Continental
The Future in Motion

Modular instrument cluster platforms

Displaying information reliably and flexibly

Content.

Products

Continental Instrument Clusters – All necessary information in premium quality.

The instrument cluster is the main source of information for drivers. Particularly in commercial, industrial and special purpose vehicles the instrument cluster is exposed to high demands and therefore it must be extremely resistant. We hold the essential expertise for instrument clusters operating worldwide and always keeping an eye on customer needs.

The information provided by the instrument cluster needs to be clearly structured and easy to read and is contingent to the given need – that's why our instrument clusters offer premium image quality and allow a wide range of user-customizable options. Our scalable and resistant cluster solutions are quality certified. Combined with the fitting software they provide the necessary flexibility for every type of vehicle and task. Our software solutions allow the instrument cluster to be programmed and perfectly configured to fit customer specific requirements.

Our long lasting experience and automotive qualified products offer a high-value appearance in color, brightness and surfaces as well as cost-optimized platform concepts. With this large and exactly matched up portfolio we offer full services in the area of instrumentation.

All solutions at a glance.

Continental provides a wide range of instrument cluster solutions suitable for various requirements and with fully customizable dials. The main characteristics and scope of use for each of our off-the-shelf platform products are listed below.

MultiViu®Professional12
is our most innovative stand-alone display product. It provides the best presentation of pictures, 2-D-graphics and videos and high flexibility through a fully programmable 12.3" wide-view colored TFT display without fixed gauges.

FlexCluster
is a robust stand-alone instrument cluster providing high flexibility based on a customizable dot-matrix display and maximum protection against water and dust.

LoaderIC
is a cost-optimized stand-alone solution for the construction market and machinery in special vehicles based on its maximum protection against water and dust.

CB500
is an analog and very robust stand-alone instrument cluster for agricultural and construction vehicles.

BusIC
is our multiple-purpose product for bus, coach and similar vehicle applications available as stand-alone or combined with the body controller CBCU3 system.

CMIC
is a cost-optimized cluster interfaced with a body controller and has several pre-defined screen masks.

MOKI3
is our high-end instrument cluster and part of the KIBES®-32 multixplex system. It provides customized solutions especially suitable for small production volumes.

DMUX3
is our fully programmable display multiplexer and an integral part of MOKI3. As a special feature DMUX3 is able to show camera pictures.

MultiViu®Flex4 / 7
is our user-friendly stand-alone display controller. It is available in two TFT display sizes: 4.3 and 7" and with different control possibilities: with buttons, or touch or both. It is offering different inputs / outputs and interfaces depending on customer's needs. MultiViu®Flex4 / 7 is a very robust allrounder and can be combined with various products.

	Stand-alone operable	Integrated	Display	Dimensions (w x h x d)	Software tool
MultiViu®Professional12	•	•	12.3" wide-view color TFT	414 x 220 x 66 mm	KIBES®-32 + CGI Studio
FlexCluster	•		115 x 145 pixel monochrome dot-matrix	290.6 x 143.5 x 72.5 mm	KIBES®-32 + grADI
CB500	•		1.6" segmented LCD	291 x 144 x 69 mm	CentroWin
LoaderIC	•		3.5" segmented LCD	404.5 x 195 x 98.2 mm	KIBES®-32
BusIC	•	•	166 x 128 pixel monochrome dot-matrix	411 x 199 x 100 mm	KIBES®-32 + grADI
CMIC		•	166 x 128 pixel monochrome dot-matrix	381 x 181 x 51 mm	KIBES®-32 for CBCU3
MOKI3		•	DMUX3	414 x 220 x 88 mm	CAVTAN
DMUX3		•	320 x 240 pixel color TFT	173 x 140 x 68.7 mm	CAVTAN
MultiViu®Flex4 / 7	•		4.3 or 7" wide-view color TFT	267 x 136 x 76.2 mm	AppBuilder for MultiViu®Flex

MultiViu®Professional12.

With the MultiViu®Professional12 we offer the most innovative instrument cluster. It is fully programmable to different needs and requirements and supports the trend towards a larger and more colorful display with its 12.3" full-color TFT display. The MultiViu®Professional12 provides maximum freedom in HMI screen design and easy implementation of video and camera pictures.

