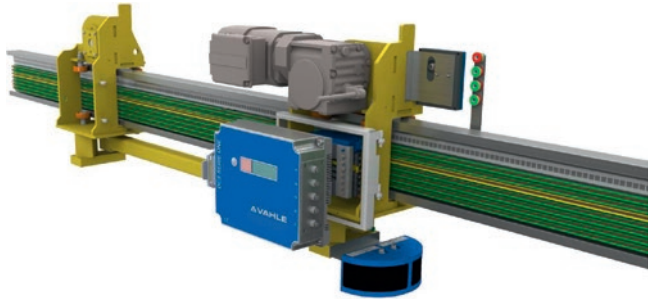




## vDRIVE – CONTROL SYSTEMS DCS1



## vDRIVE – KEY HIGHLIGHTS

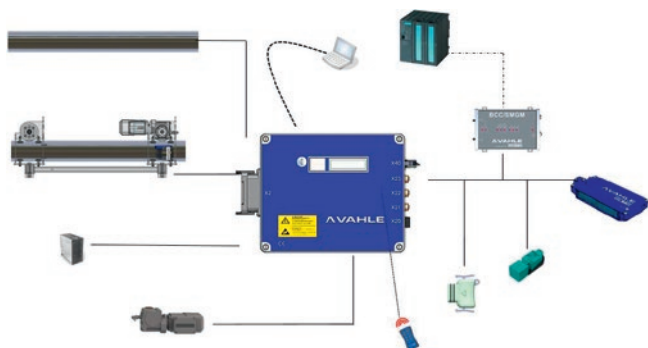


### SYSTEM

VAHLE vDRIVE system provides a wide range of power stages between 0.75 kW and 1.5 kW which offers a perfect match up for any Electrified Monorail System (EMS). Additionally, a wide range of I/O allows a maximum flexibility in any application. The vDRIVE portfolio also includes equipments for positioning, distance control and communication.

### COMMUNICATION

Communication between stationary and mobile consumers becomes a more important role in automated processes. VAHLE vDRIVE systems provide many different communication systems to ensure the best solution for your application. The options include the half wave bus, rail bus and VAHLE SMGM – the exclusive slotted microwave guide mini solution.



### CERTIFICATIONS

VAHLE vDRIVE fulfills all required standards and conforms to the "Low Voltage Directive", EMC requirements and specific test methods, and the Electromagnetic Compatibility Regulations.

## STATUS INFORMATIONEN

Every vDRIVE DCS system is delivered with a two row OLED display to offer an on demand status and further operational information. DC link voltage, actual current, temperature, frequency or communication stats can be called up at any time. For maintenance, a computer can be added via a USB connection to the control system. With the VAHLE vDRIVE EMS configurator, internal stored data and parameters can be read, rewritten or saved for monitoring.

