DAMMANN®

Pflanzenschutztechnik
Fahrzeugtechnik
Airporttechnik

DAMMANN
ISOBUS-System

DAMMANN®

ISOBUS-Terminals

Since 2003 ISOBUS at DAMMANN

We quickly realized the possibilities of the ISOBUS system and have set the ISOBUS right from the start. This made the operation of our crop protection sprayers even easier and more comfortable. We also saw the numerous work facilities that the system entails. Many of the ISOBUS applications and ISOBUS hardware known to everyone today have been developed by DAMMANN, such as Vario-Select or the MC1 ISOBUS terminal with the header strip. Today, we are making increasing demands on the system and, with our electronics suppliers, we are developing more and more possibilities to further expand the system.

DAMMANN BASIC-Terminal

This terminal is ideal for the entry into ISOBUS. With the application ISOBUS-UT (universal terminal) the device corresponds to the ISOBUS standard. The DAMMANN BASIC terminal impresses with the favorable entry price and many optional extensions.

Standard: 5.7 “display, VGA resolution 640 x 480 pixels, 32 bit processor with 4oo MHz, 64 MB RAM and USB stick.

Extendable with GSM modem and camera connections.

Joystick III

A “must” for every machine control and at DAMMANN terminals. It facilitates operation so that the driver can concentrate on the production sequences. The joystick III can be easily retrofitted in almost every tractor and is easy to mount. The eight function buttons on three levels allow direct selection of control commands from the DAMMANN crop protection sprayers.

DAMMANN MC1-Terminal

This ISOBUS terminal meets the highest requirements for precision farming. The 10.4 “display allows you to see all the details at a glance. It is equipped as standard with the ISOBUS-UT and ISOBUS-TC (TASK-Control) apps, so that order management and applications by application cards are possible by application cards.

Standard: 10.4 “display, VGA resolution, 640 x 480 pixels, 32 bit processor with 4oo MHz, 64 MB RAM and USB stick.

Extendable with GSM modem and camera connections.

S-Box

The S-Box is an additional module for section width control. It can be installed directly at the terminal and facilitates the manual switching off of individual section widths. Ideal for nests treatment and for machines with up to 18 section widths.

DAMMANN®

ISOBUS-Terminals

HD 8 pad

The **HD 8 pad** impresses with state-of-the-art technology and a variety of functions that is second to none. With the 8 “display and capacitive touch screen an ideal operation is guaranteed. As usual, the functions can be displayed in a main window and a header. In addition, the **HD 8 pad** provides many enhancements, apps and automatic systems.

State-of-the-art technology with the widest range of functions!

The **HD 8 pad** complies with the ISOBUS standard ISO 11783. As a universal terminal, it can be used independent of the manufacturer on all machines which meet the standard specification of the ISOBUS. It provides all the basic functions required to operate an ISOBUS machine and is equipped with a 800 x 600 pixel TFT duo color display. The touch screen is located behind the glass pane, which makes this technology suitable for harsh use in agricultural technology.

The HD 8 pad also supports precision farming functions. All apps, such as TRACK-Leader, SECTION-Control and FIELD-Nav, can be activated. The USB stick or external modems can be used for data transmission. Due to the high resolution of the **HD 8 pad**, up to 2 windows, “main window” and “header” can be displayed simultaneously.

Advantages:

» Latest touch technology

» Individually expandable thanks to APP’s

» One terminal for all machines

» ISOBUS standardizes control and machine settings, reduces set-up times, assembly and interface problems as well as calibration sequences

TankControl

Electronic tank capacity measurement with automatic filling control (optional). The tank contents can be precisely determined using a stainless steel tube with sensors. The filling process can be terminated automatically after reaching a preselected quantity. During the work, the contents of the tank and the area to be machined as well as the distance on the terminal are displayed.

HD 12 pad

All information at a glance - up to 5 applications simultaneously!

The ***HD 12 pad*** is the latest generation ISOBUS terminal - unbeatable in flexibility, versatility and ease-of-use. The device complies with the ISOBUS standard. The ***HD 12 pad*** can be used in both portrait and landscape format, according to the requirements of the user. In various layouts and user interfaces, up to five Precision Farming functions can be displayed simultaneously. This variety does not currently offer any other terminal! It is also one of the first with capacitive touch screen. The touch screen is protected behind a glass pane, which makes the technology predestined for the harsh use of practice.

