ACCESSORIES

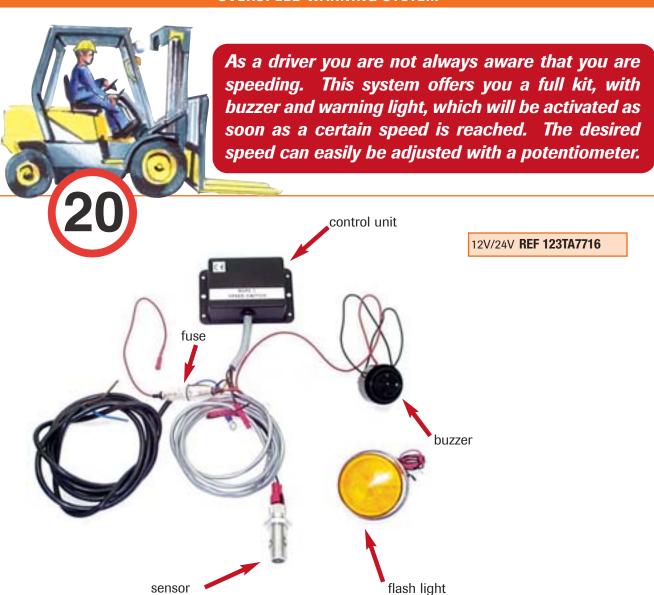
ELECTRONIC







#### **OVERSPEED WARNING SYSTEM**



This kit can be installed on virtually every forklift. Tapping the holes for mounting the sensor becomes easy with the drilling kit.

DRILLING KIT:
REF 105TA4906

Call now for your free installation manual!

SYSTEM

CAMERA

#### **ELECTRICAL EQUIPMENT & ACCESSORIES**





#### **MONOCHROME CAMERA SYSTEM**



Our **lowest cost system** - but with no compromise on reliability! Conventional 5.5" black and white CRT monitor includes the functionality that you would expect only on more expensive systems, including 2 camera inputs as standard, a day/night dim switch, manual/auto power switch, brightness and contrast controls, and a neat and easily fitted sunshield. The compact monochrome camera includes no less than 18 LED's for ultra-low light performance, which are activated in low light conditions so that you can see even in nearly pitch-black conditions!









#### **COMPLETE SYSTEM**

#### **REF 123TA7717**

- 5.5" CRT monitor
- · ultra-low light camera
- 20m cable with waterproof connector

#### **MONITOR**

#### **REF 123TA7718**

- 5.5" monochrome CRT screen
- night-time dim switch
- 12-24 VDC universal voltage
- sun shield
- 100G mechanical shock
- contrast & brightness controls
- 5G mechanical vibration
- -10°C to + 50°C operating temperature
- · mirror/normal image switchers
- two camera inputs
- CE and E certified (EMC)
- dimensions: 154 (W) x 143 (H) x 190 (D)

#### CAMERA

#### **REF 123TA7719**

- 18 infra-red LED's
- · automatic electronic iris
- ultra-low light performance
- fully waterproof (IP68)
- 100G mechanical shock
- · cable connector fully waterproof (IP67)
- 10G mechanical vibration
- -20°C to + 70°C operating temperature
- sun shield
- CE and E certified (EMC)
- 12VDC (from monitor)
- dimensions: 70 (W) x 44 (H) x 54 (D)

#### CABLE

#### **REF 123TA7721**

- 20m
- with waterproof connector

#### **ACCESSORIES**

cable rewinder

REF 123TA7720







WARRANTY



#### **TFT LCD COLOUR CAMERA SYSTEM**

Unbeatable colour flat screen system! Look no further if you want an easy-to-use, 1 or 2 camera system that delivers a clear and sharp colour picture. The neat and attractive 5" TFT LCD colour monitor is the ideal size for vehicle applications, even when cab space is limited, and it comes complete with a universal mounting bracket for quick and easy installation. The compact colour camera includes no less than 18 infra-red LED's, which are activated in low light conditions to ensure that you can see even in nearly pitch-black conditions!