Additionally the MultiViu®Professional12 can be quickly integrated into the existing vehicle architecture. Its warning and status telltale module, fulfilling ASIL-A requirements, is highly reliable. MultiViu®Professional12 is programmed by a perfectly matched software tool chain using KIBES®-32 PLC and the automotive high-end graphic implementation software CGI Studio.

MultiViu®Professional12

Advantages at a glance

– Innovative stand-alone display product

– Super wide-view, high-contrast, true-color 12.3" TFT display

– Model based design system: software for application programming and software for graphical HMI programming

Preliminary specifications and features

Dimensions	414 x 220 x 66 mm
Operating voltage	9 V … 16 V or 18 V … 32 V
Operating temperature	- 40 °C … + 70 °C
Protection degree	IP 54 (front) IP 20 (rear and laterally)
Wake up	3 (KL15 / ignition, lights on / off, 1 x spare, all high-active)
Analog input (resistive / voltage)	5 x voltage input, 2 x resistive input (thereof 1 x for fuel sender)
Digital input	3 x low-active, 3 x high-active, 6 x quasi-analog input, diagnosable, level programmable
Frequency input	1 x PWM for illumination control
Output	1 x sensor supply: 5 V
Audio	Internal loudspeaker plus 1 interface for an external loudspeaker
Video	1 x digital video input 3 x analog video input
Interfaces	3 x high-speed CAN; EasyLink for gauge (CVSG) connection; LIN with 12 V signal level; high speed interface for data download
Connectors	Rosenberg connector, BNC connector

Description

– Illumination: normally black with bright white LED illumination

– Display: super wide-view, high contrast, true color 12.3" TFT display

– Display resolution: 1440 x 540 pixel

– Telltales: optional telltale module with 11 telltales on top of the display

– Push-buttons: optional button module with up to 4 capacitive buttons e. g. for trip reset and illumination setting below the display

FlexCluster.

With its compact design, durable housing and flexible programming the FlexCluster provides great reliability and flexibility. The layout of the high quality central monochrome dot-matrix display is fully customizable and can be programmed to show personalized icons, corporate logos, bar graphs and different mask layers with the grADI software.

The various interfaces allow data to be processed from two separate CAN buses running application-specific protocols. This enables

flexibility in use and ensures that all important data and information can be internally applied or transmitted to other devices such as round satellite gauges.

Thanks to the KIBES® software, the FlexCluster can be programmed and configured to precisely meet any customer requirements. For added convenience, the self-explanatory software allows customers to implement changes themselves as and whenever required.

FlexCluster

Advantages at a glance

– Ergonomically designed and resistant stand-alone solution

– 115 x 145 pixel monochrome dot-matrix LCD display

– Indication of many parameters in a compact space

Specifications and features	
Dimensions	290.6 x 143.5 x 72.5 mm
Operating voltage	9 V … 16 V or 18 V … 32 V
Operating temperature	- 40 °C … + 75 °C
Protection degree	IP 67 (front and rear)
Wake up	CAN or terminal 15
EOL programming and diagnosis	UDS on CAN
Analog input (resistive / voltage)	6
Digital input	24
Frequency input	4
Output	3 x 500 mA output can be used as frequency or digital output (low side switch)
External buzzer output	1
Interfaces	2 x CAN (ISO 11898) 1 x EasyLink for additional gauge satellites (CVSG)
Connectors	2 x Tyco Super Seal 835 pin and 23 pin

Description

– Illumination: white backlight and red colored display illumination, dimmable

– Gauges: 4 gauges – 2 x large, 2 x small (e. g. speedometer, tachometer, fuel level, coolant temperature)

– Display: monochrome dot-matrix LCD

– Display resolution: 115 x 145 pixel

– Telltales: 24 + 2 for small gauges (indication symbol)

Centrobase CB500.

With the Centrobase instrument cluster all relevant engine data (analog and digital) is presented clearly, thus ensuring greater convenience and enhanced ergonomics in the driver's cabin.