In addition to the machine control (ISOBUS-UT) and the ISOBUS order processing (ISOBUS-TC), the ***HD 12 pad*** is equipped with a GSM modem so that all terminal and machine data can be sent directly to a portal. Thanks to the APP & GO concept, the ***HD 12 pad*** can be expanded with many functions. In addition to the TRACK-Leader and an automatic steering (TRACK-Leader TOP), the ***HD 12 pad*** also offers the possibility of the GPS-controlled section width switching (SECTION-Control). But also the extensive accessories such as cameras, an S-BOX, a LIGHTBAR or a joystick facilitate helps the life of the user.

All terminals are equipped with an integrated tractor ECU (TECU) as standard. This also guarantees that such information as road speed, PTO speed, working position and direction of travel are made available to the machines on tractors without ISOBUS. These data are now essential as they are required for precision farming applications.

Standard: 12.1 “display, capacitive Dualtouch, XGA resolution, 1024 x 768 pixels, 32 Bit processor with 600MHz, 256 MB SDRAM, GSM modem, 2x camera connections and Ethernet.

DAMMANN

APP & CO

APP & CO is the innovative licensing concept, which is based on software applications (“Apps”). For this

	ISOBUS-UT ISOBUS universal terminal for controlling all machines with ISOBUS machine control
	ISOBUS-TC TASK-Controller
	TRACK-Leader Parallel Tracking
	SECTION-Control GPS-controlled switching on and off of machines
	VRC Area-specific management of areas according to the application card
	TRACK-Leader TOP App enables automatic steering
	FIELD-Nav Navigation software, which contains all navigable paths
	farmpilot farmpilot enables data exchange between farm PC and the machine via the mobile network.
	Vario-Select Variable-nozzle control
E-D-S	EDS (TB-EDS) EDS = Single nozzle control
T-S-D	T-S-D Sub-specific nozzle switching Planting of areas according to application card, with different sections on the gesture range
S-D-S	S-D-S Sensor - Nozzle - control
C C A Curves ~ Control ~ Application	C ~ C ~ A Curves ~ Control ~ Application
MFS Multi - Fluid - System	MFS Multi-Fluid-System
MFS Plus Multi - Fluid - System	MFS plus Multi-Fluid-System PLUS

APP & CO

purpose, apps are possible on all DAMMANN terminals and can be activated after ordering.

			
Vorrausetzung keine			
O		O	
APP prerequisite: ISOBUS-UC			
O	O	O	O
APP prerequisite: GPS-receiver			
O	O	O	O
APP prerequisite: ISOBUS-TC and TRACK-Leader			
O	O	O	O
APP prerequisite: ISOBUS-TC and TRACK-Leader			
O	O	O	O
APP prerequisite: TRACK-Leader			
O	O	O	O
APP prerequisite: GPS-receiver			
O	O	O	
APP prerequisite: GSM-Modem			
O	O	O	O
APP prerequisite: ISOBUS-UT			
O	O	O	O
APP prerequisite: Vario-Select			
O	O	O	O
APP prerequisite: EDS (TB-EDS), Vario-Select, TRACK-Leader and ISOBUS-TC			
O	O	O	O
APP prerequisite: EDS (TB-EDS), Vario-Select and T-S-D			
O	O	O	O
APP prerequisite: EDS (TB-EDS), Vario-Select and T-S-D			
O	O	O	O
APP prerequisite: 1 ISOBUS-System and 1 Standard-System			
O	O	O	O
APP prerequisite: 2 ISOBUS-Systemes			

DAMMANN

APP & CO

TRACK-Leader TOP

APP prerequisite: TRACK-Leader

This app enables automatic steering, which is integrated into the app TRACK-Leader and is activated with this app.

In addition to TRACK-Leader TOP, a steering system consists of an additional steering computer and a GPS receiver (D-GPS or RTK), which is used according to the accuracy requirements. The automatic steering relieves the driver, the surface area increases, the diesel consumption drops. In addition to the hydraulic steering, a friction wheel motor on the steering wheel is recommended for retrofitting.