#### **COMPLETE SYSTEM**

#### REF 123TA7722

- 5.5" TFT LCD colour monitor
- · colour ultra-low light camera
- · control module, 2 camera inputs
- · 20m cable with waterproof connector



#### **REF 123TA7723**

- 5.5" TFT LCD colour screen
- · colour & tint controls
- 100G mechanical shock
- mirror/normal image switchers
- contrast & brightness controls
- 5G mechanical vibration
- -10°C to + 60°C operating temperature
- 12VDC (direct or from control module)
- · integrated speaker with volume control
- CE and E certified (EMC)
- dimensions: 163 (W) x 125 (H) x 30 (D)



18 infra-red LED's

**CAMERA** 

- · automatic electronic iris
- ultra-low light performance
- fully waterproof (IP67)
- 100G mechanical shock
- 10G mechanical vibration
- -20°C to + 70°C operating temperature
- · sun shield
- CE and E certified (EMC)
- 12VDC (from monitor)
- dimensions: 70 (W) x 44 (H) x 54 (D)

#### **CONTROL MODULE**

#### **REF 123TA7725**

- · two camera inputs
- CE and E certified (EMC)
- VCR output
- dimensions: 118 (W) x 36 (H) x 79 (D)

#### CABLE

#### **REF 123TA7721**

- with waterproof connector

#### **ACCESSORIES**

**REF 123TA7720** cable rewinder











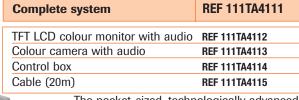




#### **HEAVY-DUTY TFT LCD COLOUR CAMERA SYSTEM**

3 YEAR WARRANT

#### **COMPLETE SYSTEM**





The pocket-sized, technologically advanced colour CCTV system which gives you eyes in the back of your head.

Easy installation!

#### **COLOUR MONITOR WITH AUDIO**

TFT LCD colour monitor with audio REF 111TA4112



#### **SPECIFICATIONS:**

Power input: 12VDC (from control box)

Power consumption: max 12 watt

compatible NTSC, PAL Video system:

Top: 10° Bottom: 30° Viewing angles:

Left: 45° Right: 45°

 Screen size (diagonal): 142.2mm (5.6")

Resolution: 224,640 pixels

· Auto dimmer: Auto/Manual selectable

· Autocontrast/brightness: Day and night sensor

Operating temperature: -10°C to +50°C

Vibration: 4G

Dimensions (WxHxD): 172 x 115 x 28 mm

Weight: 380g

#### **FEATURES:**

#### · Brightness sensor

(Automatic brightness control) - Monitor brightness will be adjusted automatically according to light conditions. All controls on the monitor are "nightglow" for use in the dark.

#### **Camera selector button**

Up to three cameras can be connected to the monitor using the Control Box. On-screen display indicates which camera is operating and is used for all operational settings.

#### Menu buttons

On selection, a list of operating functions, controls and options will appear on-screen ("auto switch-off" after five seconds).

#### **Electronic distance markers**

The distance markers can be set to appear automatically onscreen when reverse gear is engaged. Can be adjusted to suit your own vehicle.

#### CAI (mirror) control

The monitor display can be set either to mirror image or to normal image for each camera.

#### **Auto time control**

If two or three cameras are used, the system can be set to switch automatically between your choice of cameras and time settings.

#### Colour, brightness, contrast and tint control

The image can be adjusted by using the menu button and on-screen display.





#### **HEAVY-DUTY TFT LCD COLOUR CAMERA SYSTEM**

3 YEAR WARRANT

#### **COLOUR CAMERA**

colour camera with audio

**REF 111TA4113** 



- · Six infra-red LEDs give ultra low-light performance
- · Compact and heavy-duty
- CCD (charge coupled device) image sensor gives a high resolution picture
- Wide field of view
- · Waterproof, can be steam-cleaned and pressure-hosed

#### **SPECIFICATIONS:**

· Pickup device Interline 1/3" CCD transfer type:

Total picture elements: 291,000 Pal

· Viewing angles: 105°(H) x 80°(V) x 130°(D) • Minimum illumination: 0.5 Lux up to 3.65m • Power requirements: 12 VDC (from control box)

• Operating temperature: -20°C to +70°C 10G

· Vibration:

