

METERING AND CONTROL EQUIPMENT

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363 078 - 363 077

363 051



OIL CONTROL GUNS

Oil control guns, manufactured in aluminium, with ergonomic grip and trigger to reduce operator hand fatigue. NBR valve with progressive action, for comfortable operation when dispensing products, even with high ratio (10:1) oil pumps. All guns include a ball bearing inlet swivel with large capacity screen filter.

Maximum working pressure: 105 bar (1,500 psi). Maximum delivery: 25 l/min (6.6 US gpm). Fluid inlet thread: 1/2" NPSM (F).

Guns available with a variety of outlets to fit every application.

HIGH DELIVERY OIL CONTROL GUN

363 051 High delivery oil control gun

High delivery oil control gun manufactured in aluminium. A double valve mechanism allows small flow deliveries when the trigger is partially open and full flow delivery when the trigger is fully pressed. Lockable trigger and ball bearing inlet swivel. This oil gun includes a 60° angled rigid outlet with semiautomatic non drip nozzle.

Maximum working pressure: 105 bar (1,500 psi). Maximum delivery: up to 45 l/min (11.7 US gpm). Fluid inlet thread: 3/4" BSP (F).

MODELS

PART No.	APPLICATION	OUTLET TYPE INCLUDED	NON DRIP NOZZLE INCLUDED
363 082		None	None
363 075	Gear oil	110° rigid swiveling (369 217)	Manual
363 077	ATF , lubricants	Straight flexible (369 200)	Manual
363 078	All types of lubricants	Flexible with 90° outlet, swiveling (369 218)	Semi automatic
363 079	Motor oil	60° rigid (369 215)	Semi automatic

See pag 63 for accessories.

FLUID CONTROL GUN, OIL BAR



186 300

361 200



FLUID CONTROL GUN

186 300 Fluid control gun

Control gun with reinforced polyamide body and stainless steel valve mechanism for use with fluids like windshield washer, glycol solution (anti-freeze) and other water based fluids. Includes brass inlet swivel and flexible outlet with 90° angled outlet. Maximum working pressure: 40 bar (570 psi). Maximum flow: 15 l/min (4 US gpm). Inlet thread 1/2" BSP (F).



OIL BAR

361 200 Oil bar

Oil dispensing bar for up to four products. Delivered with one outlet, up to 3 additional outlets can be mounted.

361 110 Additional outlet valve for oil bars.

366 550 In-line meter kit for oil bars

An in-line meter can be mounted as an option.

See pag 63 for accessories.

Product specifications are subject to change without prior notice

413 077



GREASE CONTROL GUNS

High pressure grease control guns with ergonomic body and trigger designed to reduce operator hand fatigue. Manufactured in aluminium with steel high pressure section.

Maximum working pressure: 500 bar (7,150 psi). Inlet thread: 1/4" BSP (F), outlet thread: 1/8" BSP (F).

413 077 Grease control gun

Grease control gun with rigid outlet with 3 jaw connector (PN 121 050).

413 080 Grease control gun with z-swivel

Grease control gun with z-swivel (PN 414 300), rigid outlet and 3 jaw connector (PN 741 300).

413 081 Grease control gun

Grease control gun with 450 mm double steel braid reinforced rubber hose (PN 140 050) with 3 jaw connector (PN 121 050).

413 082 Grease control gun with z-swivel

Grease control gun with z-swivel (PN 414 300) and 450 mm double steel braid reinforced rubber hose (PN 140 050) with 3 jaw connector (PN 121 050).

See pag 63 for accessories.

365 853

365 603



METER WITH MECHANICAL DISPLAY

Oval gear meter with mechanical odometer style register, for use with lubricants up to SAE 140. Resettable partial reading up to 999.9 litres and non-resettable totalizer. Meters are factory calibrated for maximum accuracy and include protective rubber shroud.

The meter is flange coupled to a durable but light weight oil control gun that incorporates a rugged ball bearing inlet swivel with filter.

Maximum working pressure: 70 bar (1,000 psi). Oil flow range: 1 to 27 l.p.m. (0.26 to 7.1 US gpm). Fluid inlet thread: 1/2" BSP (F).

365 853 Hose end meter with mechanical register, litres

Includes outlet 369 218.

365 851 Hose end meter with mechanical register, litres

No outlet.

365 854 Hose end meter with mechanical register, quarts/US gallons

Includes outlet 369 218.

365 852 Hose end meter with mechanical register, quarts/US gallons

No outlet.

See pag 63 for accessories.

METER WITH ELECTRONIC DIGITAL DISPLAY

Oval gear meter with electronic digital LCD display 366 750 coupled to a durable but lightweight oil control gun that incorporates a rugged ball bearing swivel with inlet screen filter. Meter is supplied with a protective rubber shroud.

Meters are factory calibrated. Also they, can easily be re-calibrated in the field for increased accuracy. Meter can measure in litres , quarts, pints and US gallons.