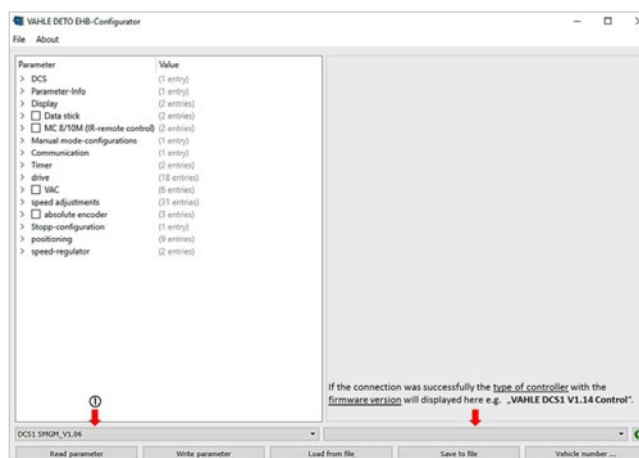


## MANUAL SERVICE

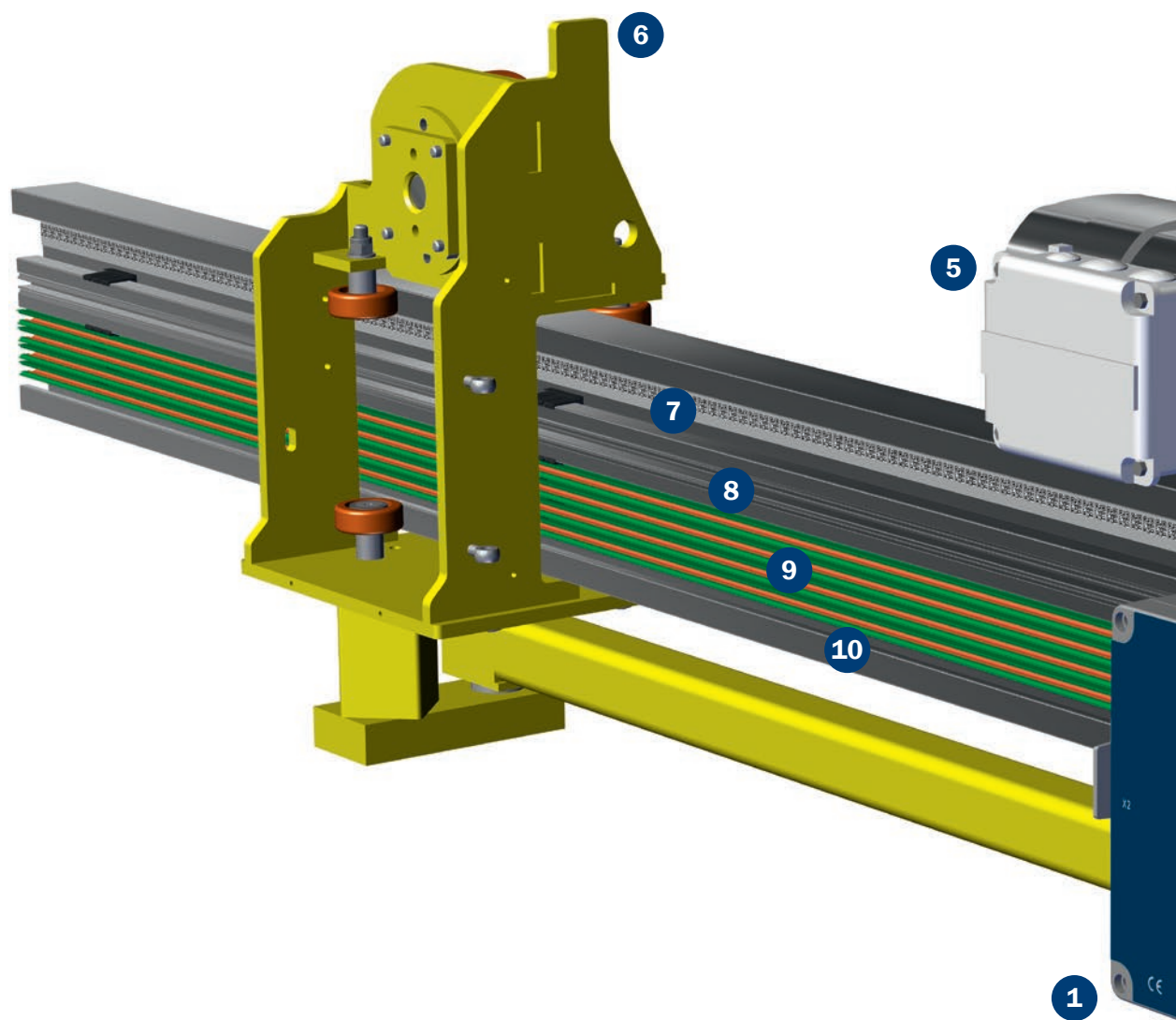
For convenient maintenance, VAHLE offers an exclusive infrared remote control. Developed for vDRIVE especially, the remote control enable a simple navigation to access any required internal information in a short amount of time.