The Centrobase instrument cluster is continually adapted and expanded to meet changing customer requirements and can be configured to meet customer-specific needs thanks to the special CentroWin software.

Centrobase CB500

Advantages at a glance

– Analog and very resistant stand-alone instrument cluster

– Fixed segment display

– Durable and compact design

Specifications and features

Dimensions	291 x 144 x 69 mm
Operating voltage	12 V
Operating temperature	- 30 °C … + 70 °C
Protection degree	IP 65 (front)
EOL programming and diagnosis	K-line
Input	2 x frequency, 3 x resistance, PWM
Output	C3-signal
Integrated warning buzzer	1

Description

– Illumination: green backlight (LED) and amber colored display illumination

– Gauges: 4 x analog indication: 1 x large, 1 x medium, 2 x small (e. g. speedometer, tachometer, fuel level, coolant temperature)

– Display: digital indication of e. g. hour counter, odometer, trip odometer, trip hourcounter, clock and gear shift

– 1.6" segmented LCD

– Telltales: up to 15 (indication symbol)

LoaderIC.

The Loader Instrument Cluster is a platform instrument cluster for the loader market and machinery in special vehicles. This resistant instrument cluster controls up to 24 telltales. Various inputs / outputs are used for telltales, sensors and gauge control.

By module design concept, we supply a mature traditional cluster for different vehicle configurations and a broad range of requirements. The Loader Instrument Cluster is very durable and optimally protected against water and dust. Thanks to the KIBES® software, the LoaderIC can be programmed and configured to precisely meet any customer requirements.

LoaderIC

Advantages at a glance

– Highly resistant stand-alone solution for special vehicles in the machinery and construction markets

– 2 types of 3.5" segmented displays available

– Optimally protected against water and dust

Specifications and features

Dimensions	404,5 x 195 x 98,2 mm
Operating voltage	24 V
Operating temperature	- 30 °C ... + 75 °C
Protection degree	IP 65 front side, IP 30 rear side
Wake up	5
Analog input (resistive / voltage)	7 (5 x resistive input / 2 x voltage input)
Digital input	20
Frequency input	3 x (vehicle speed signal, engine speed input, reserved frequency input)
Output	1 x frequency output; 4 x power output (2 x 5 V; 2 x 12 V)
Interfaces	1 x CAN interface (follow J 1939 protocol)
Connectors	2 x common 32 pin, 2 x AMP connector

Description

– Illumination: orange scales, red pointers and orange display illumination

– Gauges: 5 gauges (e. g. tachometer, coolant temperature, air pressure, engine oil and transmission oil temperature)

– Display: 2 types of segmented displays available

– Display resolution: 3.5" segment LCD

– Telltales: 16 or 24

– Push-buttons: 1

BusIC.

The BusIC Instrument Cluster is available as stand-alone variant or system variant controlled by CBCU3. By module design concept, we supply a high flexibility for different vehicle configurations. The BusIC is available in two different modern stylings.

Application and functional HMI are programmed with KIBES®-32 and the graphical HMI with the grADI software in order to fulfill a wide range of different requirements.

BusIC

Advantages at a glance

– Available as stand-alone or controlled by CBCU3

– Monochrome dot-matrix display with a resolution of 166 x 128 pixel

– Individual programming of the functional and graphical HMI application configurations

Specifications and features	
Dimensions	411 x 199 x 100 mm
Operating voltage	24 V
Operating temperature	- 30 °C ... + 75 °C
Protection degree	IP 54 (front), IP 20 (rear)
Wake up	6 wake signals (1 for ignition)
EOL programming and diagnosis	diagnosis interface K-line
Analog input (resistive / voltage)	8 (3 x voltage input, 5 x resistance input)
Digital input	50
Frequency input	2 (vehicle speed sensor signal input; engine speed sensor signal input)
Output	digital, power output for 5 V & 12 V, B7, B8
Interfaces	CAN interfacing with or without CBCU
Connectors	3 x JAE connector (2 x 30 pin, 1 x 22 pin)

Description

– Illumination: full yellow backlight technology

– Gauges: 6 gauges or 2 gauges with 4 LED bar graphs, dial customizable

– Display: 5" dot-matrix display

– Display resolution: 166 x 128 pixel

– Telltales: up to 50 telltales

– Push-buttons: 2 rotatable push-buttons

CMIC.