Maximum working pressure: 105 bar (1,500 psi). Oil flow range: 0.5 to 25 l/min. (15 to 6.6 US gpm). Fluid inlet thread: 1/2" BSP (F).

MODELS		
PART No.	APPLICATION	OUTLET TYPE
365 601		None
365 602	Motor oil	60° angled rigid outlet with semi automatic non drip tip.
365 603	All types of lubricants	Flexible outlet with 90° rigid stem, swiveling, with semi automatic non drip tip.
365 604	ATF	Straight flexible outlet with manual non drip tip
365 605	Gear oil	110° angled rigid swiveling outlet with manual non drip tip.

365 652

**HIGH DELIVERY HOSE END METER****365 652 High delivery hose end meter**

Oval gear hose end meter with electronic digital LCD display for metered delivery of lubricants up to SAE 140. The display is powered by two easily replaceable AAA 1.5 V alkaline batteries. The meter is coupled to a high delivery oil control gun that incorporates a rugged ball bearing inlet swivel with an inlet filter and 60° rigid outlet with semi automatic non drip nozzle. All hose end meters are supplied with a protective rubber shroud.

Maximum working pressure: 105 bar (1,500 psi).
Maximum flow range: up to 25 l/min (6.5 US gpm). Fluid inlet thread: 3/4" BSP (F).

365 300

**PRESET HOSE END METER****365 300 Preset digital meter**

Oval gear hose end meter with preset function. Preset mode dispensing allows hands off operation as the meter automatically shuts off the oil once the preset volume is delivered.

Meter with digital display, works with four easy to replace 1.5 AA alkaline batteries. Includes rigid outlet with non drip nozzle and inlet swivel.

365 710

**WEIGHTS AND MEASURES APPROVED HOSE END METER****365 710 Weights and Measures approved hose end meter**

Oval gear hose end meter with digital display approved by German Weights and Measures authority (PTB).

Includes calibration certification, protective shroud, inlet swivel and sight glass. Order outlet accessory separately.

See pag 63 for accessories.

365 675

415 002



HOSE END METER FOR OTHER SERVICE FLUIDS

365 675 Hose end meter for other service fluids

Oval gear hose end meter with electronic digital LCD display for measured delivery of fluids such as windshield washer, glycol solution and other water based fluids. Display is powered by two easily replaceable AAA 1.5 V alkaline batteries. The meter has two separate displays in litres, a resettable 4 digit batch display and a permanent totalizer. Meters are factory calibrated and they can easily be re-calibrated in the field for increased accuracy. Meter can measure in litres, quarts, pints and US gallons.

The meter is coupled to fluid control gun (PN 186 300).

Maximum working pressure: 40 bar (570 psi).
Flow range: 5 to 15 l/min (1.3 to 4 US gpm).
Fluid inlet thread: 1/2" BSP (F).



HOSE END METER FOR GREASE

High pressure oval gear meter with electronic digital LCD display for accurate greasing. The display is powered by two easy to replace AAA 1.5 V alkaline batteries and shows the amount delivered in grams (up to 9,999 gr) and a permanent totalizer in kilograms (up to 999,999 kg). Includes a batch display reset button. Meters are factory calibrated and they can easily be re-calibrated in the field for increased accuracy. The meter is coupled to a high pressure grease control gun with ergonomic body and trigger to reduce operator hand fatigue. Maximum working pressure 500 bar (7,150 psi).

415 002 High pressure grease hose end meter

Includes:

Double steel braid reinforce rubber hose (400 mm) with hydraulic grease connector and Z swivel.

415 000 High pressure grease hose end meter

Includes:

Z-swivel, with no outlet accessories.

411 100

OVAL GEAR IN LINE GREASE METER WITH ELECTRONIC DIGITAL DISPLAY

**411 100 In line grease meter**

High pressure oval gear meter with electronic digital LCD display. Batch display in grams (up to 9,999 gr) and permanent totalizer in kilograms (up to 999,999 kg). Batch display reset button. Meters are factory calibrated and they can easily be re-calibrated in the field for increased accuracy. Works with two 1.5 V AAA alkaline batteries. Maximum pressure: 500 bar (7,140 psi). Maximum flow range: up to 1 kg/min (2.2 lb/min). Accuracy: $\pm 3,0 \%$. Inlet and outlet connections: 1/8" BSP (F). Includes one 1/8" BSP (MM) connector.

366 750 - 836 504

OVAL GEAR IN LINE OIL METER WITH ELECTRONIC DIGITAL DISPLAY

**366 750 In-line oil meter with electronic digital display**

Oval gear meter with electronic digital LCD display for use with lubricants up to SAE 140. The display is powered by two easy to replace AAA 1.5 V alkaline batteries. The meter has a multifunction display, showing in a large four digit display the volume dispensed in each transaction, and two totals, one permanent and another resettable, which might be used for recording the total volume dispensed during one work shift, the volume of oil left in a drum or tank, etc. Meters are factory calibrated and they can easily be re-calibrated in the field for increased accuracy. Meter can measure in litres, quarts, pints and US gallons.