FIELD-Nav

APP prerequisite: none

FIELD-Nav is the first navigation software that contains all navigable paths, takes into account traffic restrictions and leads directly to the field or other agricultural destinations. FIELD-Nav was developed especially for contractors, machine rings and farmers. Navigation targets can be recorded differently, the map material can be edited individually and can be assigned different attributes, such as entry, height or tonnage restrictions. Failures and searches can thus be avoided.

Vario-Select

Automatic multi-nozzle switching to maintain the specified set-load amount. Vario-Select switches the nozzles and regulates the pressure depending on the speed. In addition, the nozzles are automatically closed when the vehicle is stoped. Vario-Select can automatically regulate 2 to 4 nozzles on the tandem or quattro nozzle holder.

EDS (TB-EDS) Single nozzles circuit

APP prerequisite: TRACK-Leader and Vario-Select

An additional computer switches each nozzle carrier (each partial width / section) individually.

T-S-D

APP requirements: EDS (TB-EDS), Vario-Select, TRACK-Leader and ISOBUS-TC

Partial-specific nozzle switching for the management of surfaces according to application card, with different sections on the gesture range.

S-D-S Sensor nozzle control

APP prerequisite: EDS (TB-EDS), TRACK-Leader and Vario-Select.

S-D-S

The sensor nozzle control makes it possible for an external computer unit of an on-line sensor to set the setpoint values for the application and to transmit the actual values to the external computer. For the sensor control, the linkage is divided into1, 2, 4 or 6 sections each with a sensor, which can then be switched individually.

C ~ C ~ A Curves ~ Control ~ Application

APP prerequisite: EDS (TB-EDS), TRACK-Leader and Vario-Select.

C C A
Curves ~ Control ~ Application

C~C~A calculates the different amount of effort in curves. With sensors, the curve radius is determined and the output volumes of the nozzle carriers / partial widths / sections are adjusted to the set quantity per hectare. This control compensates for the different velocities that exist during a cornering of the boom.

MFS Multi-Fluid-System

Prerequisites: An ISOBUS system and a system with conventional control

MFS
Multi - Fluid - System

With the MFS, it is possible to operate a conventional system (e.g., spraydos) and an ISOBUS system via a terminal, thus facilitating the operator. The cabin view is maintained as a terminal is dropped. The systems are switched with terminal, joystick and S-box. The system was developed for 2-tank systems with a boom.

MFS plus Multi-Fluid-System PLUS

Prerequisite: Two ISOBUS systems

MFS Plus
Multi - Fluid - System

The MFS plus makes it possible to control several ISOBUS systems via a terminal, thus facilitating the operator. The cabin view is maintained as a terminal is dropped. The systems are switched with terminal, joystick and S-box. The system was developed for 2-tank systems with one boom.

*pro*Control

The perfect extension to DAMMANN ISOBUS terminals

The DAMMANN ***pro*Control** is an extension for the ISOBUS job computer for the operation of the program-controlled taps of the pre-programmed working and cleaning modes. The user can operate program sequences from the terminal in the cabin, but also from the ***pro*Control** terminal on the device.

The remote control system with automatic working, cleaning and filling modes.

All valves and taps are electrically controlled. Communication takes place via CANBUS, so that all information on the machine and the ***pro*Control** are available and controllable everywhere.

It is particularly important here that the dispensing center is also controlled via ***pro*Control** and is completely cleaned during automatic cleaning.

Automatic boom control

For the boom the working height and the excavation height are controlled automatically. After adjustment, the boom is automatically adjusted in height and inclination by means of two ultrasonic sensors and also angled in the option of angling. The work height, depending on the set values, is adapted to the plant and ground contours.

DCD Distance Control Dammann

The new fully automatic boom control from DAMMANN.

During the development of DCD, care was taken that the evaluated DAMMANN G-boom is in principle not changed. A possibility to retrofit the existing plant protection devices should be ensured, so that the durability of the DAMMANN technique remains a priority. It is therefore possible to retrofit DCD at any time.

The operation of DCD is simple and fast. The control can be selected with just a few buttons and can, of course, be changed at any time. The work and excavation height of the boom above the crop can be selected in centimetre in the terminal. When calibrating, the user no longer has to manually move the linkage into the desired working positions, which is now done from the terminal via the boom control.