## CONFIGURATOR

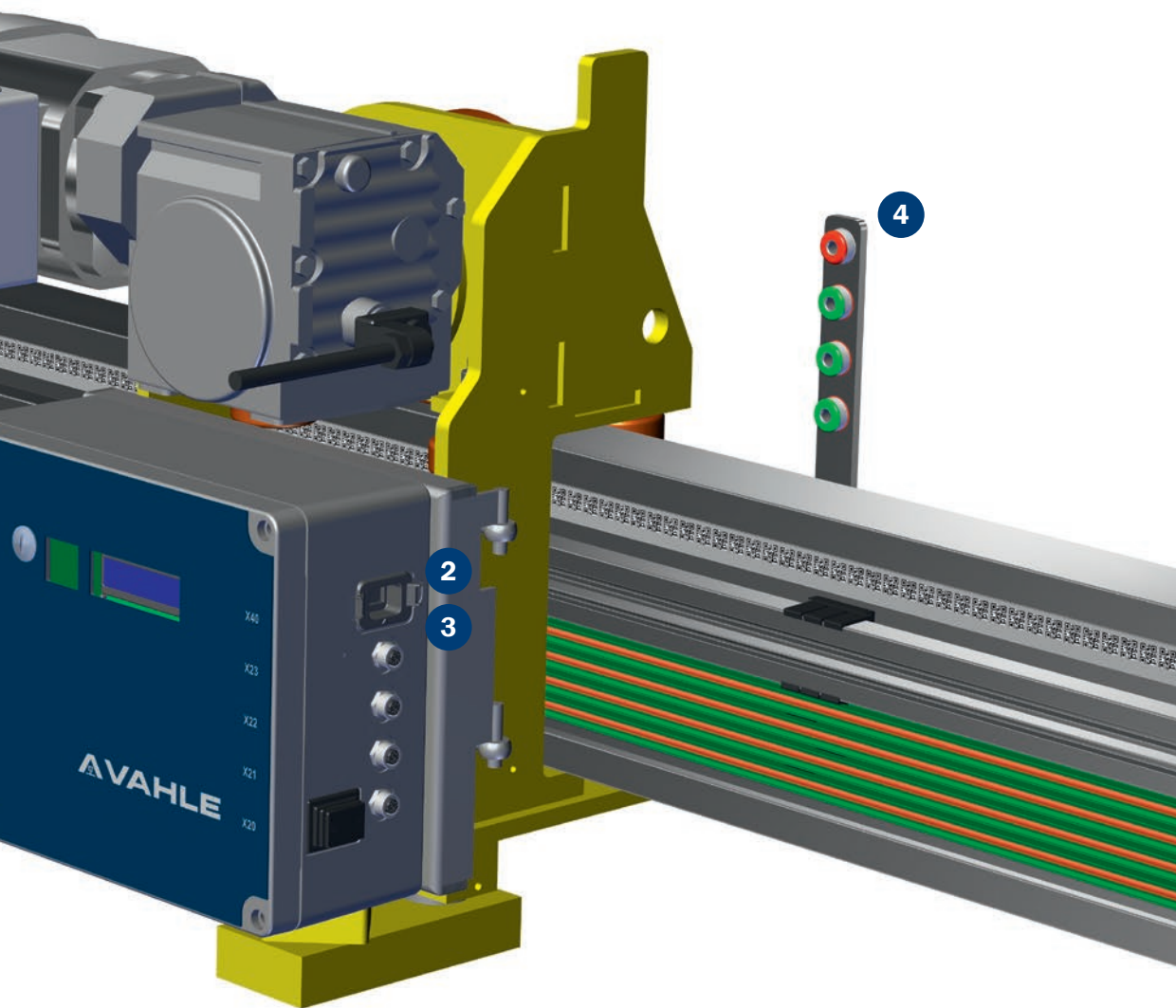
VAHLE vDRIVE EMS configurator program allows control and monitoring for complete system performance. Important system parameter, such as electrical information, motor speed, and stop configuration, can be read and adapted. Faults and interferences can be recorded, allowing fast diagnostics and solutions.