Maximum working pressure: 105 bar (1,500 psi). Oil flow range: 0.5 to 25 l/min (15 to 6.6 US gpm). Fluid inlet and outlet threads: 1/2" BSP (F). Accuracy: $\pm 0,5 \%$

Accessory:

- **836 504:** Protective rubber shroud for meter 366 750.

366 850

OVAL GEAR IN LINE OIL METER WITH MECHANICAL DISPLAY



Oval gear meter with mechanical odometer style register for use with lubricants up to SAE 140. Resettable partial reading up to 999.9 litres and non-resettable totalizer. Meters are factory calibrated for maximum accuracy and include protective rubber shroud.

Maximum working pressure: 70 bar (1,000 psi). Oil flow range: 1 to 27 lpm (0.26 to 7.1 US gpm). Fluid inlet and outlet threads: 1/2" BSP (F). Includes protective rubber shroud. Accuracy: $\pm 1\%$

366 850 Oval gear in-line meter

With mechanical register in litres.

366 851 Oval gear in-line meter

With mechanical register in quarts / US gallons.

366 725 - 366 726

HIGH FLOW IN LINE METERS WITH ELECTRONIC DIGITAL DISPLAY



Oval gear in line meters with electronic digital LCD display. The meter has two separate displays: a resettable 4 digit batch display and a 6 digit permanent totalizer. Meters are factory calibrated and they can easily be re-calibrated in the field for increased accuracy. Meters can measure in litres, quarts, pints or gallons. Meters are compatible with lubricants up to SAE 240, diesel and glycol solutions.

366 725 High flow in-line meter 50 litres/min

Works with two AAA alkaline batteries.

Maximum working pressure: 70 bar (1,000 psi).

Maximum working temperature: 60 °C (140 °F).

Flow range: 5.5 l/min (1.45 US gpm); to 50 l/min (13.2 US gpm).

Accuracy: $\pm 0.5 \%$.

Pressure drop: 0.5 bar (7 psi).

Inlet and outlet threads: 1/2" BSP (F).

366 726 High flow in-line meter 100 litres/min

Works with two AAA alkaline batteries.

Maximum working pressure: 30 bar (430 psi).

Maximum working temperature: 60 °C (140 °F).

Flow range: 9.5 l/min (2.5 US gpm); to 100 l/min (26.4 US gpm).

Accuracy: $\pm 0.5 \%$.

Pressure drop: 0.5 bar (7 psi).

Inlet and outlet threads: 1" BSP (F).

CONTROL GUN AND HOSE END METER ACCESSORIES

GREASE CONTROL GUN SWIVELS

414 100 - 414 300

Equipped with ball bearings for easy articulation even at high pressure. For best results, use a straight swivel between the pump and distribution hose and Z swivel between the hose and grease control gun. Maximum working pressure: 500 bar (7,150 psi).

- 414 100** Straight grease swivel. 1/4" BSP (MF).
- 414 200** "L" grease swivel. 1/4" BSP (MF).
- 414 300** "Z" grease swivel. 1/4" BSP (MF).



GREASE CONTROL GUN OUTLETS

140 050 - 741 300

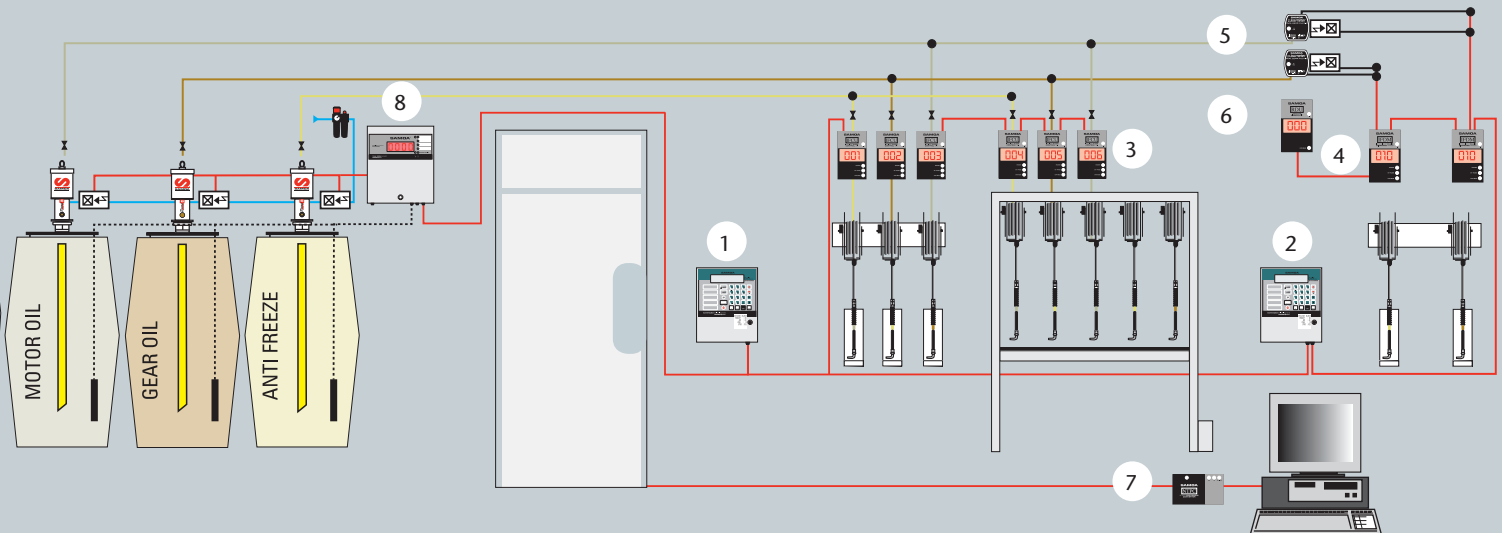
- 741 306** Rigid outlet with 3 jaw hydraulic grease connector (121 001).
- 741 300** Rigid outlet with 3 jaw hydraulic grease connector (121 105).
- 140 050** Double steel braid reinforced grease hose, 450 mm.
- 741 304** Rigid outlet.