With the fully automatic boom control, the following control types can be selected depending on the equipment of the device:

- Height control via lifting / lowering and angulation in conjunction with slope adjustment simultaneously. ***NEW***
- Operates smoothly and gently boom

Enter the working / excavation height:

- Input box in cm ***NEW***
- Teach-in button for excavation height and work height.
- Automatic recovery of working height after re-folding. ***NEW***

Control modes

- Lifting / Lowering + angling + slope adjustment ***NEW***

- Lifting / lowering + angling ***NEW***

- Slope adjustment

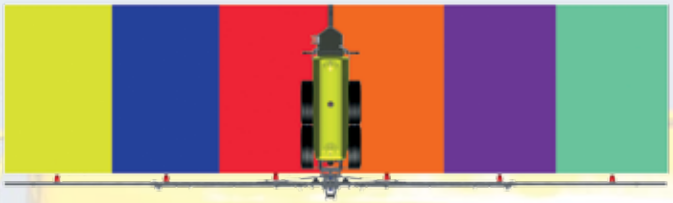
DAMMANN®

APP & CO

Online sensors

Online sensors play an important role for Precision Farming. Sensors, such as the Fritzmeier sensor. Like other sensors, the sensor can be integrated into the control system of the nozzle circuits. The sensor system and the Dammann ISOBUS system communicate via the S-D-S.

The S-D-S App allows sensors to control the flow rate in the system. The sensor controller must only be able to output an open protocol. The Dammann ISOBUS system transfers the data to the sensor controller for recording the output quantity in the sensor system.



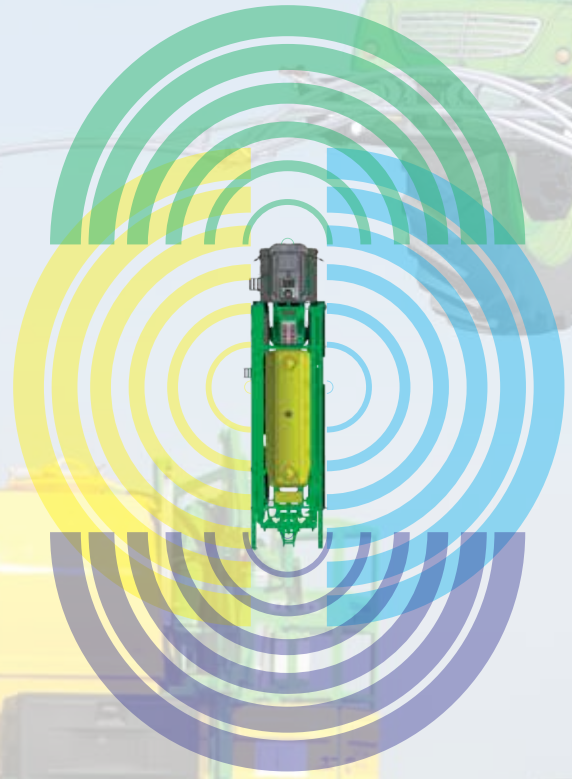
Camera

The analogue compact camera is protected by an aluminum die-cast housing ideally against weather influences. The high shock and vibration resistance allows applications under the most difficult conditions. In addition, it is equipped with automatic brightness adjustment and guarantees sharp, high-contrast pictures with changing light conditions.

360° round view

The new touch ISOBUS terminals HD 12 pad and HD 8 pad allow more. It is now possible to connect a camera system with four 180 ° cameras to the terminal. Via a special computer, the 4 video signals are cut into a video signal so that the driver has all sites of the ***DAMMANN-trac*** in view. Children, people and obstacles are clearly displayed on the terminal and dead angles, just in the areas of the wheels, are minimized.

A round view camera system, with three cameras, is also available for the trailer sprayers



ESZ keypad and sprayer keypad

The new keypads for easier operation outside the cabin.

The new keypads make it easier to operate the built-up crop protection sprayer. The keypads are positioned in the immediate vicinity of the dispensing center so that the operator has the switching functions available outside the cabin. This additional user-friendliness of the crop protection syringe is available in two versions: the 4-key ESZ keypad and the 8-key sprayer keypad.