## vDRIVE – SYSTEM OVERVIEW

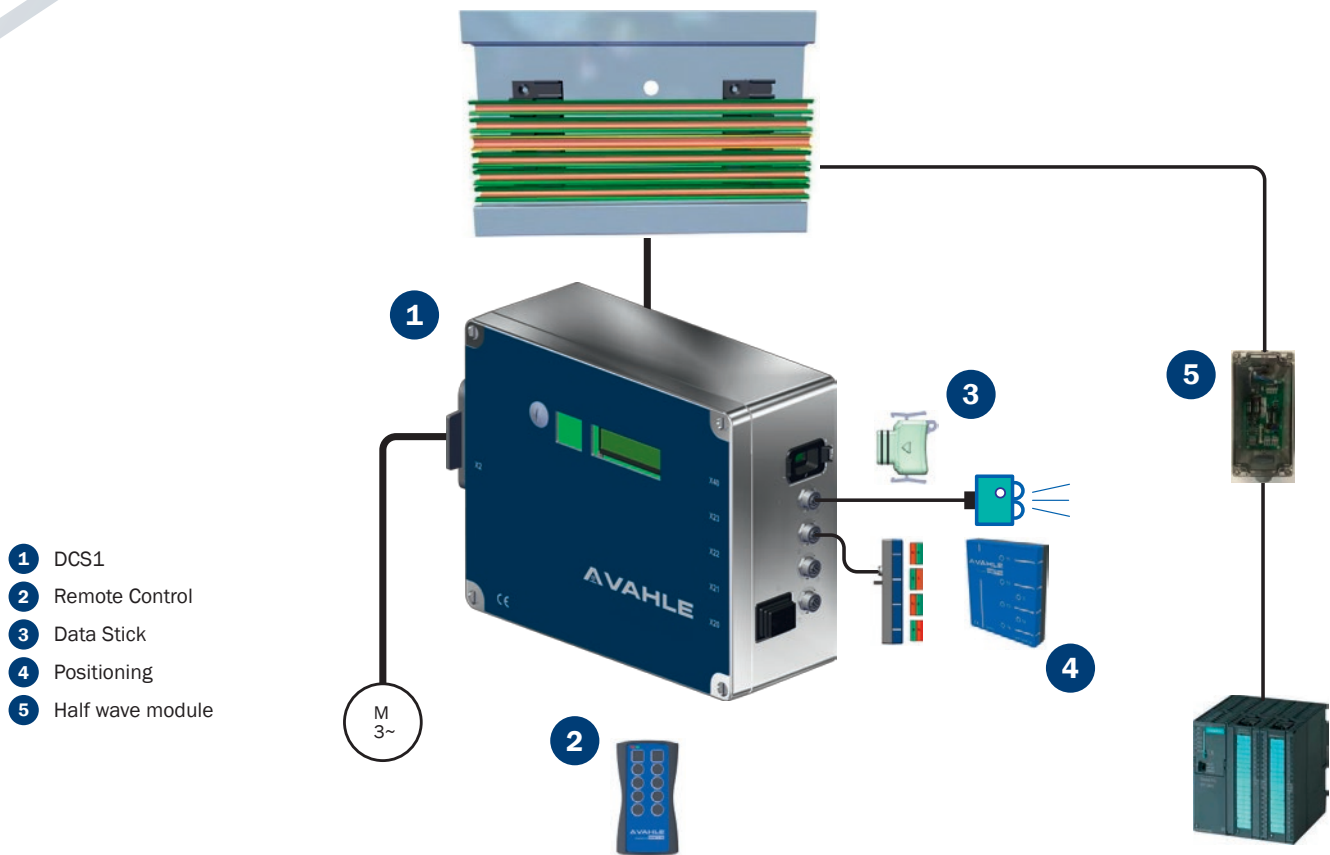


- 1 DCS1
- 2 APOS Optic Reading Head (underlying)
- 3 Railbus Collector (underlying)
- 4 Positioning
- 5 Motor\*
- 6 EMS Trolley\*
- 7 APOS Optic Codestrip
- 8 SMGM Profile
- 9 Electrical Monorail System U10
- 10 EMS Profile\*



# DCS1

## DCS1-HW – HALF WAVE COMMUNICATION



## RANGE OF PRODUCTS

| Description            |  | Order No. |
|------------------------|--|-----------|
| vDRI_DCS1-075-HW-02    | Control System with 0.75 kW frequency inverter and half wave communication | 10018098  |
| vDRI_DCS1-110-HW-02    | Control System with 1.1 kW frequency inverter and half wave communication  | 10018099  |
| vDRI_DCS1-150-HW-02    | Control System with 1.5 kW frequency inverter and half wave communication  | 10018100  |
| vDRI_IC-CC-C V1.1      | Curve Block Control System / 400VAC / 1x Inlet / 1x Exit                   | 10011374  |
| vDRI_IC-SB-D-V2.1L-400 | Separating block / Version 1 / Full cycle interface / 400VAC               | 10023036  |
| vDRI_IC-SB-D-V2.1L-480 | Separating block / Version 1 / Full cycle interface / 480VAC               | 10023037  |
| vDRI_IC-SB-D-V2.2L-400 | Separating block / Version 2 / Fault negative half cycle / 400VAC          | 10023038  |
| vDRI_IC-SB-D-V2.2L-480 | Separating block / Version 2 / Fault negative half cycle / 480VAC          | 10023040  |
| vDRI_IC-SB-D-V2.4L-400 | Separating block / Version 4 / Fault potential-free contact / 400VAC       | 10022742  |
| vDRI_IC-SB-D-V2.4L-480 | Separating block / Version 4 / Fault potential-free contact / 480VAC       | 10023042  |
| vDRI_MC8/10M           | Remote Control for DCS   | 0777006   |
| vDRI_DS-VD             | Data Stick for DCS   | 10010330  |
| vDRI_EMD4P             | Positioning  | 0777004   |
| vDRI_IC-HW-1K          | Half wave module stationary  | 10010345  |