OIL GUN AND OIL HOSE END METER ACCESSORIES

PART No.	APPLICATION	OUTLET TYPE INCLUDED	NON DRIP NOZZLE
OUTLETS FOR HOSE END METER 365 601			
369 217	Gear oil	110° rigid swiveling	Manual
369 200	ATF (transmission fluid)	Straight flexible	Manual
369 218	All types of lubricants	Flexible with swiveling 90° stem	Semiautomatic
369 216	All types of lubricants	Flexible with swiveling 90° stem	Manual
369 215	Motor oil	60° rigid	Semiautomatic
OUTLET FOR HIGH DELIVERY HOSE END METER 365 652 AND 365 652.300			
369 219	Lubricants, high delivery	60° rigid	Semiautomatic
NON DRIP NOZZLES			
736 511	Semiautomatic non drip nozzle.		
736 502	Manual non drip nozzle		
736 522	Semiautomatic non drip nozzle. For use with 365 652 high delivery hose end meters.		
369 205	90° angled adaptor. For use with manual operated non drip nozzles.		
SWIVELS			
364 021	3/4" BSP (F) oil inlet swivel. For use with 365 652 high delivery hose end meter.		
736 601	1/2" BSP (F) oil inlet swivel. For use with standard hose end meters.		
836 404	Oil filter. To be placed between a hose and 1/2" swivel.		





- 1 AMS ACCESS KEY PAD WITH APPLICATION SOFTWARE MEMORY MODULE (PN 381 001 + PN 381 600)
- 2 AMS ACCESS KEY PAD (PN 381 001)
- 3 INTELLIGENT FLOW CONTROL UNIT (PN 381 500)
- 4 INTELLIGENT FLUID DISPENSE MANAGER (PN 381 550)
- 5 PULSEMETER AND SOLENOID VALVE (PN 600 281 + PN 389 001)
- 6 REMOTE DISPLAY UNIT (PN 381 700)
- 7 NETWORK PROTOCOL CONVERTER (PN 381 300)
- 8 TANK INVENTORY SYSTEM (PN 382 100)

Fluid Management in today's shops poses several challenges. As the size of the shop increases, properly dispensing and controlling fluids challenges older system and equipment. Additionally, the increased cost of today's lubricants and the popularity of synthetic lubricants place a higher demand for the proper accounting of lubricants usage. Samoa is proud to lead the industry with our proven offering of inventory and fluid dispense management products. From the simplest entry level console to sophisticated computerized management system, we can supply the equipment required for the professional management of both new and used fluids.

The Advanced Monitoring System (AMS), the software at the heart of our state-of-the-art fluid and inventory management system, has been installed in several thousand facilities around the world. Based on our experience in the design of systems for fluid monitoring and the management of workshop activities, we have brought true innovation to an old concept. We have created a system designed to improve profitability through controlled fluid distribution work-order accountability. The system's ease of integration allows you to design any size of installation using a minimum number of components, adaptable from a single-point dispense system to the largest system including more than 100 fluid outlets. This modularity also allows the integration of complementary functions, such as remote displays, stock level detectors, volumetric measuring probes, control access points and the automatic scheduling of any "on/off" function and guarantees the possibility of future evolution should new needs arise.

The network topology utilized by the AMS is the CANBUS network, which was originally developed to manage all the functions of an automobile through one single cable. This technology gives the system a unique simplicity of installation, whilst offering the highest reliability, accuracy and speed of communications. CANBUS networks are used throughout industry, whenever a highly reliable network is required.

The AMS is designed to satisfy the needs of:

- A.- The user, who will be guided during the delivery transaction by a rolling menu and who will also have access to innovative functions like automatic identification by coded key, multi-fluid delivery againsts for one work order and top up option on request
- B.- The supervisor, who will have access to a wide choice of parameters that will allow him to set up the system management criteria to best meet his specific needs. Through easy to use rolling menus, he will be able to modify operator authorizations, to adjust tank levels and to access a wide range of statistics.
- C.- The installer, who will be able to easily install and set up the system.