· Dimension (WxHxD): 94 mm x 44mm x 64 mm

· Weight: 330g

#### **CONTROL BOX**



Control box

**REF 111TA4114** 

#### **SPECIFICATIONS:**

Power input DC:10-32VDC

Power consumption: max. 18 watt Operating temperature: -10°C to +50°C

Vibration: 4G

Dimensions (WxHxD): 185 mm x 117 mm x 28 mm

· Weight: Approx. 790g

#### CABLE WITH WATERPROOF CONNECTORS



Cable (20m)

#### **REF 111TA4115**

#### **CABLE REWINDER**



Cable rewinder

**REF 112TA4906** 





#### **ELECTRONIC CODE SWITCH (ECS)**

12-90 VDC

1 master code/15 user codes

Last driver view

Automatic turn-off





The electronic code switch can be used on different applications. Any vehicle within the voltage range 12-90VDC can benefit from fitting the unit.

With the master code you can program all pincodes. Up to 15 different codes can be entered.

If an accident occurs and the vehicle is damaged, you can easily track the last driver by counting the number of red and green flashes.

When connected through the seatswitch, the system will deactivate the vehicle after a pre-set period of time; This drop-out time is easily adjustable.

#### **TECHNICAL SPECIFICATIONS:**

**VOLTAGE INPUT: 12-90VDC** 

Correct voltage level must be set with the DIP-switches on the rear of the ECS.

**OUTPUT:** Relay contact rating: 6Amp continuous -

10Amp (5 sec). For bigger loads, an exter-

nal relay must be used.

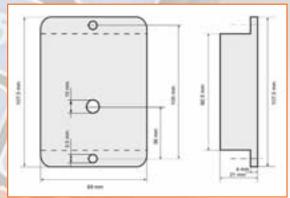
**CURRENT USE:** 10mA when relay is not activated.

Less than 60mA in activated operation.

CASE: ABS plastic

Front side: IP65 - Rear: not sealed.

#### **DIMENSIONS:**



**CALL NOW FOR YOUR FREE INSTALLATION MANUAL** 





#### **DATA-LOGGING KEYPAD**

#### **APPLICATION:**

The Guardian will operate on both electric and gaspowered equipment with battery or control voltages ranging from 12 to 84 Volts DC. Its easy-to-use approach means there is no need for extensive operator training. Simply give the operator his four-digit password and send him to work. The unit activates as soon as it receives a valid password and deactivates after either the CLR key is pressed or by turning off the key switch and waiting for the programmed time-out period.

This new product will finally give equipment managers the tools they need to track their equipment use with a resettable usage timer for simplifying periodic maintenance schedules.

#### **FEATURES:**

- The setup is nearly as simple for the administrator as the operation is for the user. Once the eightdigit supervisor code is entered, the unit is not only capable of being moved, but can also be set up easier than most VCRs. There are 20 functions that can not only add and delete users, set date and time, manage the periodic maintenance timer, but more importantly, using its built-in four-digit display will tell you who used the vehicle and when.
- Using a PC, you can download the trail of users to a file that can easily be imported by today's powerful spreadsheet and database programs to give detailed reports on vehicle usage, operator statistics and more. You say you have several units to manage? NO PROBLEM! Each GUARDIAN can be set to a unique unit ID number. This ID-number is used when the usage trail is downloaded so the operation of several units can be merged together to give the "BIG PICTURE".
- You can also upload a list of users to the GUARDIAN so there is no need to spend a long time pushing buttons. One hundred users can be uploaded in less than 3 seconds. A list of users can also be downloaded from the GUARDIAN.
- The "3 strikes and you're out"-feature, will lock out all users after 3 sequential unsuccessful pin entries. The unit can be re-enabled by a programmable time-out feature, or by entering the supervisor code.



REF 112TA4908 REF 112TA4909 12 V 24-84 V

#### **SPECIFICATIONS:**

Package: Splash ProofUnit Size (LxBxH): 116 x 69 x 39 mm

• Unit Weight: 225 gr

• Operating Temperature : -15°C to +50°C

• Number of Users: 100 plus the supervisor

Password Length: 4 digits for users, 8 for supervisor

Displayable Info : User ID, Start time, Start date,

Stop time, Stop date

Max. trail Records:
 175 start/stop operations

• PM Timer Settings : Set in increments of 1 hour

• Elapsed PM Time : Displayed in increments of 1 hour

PC Interface : Standard Serial (RS232) Port

PC Files Created : Standard CSV (common separated

value), file with unit number, user number, start time, start date, stop time,

stop date, and standard text file with one

4-digit user password per line.