The illuminated buttons are freely configurable so the desired switching possibilities can be routed from the cabin to the dispensing center. In this way, the lifting and lowering of the dispensing center, the working light, the switching on of the pump and other functions can also be switched at the dispensing center.

DAMMANN®

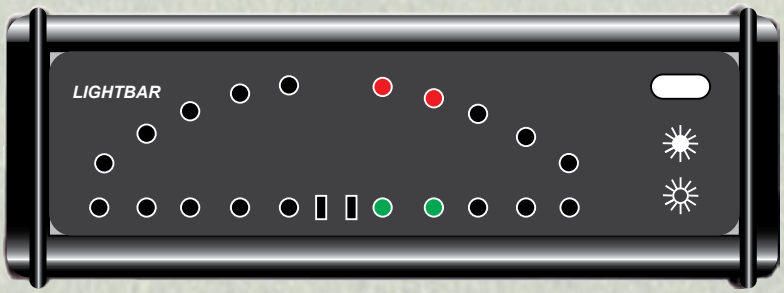
ISOBUS Erweiterungen

Wind meter

The wind meter measures the current air speed and sends the data to the ISOBUS job computer. The corrected wind speed is displayed in the terminal.

Tilt module

Extension for the app TRACK-Leader, ideal for uneven terrain. A sensor detects the tilt of the machine and corrects the GPS position.



External lightbar

The external Lightbar as a perfect complement to the app TRACK-Leader, as the external Lightbar reflects the steering instructions of the On-Screen Lightbar from the display. The display can be attached to the windshield directly above the steering wheel in the driver's field of vision.

DGPS receiver

DGPS receiver A101

This GPS receiver can be used worldwide. In Europe and North America, he works with the GPS system and with the correction services WAAS and EGNOS. Wherever they can not be used, the correction signal can be simulated manually with E-Dif®.

An external module is available for tilt compensation.

Channels	12 channels GPS L1
Protection class	IP 67
Protocol	NMEA 0183

A101 accuracy:

	Europe and North America (with WAAS and EGNOS)	Worldwide (With E-Dif®)
Absolute	60 cm	250 cm
Track-to-track	25 cm	100 cm

DGPS receiver AG-STAR

This GPS receiver can be used worldwide. In Europe and North America, he works with the GPS system and with the correction services WAAS and EGNOS. Wherever they can not be used, the receiver can use the GPS signal together with Glonass satellites. The correction signal is internally calculated in this case (GL1DE® technology).

An external module is available for tilt compensation.

Channels	14 channels Glonass L1
Protection class	IP 67
Protocol	NMEA 0183

AG-STAR accuracy:

	Europe and North America (with WAAS and EGNOS)	Worldwide (With Glonass and GL1DE®)
Absolute	70 cm	150 cm
Track-to-track	15 cm	25 cm

DGPS receiver SMART-6L

This GPS receiver can be used worldwide. In Europe and North America, he works with the GPS system and with the correction services WAAS and EGNOS. Wherever they can not be used, the receiver can use the GPS signal together with Glonass satellites. The correction signal is internally calculated in this case (GL1DE® technology)

An external module is available for tilt compensation.

The receiver can be retrofitted to RTK, correction data are then received with a modem and fed into the receiver.

Channels	120 channels Glonass L1/L2
Protection class	IP 67
Protocol	NMEA 0183 und NMEA 2000 CAN-Port

SMART-6L accuracy:

	Europe and North America (with WAAS and EGNOS)	Worldwide (With Glonass and GL1DE®)	GPS/Glonass + RTK
Absolute	60 cm	60 cm	2,5 cm
Track-to-track	15 cm	15 - 18 cm	2 cm

DAMMANN®

DGPS Empfänger

Weather station

The weather station provides important data for Precision Farming. Temperature, humidity, wind direction or wind speed can be stored accurately for each job, since a simple GPS receiver is integrated as well as the compass.

HERBERT DAMMANN GmbH
Dorfstr. 17
21614 Buxtehude-Hedendorf
Tel.: +49 4163 8163-0
Fax.: +49 4163 8163 71
Web: www.dammann-technik.de
Mail: info@dammann-technik.de