Directly connected to the mains electricity supply (115 / 230 V) the AMS keypad has an internal 24 VAC power supply that provides the electrical power for 1 to 8 outlets. The number of AMS keypads in a system depends on the layout of the workshop and it is not limited. The AMS keypad can manage up to 110 outlets, each equipped with an Intelligent Flow Control Unit.

The entire system can be controlled through a PC using a PC interface and communications adapter together with special software. It also allows communication with the workshop Data Management System using an additional software module.

The AMS system can also integrate the Advanced Tank Management System. This allows an accurate control of oil inventory and the automatic updating of inventories whenever lubricants are delivered. It also allows a pump to be stopped whenever the oil inside the tank is below a critical level, so eliminating the possibility of air getting into the fluid distribution system.

381 501

381 001



INTELLIGENT FLOW CONTROL UNIT (IFCU)

Controls all parameters related with the distribution of fluids and integrates in one single module component all of the following elements:

- A large capacity filter easily accessed for cleaning.
- A double channel pulse transmitter for accurate and reliable metering.
- A solenoid valve to control the fluid line.
- A microprocessor CPU for the fluid outlet management.
- A large 3 digit very bright display that shows the volume dispensed during the transaction and the outlet number when the outlet is not in use. In most applications, there is no need for a hose end meter.
- Three LED lights that show the IFCU status.

The IFCU connection to the fluid distribution line is done through 1/2" threaded ports. Its connection to the electronic network is done through 2 standard plug in electrical connectors (network IN / network OUT).

381 501 Intelligent Flow Control Unit with CAN controller 100 PPL
Connection threads: 1/2" BSP (F).

381 500 Intelligent Flow Control Unit with CAN controller 100 PPL and installation accessories

Includes electrical connectors and two 90° fittings for connection to the fluid distribution line. Connection threads: 1/2" BSP (F).

381 903 Set of electrical connectors

381 953 IFCU connection cable

500 mm cable with connectors on both ends for connecting IFCUs when installed in a bank.



ACCESS KEYPADS

To be mounted in the workshop to provide technicians with remote access to outlets or reels. Access keypads include a coded key reader for user identification. As an option, a bar code reader can be connected to the access keypad for user identification, job order or job description registration. The access keypad also includes a slot for housing the application software memory module (381 600 - one software memory module is required for each installation). Sturdy metal casing for durability, 25 key alphanumeric keyboard and 2 x 16 digit back lit LCD display.

381 001 AMS Access keypad with ticket printer

Includes a thermal ticket printer that prints a report after each transaction that includes the following information:

- Date and time of the transaction.
- Job order number.
- Product supplied.
- Volume supplied.
- Hose reel / outlet used.
- User I.D. / name
- Vehicle registration number (optional).
- Vehicle odometer reading (optional).
- Inventory of the fluid supplied remaining after the transaction.

Additionally, a warning message is displayed when the fluid inventory reaches the warning level previously assigned by the supervisor.

381 000 AMS Access keypad without ticket printer

381 600 Application software memory module

To be inserted into its slot in the access keypad, includes the system operating software. One memory module must be used with every system.

381 905 Five coded keys set

381 300

NETWORK PROTOCOL CONVERTER AND SOFTWARE (NTPC)

**381 300**

The CAN network uses a different communication system to the one usually available on PCs. The network protocol converter allows reliable communication with a PC through a RS232 serial port connector.

The PC software delivered with the NTPC is user-friendly and it takes full advantage of the flexibility and the wide possibilities of the AMS. This software supports both daily operations and statistical analysis, to help develop sales and increase profit. The software runs on a PC, in a WINDOWS environment help and uses an ACCESS database.

381 550

INTELLIGENT FLUID DISPENSER MANAGER (IFDM)

**381 550**

The IFDM manages the flow control units whenever the system requires a special pulse meter or solenoid valve (type of fluid, flow rate, pressure, etc.). It has the same electronic management functions as the IFCU. It connects to the CAN network through 2 standard electrical connectors (Network IN / Network OUT). The unit also provides the power to operate a solenoid valve to control a fluid line and accepts the input from a pulse meter.

381 700

REMOTE DISPLAY UNIT (RDU)

**381 700**

High visibility 3-digit very bright display, identical to the IFCU display. It displays in real time the delivery details of any transaction in a remote location. It is particularly useful when a hose reel is mounted onto a frame, which can be used from both sides. One RDU can display the delivery of any IFCU present on the network.

381 913 - 381 912 - 381 910 - 381 911 ACCESSORIES

**381 102 Additional power supply box**

Each access keypad has a power supply box that provides energy to the system for opening and closing up to eight solenoid valves. An additional power net box is required when one single keypad needs to control more than eight hose reels.