The CMIC is a cost-optimized instrument cluster solution which is used in combination with the CBCU3 body controller. It has four small gauges, a set of telltales and a monochrome dot-matrix display for driver's information and onboard diagnosis. The pre-defined masks guarantee an optimized depiction and simplify the HMI screen design. The CMIC provides a flexible structure for developing pictograms and text symbols and can at a glance display all relevant information for the driver. It is a highly reliable and automotive tested system with an open electronic network architecture.

CMIC

Advantages at a glance

– Operable together with body controller CBCU3

– Monochrome dot-matrix display with a resolution of 166 x 128 pixel

– Pre-defined screen masks guarantee an optimized depiction and simplify HMI screen design

Specifications and features

Dimensions	381 x 181 x 51 mm (without fastener)
Operating voltage	18 V … 32 V
Operating temperature	- 40 °C … + 75 °C
Protection degree	IP 54 (front), IP 20 (back side)
Wake up	3
EOL programming and diagnosis	KWP2000 on K-line
Analog input (resistive / voltage)	none
Digital input	none
Output	PWM output signal
Interfaces	instrument CAN, K-line
Connectors	AMP connector

Description

– Illumination: LED green scales, red pointers, yellow backlight

– Gauges: 2 large gauges and 4 small gauges

– Display: monochrome dot-matrix display

– Display resolution: 166 x 128 pixel

– Telltales: 24

– Push-buttons: 1

MOKI3.

Besides the actual vehicle design, the information interface and the entire dashboard are the elements that immediately strike the observer. They provide vehicle manufacturers with scope in designing and the opportunity to make an individual impression.

The MOKI3 platform offers a large number of fully customizable components such as telltales, number of gauges or the design of dial and pointers. It is the best-selling off-the-shelf instrument cluster for buses in Europe.

The MOKI3 platform is fully programmable via the CAVTAN software tool and is equipped with DMUX3 high-end display multiplexer.

MOKI3

Advantages at a glance

– Part of the KIBES®-32 multiplex system

– Equipped with high-end display multi-plexer DMUX3

– Three video inputs for monitoring blind spots, e. g. door or reversing camera

Specifications and features

Dimensions	414 x 220 x 88 mm
Operating voltage	21.5 V … 32 V
Operating temperature	- 20 °C … + 70 °C
Protection degree	IP 43 front side-mounted IP 20 rear side-mounted
Wake up	8
EOL programming and diagnosis	KWP2000 on K-line
Analog input (resistive / voltage)	4 (MOKI3), 2 (DMUX3)
Digital input	max. 24 x diagnostic input (MOKI3) max. 68 x diagnostic input (DMUX3)
Pulse input	2 x pulse input for speedometer and tachometer
Video input	3 (PAL / NTSC, CVBS, 1 Vpp, 75 Ω)
Output	12 (MOKI3) 28 (DMUX3)
Interfaces	instrument CAN (ISO 11898) mobile communication CAN (ISO 11519) reserve CAN (ISO 11898) optional
Connectors	ITT Canon Trident connector

Description

– Illumination: LED backlight, dimmable

– Gauges: 2 large gauges (speedometer / tachometer); max. 4 small gauges

– Display: DMUX3

– Display resolution: 320 x 240 pixel

– Telltales: max. 26

– Push-buttons: TCO and dimming, max. 6 integrated push-buttons

DMUX3.

The DMUX3 is the third generation of display multiplexers and is used as an integral part of MOKI3. Beside typical display masks like menus, text and symbol masks it can show camera pictures. Additional inputs and CAN interfaces offer connections for all dashboard switches, infotainment devices and to the ZR32-A. The DMUX3 display is fully programmable via the CAVTAN software tool.