#### **ACCESSORIES:**

Cable RS232 REF 112TA4910
 Software REF 112TA4911

**CALL NOW FOR YOUR FREE INSTALLATION MANUAL** 





#### **BACKSCAN® REAR DETECTION SYSTEM**

## BACKSCAN REAR DETECTION SYSTEM



#### **REF 111TA4117**

**Backscan**® is an invaluable driver aid to safety but it does not remove the drivers responsibility to ensure normal safety procedures when reversing.

#### **FEATURES:**

- reverse with enhanced safety and convenience
- · faster, easier and safer manoeuvring
- · prevents accidental damage
- · sleek design, compact size, latest technology
- super-wide detection angle
- · easy and quick fitting

#### **GENERAL:**

**Backscan**® is an ultrasonic rear obstacle detection system, which utilises the ultrasonic echo principle - transit time method - to help drivers reverse more safely. It is equipped with two pairs of sensors which emit a steady intermittent ultrasonic signal. The sensors both operate as transmitters and receivers, emitting and receiving reflected ultrasonic signals from possible obstacles. The distance from the obstacle is evaluated through the transit time of the evaluated signals and is indicated by a sequence of pulse tones from the warning buzzer. The closer the obstacle, the faster the warning pulse tones until these become constant at 0.45m.

#### **REAR DETECTION SYSTEM**

4x bolt-on (to horizontal surface) KX sensors, fully waterproof control box and external cable connectors, 15m extension cable, Audio/visual display with digital readout, LED lights and buzzer.

#### **WARNING DISTANCES:**

#### Centre sensors

Audio alarming: 0,0 - 1,45 - 1,0 - 2,5 m LED + digital display: 0,0 - 2,5 m

#### **Outer sensors**

Audio alarming: 0,0 - 0,45 m - 0,6 m LED + digital display: 0,0 - 0,45 m













#### **OBJECT DETECTION SYSTEM**

The preview radar detection system is a rugged and reliable system for detecting people and objects. Preventing costly accidents and saving lives.

REF	Coverage (up to)		
123TA7726	3 m		
123TA7727 *	5 m		
123TA7728	6 m		

<sup>\*</sup> standard type

#### COMPACT, RUGGED DESIGN

Resistant to environmental conditions such as moisture, dust, vibration, heat, cold, sun glare and others. The system has been tested to comply with the SAE 1455 environmental specification and the system is CE and E certified.

#### SIMPLICITY

The system contains only three components: sensor unit, in-cab audio visual display unit, and a cable. Covering areas up to 6m.

#### FLEXIBILITY

It can work as a stand-alone system or it can be integrated with a safe-T-alert back-up alarm

#### SAFFTY

The system can help save lives. It can also prevent damage to vehicles caused by backing up into stationary objects. The system is designed to detect the closest obstacle (whether stationary or moving, human or inanimate) in the area of coverage.

SPECIFICATIONS	
Radar frequency	5.8GHz
Rated voltage (12&24 Volt System)	9.8-33Vdc
Power consumption	200 mA (4W @ 12Vdc)
Operating temperature	-40°C to +85°C
Error indicator	Yes
Beam vertical angle	20°
Beam horizontal angle	55°
Detection angle	Approx up 15° down 15°
Visual warning	5 x LED's
Audio warnings	3 Rates
Sensor unit dimensions	13.3 cm (Diameter)
In-cab display unit dimensions	57x25x50 (WxHxD cm)





#### **VEHICLE INTERCOM SYSTEM**

A two-way communication system, operating in simplex form. Provides clear, reliable communication and can be mounted internally or externally.