381 904 External RS-422/RS-232 Converter**381 200 Thermal ticket printer**

Ticket printer for installation inside the access keypad.

381 950 Cable for CAN bus

Communications cable to connect system elements, adequate in most installations.

381 951 Cable for CAN bus

For connection of very distant elements or when the number of elements in a system is very large.

736 353 Wall bracket for 381 000 or 381 001 Keypads**381 913 IFCU bracket for enclosed reels (502 series)****381 912- IFCU bracket for open reels (501 and 504 series)**

736 349 Bracket for mounting up to 6 IFCUs (381 500) on top of a six hose reel stand. Requires brackets 381 911 and 381 910 and cover 736 377

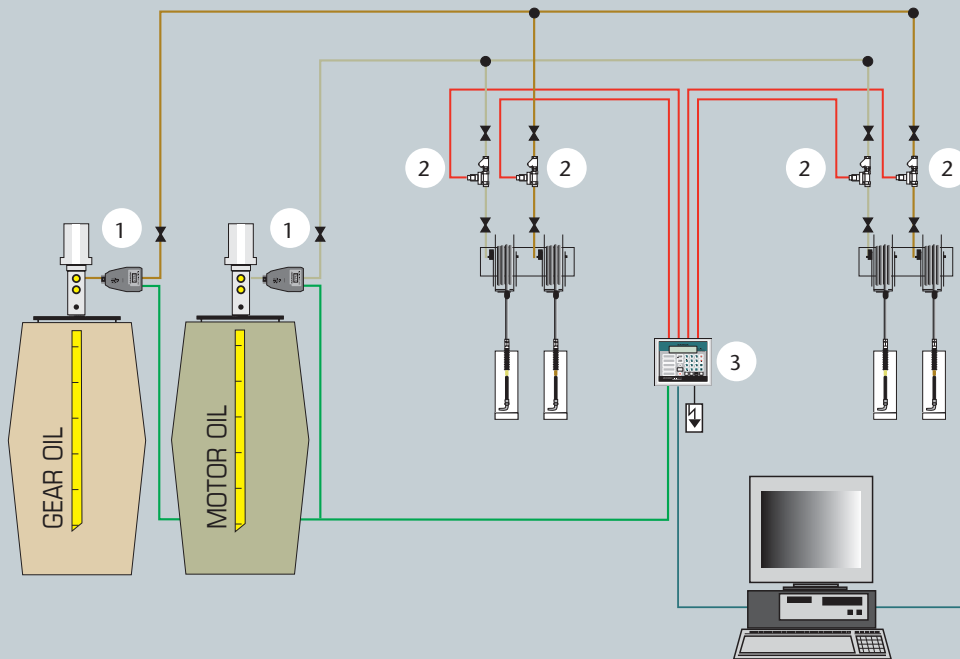
381 911 IFCU bracket. Use together with 736 349.

381 910 IFDM or remote display (RDU) bracket. Use together with 736 349.

736 377 Cover

It covers the open area of bracket 381 911 when no IFCU is installed.





- 1 PULSE METER (MAX. 2)
- 2 SOLENOID VALVE (MAX. 10)
- 3 KEY PAD MODULE

This powerful console is designed for shops that want simple control of their fluids. IMC offers ease of operation, great value and several features not previously available in entry level Fluid Management and Control System.

IMC works with one pulse meter at each pump (maximum two pulse meters) and a solenoid valve at each fluid outlet (maximum 10 solenoid valves in total). The system does not allow simultaneous operation outlets with the same fluid; however different fluids can be dispensed simultaneously.

An upgraded Inventory Management Console, which allows connection to a PC, is available. PC connection makes setting and maintaining the system parameters easier and it is a powerful inventory control tool that allows tank level monitoring to alert the oil vendor or the shop purchase department with an email when the oil inventory level is low.

IMC standard features and capabilities are:

- Controls one or two fluids and up to 10 dispense points. Manages simultaneous dispensing of two different fluids.
- Up to 200 users, system access through pin number or coded key.
- Allows control of one air valve, so air supply is only available during service operating hours.
- Inventory management on a declining balance: allows initial inventory to be entered and deducts for each dispense. Manager needs to enter each delivery and the console alerts when inventory level is low.
- Two operation levels, user and manager levels. At user level it is only possible to order a dispense. At manager level is possible to adjust inventory levels, set inventory warning levels and perform other management functions.
- The system requires 115 to 240 VAC mains power.
- Can work with metric or US units of measure.

381 002

IMC COMPONENTS

381 002 Inventory management console module

Access keypad designed to monitor and control fluid dispenses in a workshop from a single or central location. It can control a total of 10 different outlets with two different fluids. The unit tracks fluid dispenses for every single work order and provides additional information regarding each fluid such as current stock, reorder level and stop level. The IMC can also manage a solenoid valve to control the air powering the pumps, either according to a service planning schedule or from a command entered on the keypad by a manager. Four float type level switches provide the signals to control waste fluid levels in two waste fluid tanks and prevent overflow of used oil by disabling the waste product pump.