DMUX3

Advantages at a glance

– Integral part of MOKI3

– 5" QVGA digital true color TFT display with a resolution of 320 x 240 pixel

– DMUX3 is equipped with 3 video inputs

– More inputs are available e. g. for connection to dashboard switches

Specifications and features

Dimensions	173 x 140 x 68.7 mm
Operating voltage	16 V … 32 V
Operating temperature	- 20 °C … + 70 °C
Protection degree	IP 20
Wake up	8
EOL programming and diagnosis	KWP2000 on K-line
Analog input (resistive / voltage)	2
Digital input	68
Output	28
External speaker output	1
Interfaces	3 x CAN (ISO 11898)
Connectors	ITT Canon Trident connector

Description

– Display: 5" QVGA digital true color TFT display

– Display resolution: 320 x 240 pixel

– Telltales: with the additional 28 outputs you can activate e. g. the function lights of the switches or control telltales

Display Controller MultiViu®Flex4 and 7.

The MultiViu®Flex4 and 7 are flexible solutions to display vehicle information to the driver. They are stand-alone display controllers as secondary instrumentation for the (vehicle) operator. The HMI control is realized by either touch surface or integrated push-buttons and a rotating actuator.

They are easily reprogrammable via USB interface with the MultiViu®Flex AppBuilder programming tool. They are suitable to fulfill multiple purposes due to several possible HMIs and are available in two size variants: 4.3 and 7" display.

Variant	MultiViu®Flex4				MultiViu®Flex7			
	Basic	Full T	Basic K	Full TK	Basic	Full T	Basic K	Full TK
Resistive touch screen		•		•		•		•
Keys and rotary			•	•			•	•
CAN	2	2	2	2	2	2	2	2
RS232	1	1	1	1	1	1	1	1
Analog / digital input	4	4	4	4	4	4	4	4
Digital output	3	3	3	3	3	3	3	3
Ethernet		1		1		1		1
Video input		1		1	1	3	1	3
USB full speed 2.0	1 on rear connector			2 on front and rear connector	1 on rear connector			2 on front and rear connector
Internal buzzer	•	•	•	•	•	•	•	•
Light sensor		•		•	•	•	•	•
RAM	128 MB	256 MB	128 MB	256 MB	128 MB	256 MB	128 MB	256 MB
Flash memory	512 MB	1 GB	512 MB	1 GB	512 MB	1 GB	512 MB	1 GB

Display Controller MultiViu®Flex4 and 7

MultiViu®Flex7

MultiViu®Flex4

Advantages at a glance

– Stand-alone display controller

– High resolution true color TFT display available in two sizes

– Offering different inputs / outputs and interfaces depending on customer requirements

– Easy HMI screen design via AppBuilder software tool

Specifications and features

Dimensions	4.3" / 7"
Operating voltage	12 V or 24 V
Operating temperature	- 40 °C ... + 75 °C
Protection degree	IP 65 and IP 67 (all sides)
Connectors	AMP connector

Description

– Illumination: control via light sensor, CAN or manually by menu settings

– Display: color TFT display

– Display resolution:
MultiViu®Flex4: 480 x 272 pixel
MultiViu®Flex7: 800 x 480 pixel

– HMI control: via buttons or touch

Software solutions.

The Continental software solutions allow the instrument clusters to be programmed and configured so as to perfectly fit any customer require- ments. Application programming can be done by customers, Continental or certified third parties. The continuous tool chains for application and HMI programming are fulfilling standards and using reliable existing software solutions. We offer regular software updates via our online platform KIBES® Center.

AppBuilder

AppBuilder is a configuration tool to program both Human Machine Interface and functional behaviour of the MultiViu®Flex4 or 7 display controllers. Deep personalization is possible by using any kind of graph- ics and pictures. Trouble shooting features for diag- nostics are also embedded into AppBuilder.

AppBuilder for MultiViu®Flex display controllers:

– Easy adaption of graphic elements by picking and dropping

– No complex software programming knowledge necessary

– Converter function to carry over an existing program to a different version of MultiViu®Flex

– Advanced simulation tool to check function behavior virtually

CGI Studio

CGI Studio is a professional software tool to create a premi- um HMI with high definition graphics. It is compatible to the MultiViu®Professional12 and is adapted to the KIBES®-32 software which controls the instrument cluster functionality and the graphical HMI. With CGI Studio you will receive brillant looking HMIs displayed with the MultiViu®Professional12.