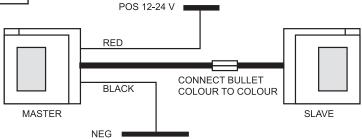
- 20 meter cable
- · Dust/waterproof to IP67
- · Steam cleanable and pressure washable
- 80 95 dB
- Voltage 10 30 VDC





#### **Typical applications:**

- Platforms
- · Refuse Collection Vehicles
- Ambulances



#### 2 TYPES:

ONE-WAY: only the Master can start communication REF 112TA4912 TWO-WAY: both stations/posts can start communication REF 112TA4913





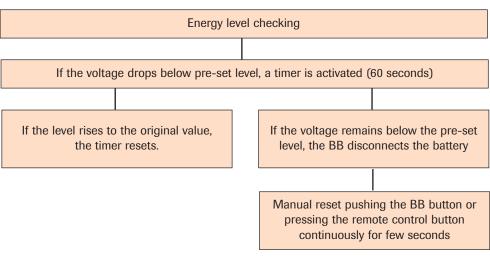
#### **BATTERY BRAIN**

# No more engine trouble due to the battery being run down!

#### **BATTERY BRAIN SAFEGUARDS YOUR BATTERY:**

- Statistics prove that 80% of service calls concern battery run downs
- One of the most common and annoying problems for the driver can now be avoided. Just fit battery brain; It will constantly check the level of the battery energy output of your vehicle.
- If the voltage level drops below the pre-set value (safety threshold) battery brain cuts out the electrical output to the vehicle retaining enough energy to restart the engine.
- If the engine does not start, just open the bonnet and press the push button of battery brain, holding it for a few seconds. The starter is fed again and the engine restarts!
- Battery brain is small and can be fitted in a few minutes to the battery positive terminal. Both for 12 or 24 V versions

#### **HOW DOES BATTERY BRAIN WORK**



## FEEDING CABLE (red) BATTERY BRAIN Positive Pole "C" (included in the Battery Brain kit)

#### FITTING:

- Disconnect the feeding cable (existing)
- Fit the BATTERY BRAIN on the positive pole and close up the bolt
- Connect the **black cable ("M") to earth** (mass; i.e. the body of the car)
- · Connect the feeding cable (existing) to "C"
- The system functions when the button is in "ON" position; the GREEN LED confirms the correct mounting
- When the button is in "OFF" position, the system is not in function
- · When the battery discharges, the LED goes OUT.





#### **BATTERY BRAIN**

#### **TYPE 1: MANUAL CONTROL VERSION**



- · Device with automatic detachment and manual restart.
- Battery check up with disconnection at a set tension level of remaining energy.
- Restart connection by a simple push on the button.
- · Normal use with knob in ON position.
- OFF position: WARNING! In OFF position the circuit is isolated and in case of leaks, the battery will totally discharge.

#### **SPECIFICATIONS:**

• Intervention threshold: 11,3 V - 11,9 V - 12,3 V

Account time: 30 sec.

#### **TYPE 2: REMOTE CONTROL VERSION**



- · Device with automatic detachment and manual restart.
- Battery check up with disconnection at a set tension level of remaining energy.
- Restart connection by a simple push on the remote control button for 4-5 sec.
- In case of lack of remote control, restarting the connection is possible by pushing the button.
- · Normal use with knob in ON position.
- OFF position: WARNING! In OFF position the circuit is isolated and in case of leaks, the battery will totally discharge.
- The remote control is standard and you can request an extra one.

#### **SPECIFICATIONS:**

• Intervention threshold: 11,3 V - 11,9 V - 12,3 V

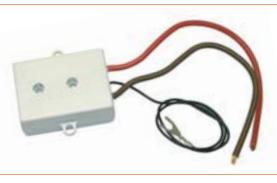
Account time : 30 sec.

Frequency receiver and transmitter RC USA: 315 mhz

• Frequency receiver and transmitter RC EUROPE: 133,9 mhz

#### **BATTERY GUARD**

#### NO MORE ENGINE TROUBLE DUE TO BATTERY RUN DOWN!



12 V **REF 123TA8415** 24 V **REF 123TA7731** 

Battery guard (similar to battery brain, but independent to it) constantly monitors one or more single devices installed on your car, forklift or aerial platform which may cause the anomalous battery draining when the engine is not running. While battery brain protects the whole electric plant of the vehicle, battery guard concerns only one or more additional devices. These devices must have a continuous working current not exceeding 45 Amps.

Battery guard disconnects the concerning device if the energy level of the battery drops below a preset level (typically 11,85 volts or 23,4 volts, depending on the battery). That allows the driver to start and run the engine normally.

As soon as the battery reaches the standard level (12,6 volts or 25,2 volts) thanks to the alternator feeding, Battery Guard automatically switches on the electric circuit and the device will run again.

