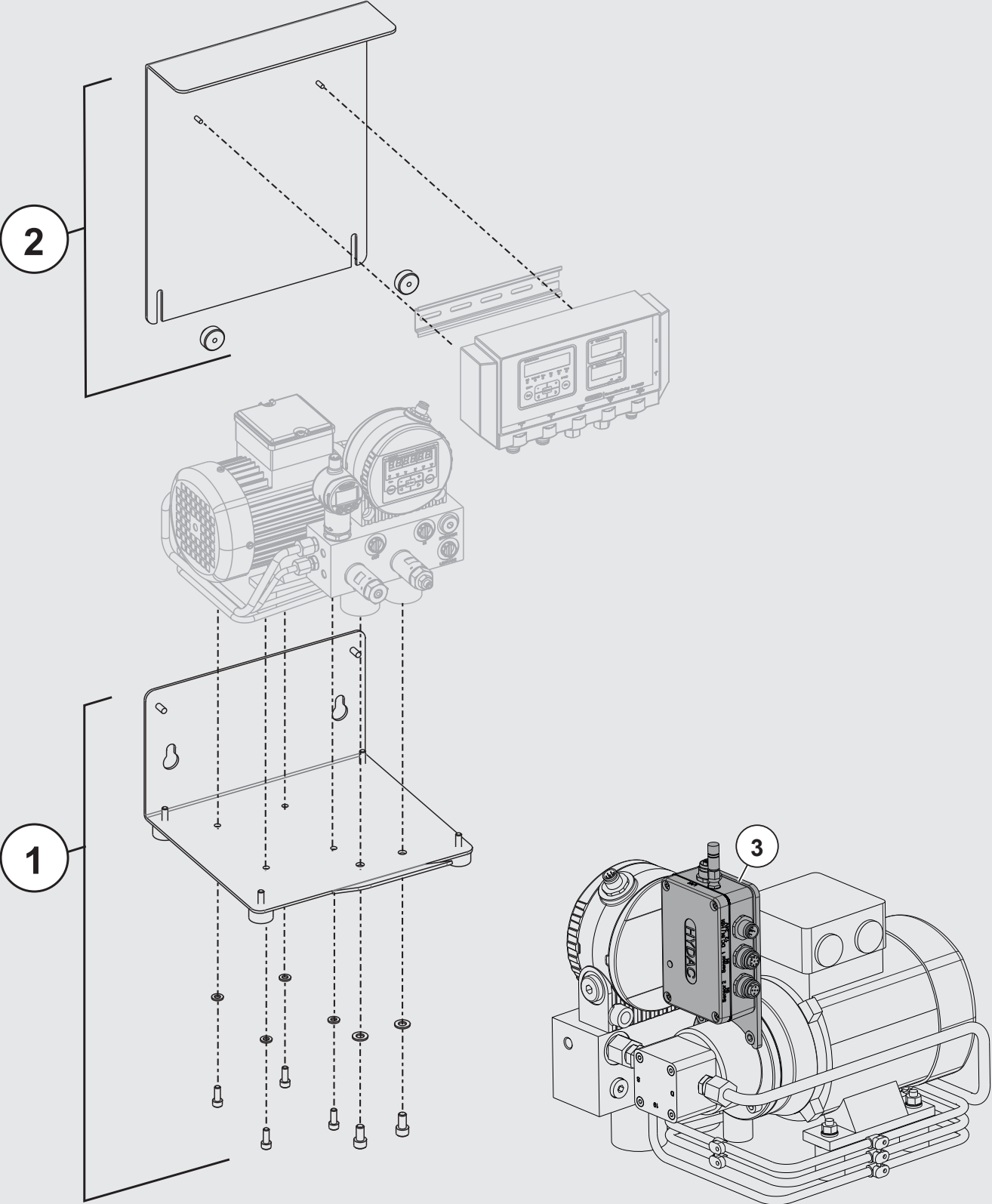
Accessories
Data communication and measurement data storage

ContaminationSensor Interface CSI-C-11	
Designation	Part no.
CSI-C-11-0-0-0-000 Data logger, network interface sensors: 2x HSI Smart	4066011
CSI-C-111-0-0-1-000 Data logger, network interface sensors: 2x HSI Smart, 4x analogue	4247534
PS5 Power supply unit 100–240 V AC, 50–60 Hz, 1.1 A, IP40; Connector M12, 5-pin, female	3399939
ZBE47S-05 Connection cable, mating connector 5-pin with cable, length = 5m	3527626
ZBE47S-10 Connection cable mating connector 5-pin with cable, length = 10m	3527627
ZBE 45-05 Network cable (patch), mating connector, 4-pin, d-encoded / male connector RJ45, length = 5m	3346100
ZBE 45-10 Network cable (patch), mating connector, 4-pin, d-encoded / male connector RJ45, length = 10m	3346101
ZBE CSI 60 Sensor connection adapter 4x analogue female connector 8-pin cable length = 1 m	4420372

SensorMonitoring Unit SMU 1200	
Designation	Part no.
SMU1260-TU-00	3467005
SMU1261-TU-00	3791708
SMU1270-TU-00	3704282
SMU1271-TU-00	3805688

Preferred models	
Designation	Part no.
CSM-E-1100-4-Z-W/N/X60/060	4026586
CSM-E-1000-4-Z-W/N/X60/060	3937534

Accessories



Item	Description	Part no.
1	Assembly kit CSM-E	3942869
2	Assembly kit SMU	3942870
3	CSI-C-11-0-0-0/000	4066011

NOTE

The information in this brochure relates to the operating conditions and applications described.

For applications and operating conditions not described, please contact the relevant technical department.

Subject to technical modifications.