CGI Studio for MultiViu®Professional12:

– Target dependent feature activation

– Reusable graphic elements (Composites)

– Time and curve editor for keyframe animations

– Multiple rendering modes

– Advanced graphic tools (e.g. shader editor, render time analysis)

KIBES®-32
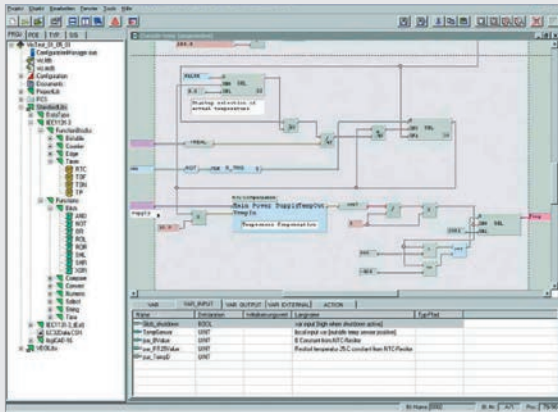
The KIBES®-32 software is used for creating the application program on a graphical level according to standard IEC 61131. It offers additional features like automatically generated documentation, an online and offline simulation, a comfortable configuration manager, download etc. A patch generator provides flexibility in module linking according to the vehicle functions. A quasi-multi-tasking operation supports the separation of time-critical and standard modules to run.

– Reduced development time

– Off-line simulation and on-line test

– Integrated version and revision management

grADI
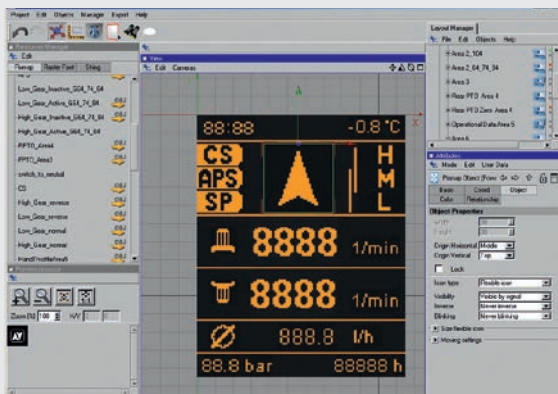
The grADI software is a tool for professional mask design. It is available for many commercial vehicle cluster products by Continental. It gives customers the possibility to create their own graphical HMI and to react with high flexibility to market demands.

– Supports screen design of dot-matrix and colored TFT displays until VGA resolution

– Fits seamlessly to the KIBES®-32 software tool

– Graphic objects are created by a common software tool like Adobe and can be easily imported into grADI

– Easy to control the generated graphical HMI benefiting from the interaction and integration between grADI and KIBES®-32

– Multi-language support for international applications

CAVTAN
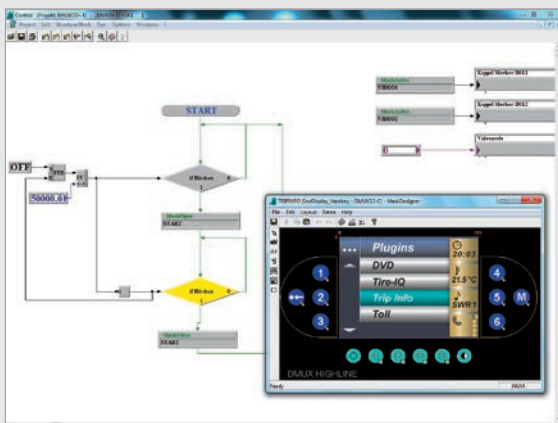
The CAVTAN software tool is used to design and control the HMI of DMUX3 used in driver's workplace, MOKI3 or as stand-alone. It gives customers the possibility to create their own graphical HMI and to react with a high flexibility to market demands.

– Preview of display objects

– Full graphical software tool chain

– Easy to learn and use

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The Future in Motion