**381 003 Inventory management console module with PC connection**

Similar to model 381 002 plus includes a validation chip and PC software that enables the setting and maintaining of system parameters through a PC. Also, the PC can alert the oil vender or shop Purchasing Department with an email when the oil inventory level is low.

600 281



PULSE METER

600 281 In line pulse meter

Line meter with 328 pulses per litre pulse transmitter output. For connection to each pump outlet or to the Advanced Monitoring System when using the Intelligent Fluid Dispense Manager (PN 381 550). Meter does not have display or function buttons. Equipped with connection terminal and reel open indication light. For use with lubricants.

Inlet-Outlet: 1/2" BSP (M) with 60° cone seal.
Minimum flow: 1.5 l/min (0.4 US gpm).
Maximum flow: 15 l/min (4 US gpm).
Maximum working pressure: 50 bar (715 psi).

600 600

**600 600 In line pulse meter for wind shield wash and antifreeze**

Line meter with 328 pulses per litre pulse transmitter output. For connection to each pump outlet or to the Advanced Monitoring System when using the Intelligent Fluid Dispense Manager (PN 381 550). Meter does not have display or function buttons.

Manufactured in stainless steel with Viton seals. Equipped with connection terminal and inlet strainer. For use with windscreen wash fluids, detergents and antifreeze mixed with water.
Inlet-Outlet: 1/2" BSP (M) with 60° cone seal.
Minimum flow: 1.5 l/min (0.4 US gpm).
Maximum flow: 30 l/min (8 US gpm).
Maximum working pressure: 150 bar (2,150 psi).

389 001



SOLENOID VALVE

389 001 Solenoid valve

24 V DC solenoid valve for oil, glycol and wind screen washing fluids.

Inlet - Outlet: 1/2" BSP (F). Maximum working pressure: 50 Bar (715 psi).

TANK ALERT AND TANK MANAGEMENT SYSTEMS

TANK ALERT SYSTEM

382 001- 382 010

Protects the pump from running dry and the waste oil tanks from overflowing. The module can accept up to four tank level sensors, e.g. three low level sensors in fresh oil tanks and one high level sensor in a waste oil storage tank. The unit includes four indicator LEDs and an acoustic alarm signal that give a warning when each of the tanks reaches a critical level. 230 V – 50 Hz AC.

When the Tank Alert System is connected to an Advanced Monitoring System, AMS, it provides signals to warn of a high level in the waste oil tank (to prevent overflow) and to warn of low levels in the new oil tank, making possible to automatically close a solenoid valve in the pump air supply (to prevent air entering the fluid lines and to stop the pumps running dry).

382 001 Tank Alert module

382 050 Tank Alert module for AMS

Connected to the AMS system, when the Tank Alert system is connected to AMS, provides signals to warn of a high level in the waste oil tank (to prevent overflow) and to warn of low levels in the new oil tank (to prevent air entering the fluid lines and to stop the pumps running dry).

382 010 High level sensor

For use with models 382 050 and 382 001. Fits into 2" bung openings.

382 012 Low level sensor

For use with models 382 050 and 382 001. Fits into 2" bung openings.

382 005 Flashing alarm light

For use with models 382 050 and 382 001.

389 001, 24 V solenoid valve



TANK MANAGEMENT SYSTEM

382 100 - 382 120

Control module for monitoring the volume in up to four tanks using barometric level sensors. The level sensors provide accurate measurement of the volume in each tank and it is possible to set critical control threshold levels that define when the Tank Management System should stop the air supply to each pump (using a solenoid valve PN 389 001). The system can work as a stand-alone unit or as part of an Advanced Monitoring System AMS and it is.

When used as a stand-alone unit, the system is set up using an access keypad (PN 382 110). This keypad is used to set up tank parameters and the threshold levels and the actions required from the system, such as closing a solenoid valve that controls the air supply to a pump. Optionally, the system can be controlled and set up through a PC using a software pack that includes a validation chip that must be installed inside the access keypad.

When used with an AMS system, the Tank Management System is connected directly to any keypad in the system (AMM version 3.1.3 or higher) and it transmits accurate real time information about the inventory in the oil tanks, increasing system security, and reliability of the oil inventories. This way manual inventory adjustments are no longer required, for example when new oil is supplied into a tank. When the AMS is running connected to a PC, using AMS-WIN PC version 2.1 or higher, the tank inventory system is controlled and set up through the AMS software.

382 100 Tank Management System module

382 110 Tank Management System access keypad

Required to set-up the system when working as a stand-alone unit.