No manual operation is required to restart the system.

Simply look at the green Led: Light ON = running, Light OFF = device disconnected





#### **SHOCK SWITCH**

### A forklift safety alarm and damage control monitor, designed to reduce forklift maintenance costs and to improve driving habits.

The Shockswitch is an impact detector that can be mounted on almost any material handling vehicle. If the vehicle is bumped beyond the impact level you select, an alarm will sound to let the supervisor know an incident has occured.

The Shockswitch is a major step towards controlling infrastructure, forklift and product dammage at your facilities. As an integral component to any quality/safety program, the Shockswitch has been installed on thousands of lift trucks to stop careless operators, and create a safer, more productive work environment, all of which result in a reduction of employer liability.

Many models are available to choose from, but no matter what model you choose, you can expect an important incident reduction. Customers have experienced incident reductions by as much as 90%, and a reduction in impact-related repairs by 50% or more. Investment return is reached within the first year.

#### PATENTED SENSOR TECHNOLOGY



The patented adjustable sensor uses magnetic technology that will trigger the alarm only upon impact above a selected G level.

The sensor has a 360 degree plane of sensivity.

The sensors are available in 3 ranges:

TYPE	G-LEVEL	APPLICATION	LIFT HEIGHT
M sensor A sensor	0,3 to 2 G 0,5 to 3 G	Heavy trucks, reach truck, Average lifttruck (this sensor covers 80% of all applications)	+ 3.500 kg 1.500-5.000kg
B sensor	1 to 7 G	Pallet trucks	250-2.000 kg

Increase or decrease the sensitivity simply by turning the sensor dial to the desired setting.

#### **TYPES**

The basic version has a built-in sensor. There are certain situations that require minor modifications to the unit in order to be satisfactory for an application. Such a situation exists when there is a large discrepancy in the way a Shockswitch reacts to impacts from the front and the rear of the lift. The problem is caused by the installation of the Shockswitch. This discrepancy can be neglected when the Shockswitch is properly placed. But there will be situations where proper installation of the box is not possible due to the construction of the lift truck. In these situations an external sensor will sometimes solve the problem. The Shockswitch box can be placed in a conveniant location and the external sensor can be placed in the proper impact sensing location, usually very low on the lift truck.

All Shockswitch units include a 103dB internal audible alarm, a test button for a quick check of operational status, and a tamper proof barrel lock that enables and resets the unit. The sensitivity is adjusted simply by turning the internal sensor dial.

# SHOCK SWITCH BASIC VERSION

# SHOCK SWITCH WITH EXTERNAL SENSOR





#### **SHOCK SWITCH**

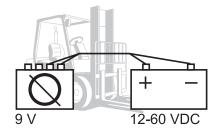
#### TYPE 1



Self-contained unit with 9V integrated battery.

A. With built-in sensor		B. With external sensor	
M-sensor	REF 112TA4924	M-sensor	REF 112TA4927
A-sensor	REF 112TA4925	A-sensor	REF 112TA4928
B-sensor	REF 112TA4926	B-sensor	REF 112TA4929

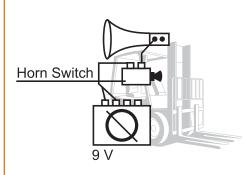
#### TYPE 2



Connects to external battery 12-60 VDC.

A. With built-in sensor		B. With external sensor	
M-sensor	REF 112TA4930	Not available	
A-sensor	REF 112TA4931		
B-sensor	REF 112TA4932		

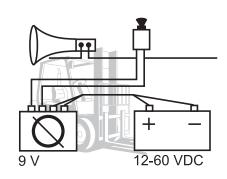
#### TYPE 3



Self-contained unit with 9V integrated battery. Connects to external horn.

A. With built-in sensor		B. With external sensor	
M-sensor	REF 112TA4933	Not available	
A-sensor	REF 112TA4934		
B-sensor	REF 112TA4935		

#### TYPE 4



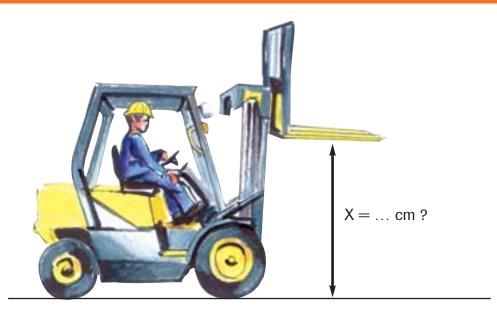
Connects to external battery 12-60 VDC. Connects to external horn.

A. With built-in sensor		B. With external sensor	
M-sensor	REF 112TA4936	M-sensor	REF 112TA4939
A-sensor	REF 112TA4937	A-sensor	REF 112TA4940
B-sensor	REF 112TA4938	B-sensor	REF 112TA4941





#### **HEIGHT INDICATION SYSTEM**



IF YOU WANT TO KNOW THE EXACT POSITION OF YOUR FORKS, THIS SYSTEM OFFERS THE PERFECT SOLUTION.

#### **HEIGHT INDICATION SYSTEM**

#### **REF 123TA7581**

- Distance sensor (laser)
  - voltage 10 30VDC
  - range 0,3 24m
  - analog output 4 20mA
  - transistor output 0,5A (for bigger loads use optional relay)
  - protection class IP67
- · LED display
  - mini housing 48x24x65mm
  - analog inputs: 0 10VDC, 0 20mA, 4 20mA
  - · adjustable scaling factor
  - voltage: 10 30VDC protection class IP65 on front
  - · minimum/maximum memory
  - · easy to set up by menu support
- 10 x 10 cm reflective tape
- · installation bracket for sensor
- 5m cable (connection sensor/display)







The distance sensor (to be placed at the lower end of the mast), emits a laser beam which is reflected by the tape that is mounted on the same level as the forks. Depending on the height of the forks, a signal is passed to the display which shows the actual height.

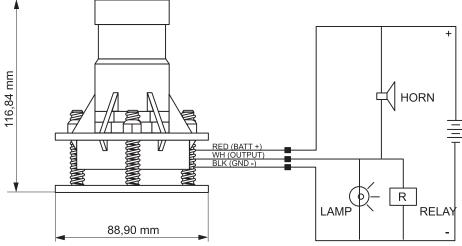
Apart from the minimum/maximum height, a fixed height can be set on the sensor. The transistor output can be used to set off an alarm or buzzer when the pre-specified height is reached. This fixed height can be determined permanently during the installation of the sensor, or an optional switch can be placed on the dashboard, so the driver can change it at any time.





#### **LEVEL SENSOR**





#### **REF 112TA9585**

#### **SPECIFICATIONS:**

- NC-contact
- Trip angle 4,5°
- Time delay 2,5 sec.
- Temperature range -35° to 85°C
- Voltage 7 48 VDC





#### LEVEL SENSOR

#### TYPE 1

REF 115TA2143 NC-CONTACT (FAILSAFE)

REF 115TA2144 NO-CONTACT



#### **SPECIFICATIONS:**

- · Omni-directional level sensor
- Trip angle 3°
- Time delay 2 sec.
- Voltage 10 60 VDC



TYPE 2

**REF 115TA2145** 

SPECIAL TYPE USED FOR JLG

OTHER TYPES AVAILABLE ON REQUEST







#### **FORWARD - REVERSE PROTECTION FOR FORKLIFTS**

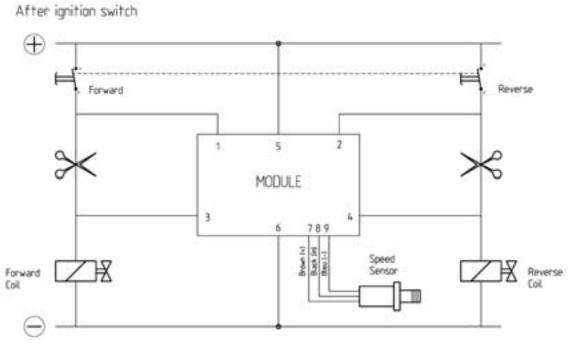
Electric forward and reverse switch for transmissions. Secures the transmission against abuse by ensuring that the driver has to switch to neutral prior to going from reverse to forward. (Or the other way around). You will increase the life span of the differential and the transmission remarkably. In addition, your tyres will last much longer.

12 Volt REF 107TA7655 24 Volt REF 107TA7656

This protection makes it impossible to change direction when speed is too high.













### **NOTES**