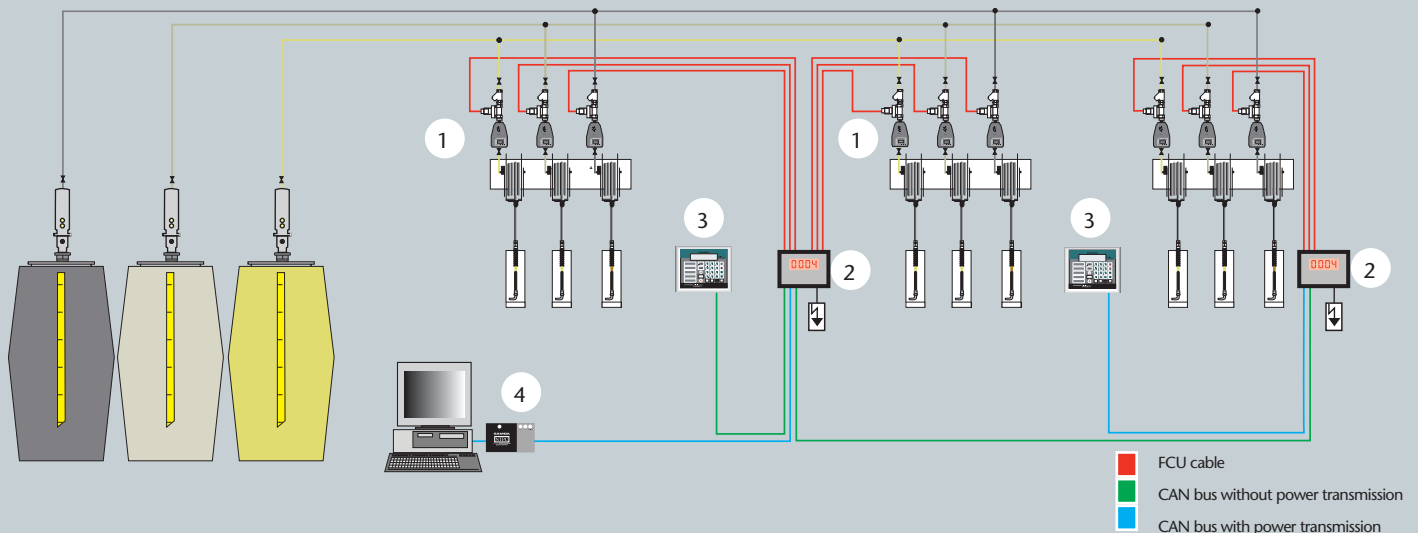
382 115 PC software kit for Tank Management System

Includes software and validation chip.

382 120 Level sensor for Tank Management System

Tank maximum depth 400 cm.





- 1 FLOW CONTROL UNIT (MAX. 6 PER INPUT/ OUTPUT BOX).
- 2 INPUT/OUTPUT BOX WITH REMOTE DISPLAY.
- 3 ACCESS KEYPAD.
- 4 NETWORK PROTOCOL CONVERTER NTPC.

Modular fluid monitoring and security system for small to medium size applications. It can be used to cover applications from a single access point keypad control system through to a multi-dispense point, multi-access, PC linked system.

SYSTEM COMPONENTS

381 060 Acces keypad

Alphanumerical keypad to be mounted in the workshop allowing technician remote access to outlets / reels using numerical ID authorisation. It also allows.

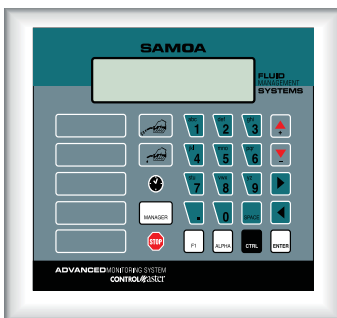
381 150 Input / output control unit

Provides control to up to 6 outlets and communication between different keypads. Several Input / Output Control Units can be used in a system whenever there are more than six outlets in the system. Includes power supply unit. Voltage input: 110 - 240 V.

381 300 Network protocol converter and software (NTPC)

The network protocol converter allows reliable communication with a PC, through a RS232 serial port connector.

The PC software delivered with the NTPC is user-friendly and it takes full advantage of the flexibility and the wide possibilities of the fluid monitoring System. This software supports both daily operations and statistical analysis, to help develop sales and increase profit. The software runs on a PC, in a WINDOWS environment and uses an ACCESS database.



PULSE METERS

***600 281 In line pulse meter**

***600 600 In line pulse meter for wind shield wash and antifreeze**

SOLENOID VALVE

***389 001 Solenoid valve**

FLUID CONTROL UNITS

Line meter with 328 pulses per litre and solenoid valve assembly. The line meter monitors the fluid flow and sends electronic pulses to the Input/Output unit. The solenoid valve opens and closes the hose reel selected. Meter and valve are constructed and tested to guarantee accurate and safe function.

380 550 Fluid control unit for oil and antifreeze

Includes line meter 600 281 and solenoid valve 389 001. Unit also includes Y strainer at the fluid inlet. Connection threads: 1/2" BSP (MM) with 60° cone seal.

380 551 Fluid control unit for windscreen washer and detergents

Includes line meter 600 600 and solenoid valve 389 001. Unit also includes Y strainer at the fluid inlet. Connection threads: 1/2" BSP (MM) with 60° cone seal.

**See pag. 68, for more information.*