## TECHNICAL DATA

### ELECTRICAL DATA

|                                    |   |
|------------------------------------|---|
| Nominal power .....                | 0.75 kW/1.1 kW/1.5 kW                           |
| Supply voltage .....               | 400 ... 480 VAC $\pm 10\%$<br>3 phase symmetric |
| Supply net system .....            | TT, TN (grounded neutral)                       |
| Inrush current peak .....          | 6 A   |
| Supply frequency .....             | 45 ... 65 Hz                                    |
| Output current nominal .....       | 1.8 A/2.6 A/3.5 A                               |
| Output current peak (60s) .....    | 3.0 A/4.0 A/5.0 A                               |
| Output frequency .....             | 0 ... 120 Hz                                    |
| Power loss .....                   | 22 W/40 W/60 W                                  |
| Auxiliary (external Sensors) ..... | 24 VDC, $\pm 10\%$ , 0.5 A                      |
| Nominal voltage break .....        | 185 VDC   |
| Maximum current break .....        | 0.5 ADC   |

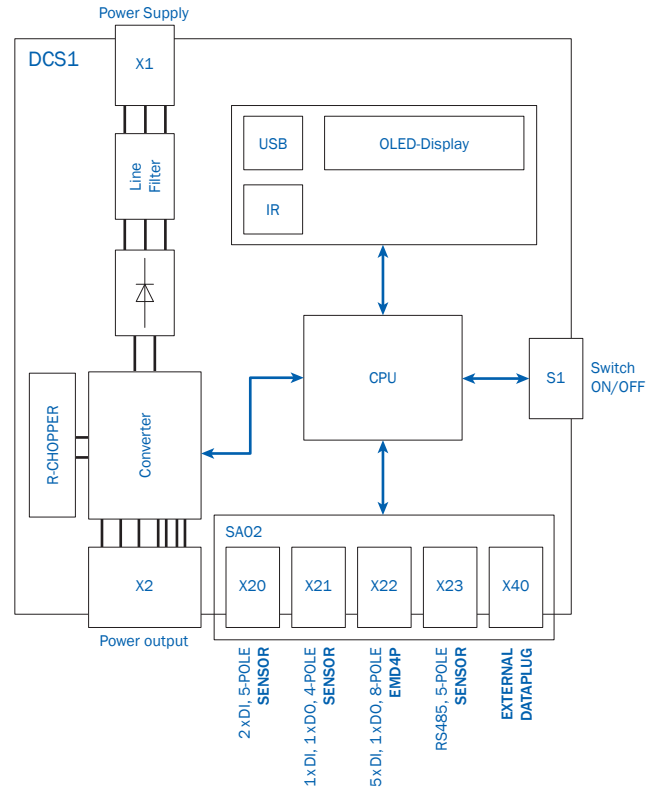
### MECHANICAL DATA

|                           |  |
|---------------------------|--|
| Dimension* .....          | 280 x 230 x 110 mm   |
| Ambient temperature ..... | 0 ... +40 °C non-condensing  |
| Shock .....               | 3M4  |
| Vibration .....           | 7M2  |
| Environment .....         | General industrial   |
| Cooling .....             | Convection   |
| Protection rating .....   | 3K3 (-10 ... +45 °C) @ 100 % duty<br>3K3 (-0 ... +50 °C) @ 70 % duty |
| Connection power X1 ..... | VAHLE connector  |
| Connection motor X2 ..... | HAN10B, 10-pole+PE   |
| Adapter for I/O .....     | SA02   |

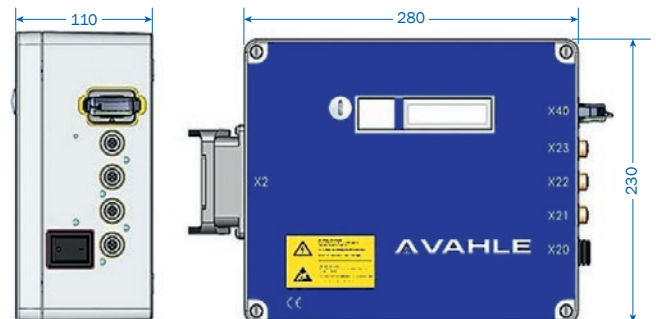
### COMMUNICATION DATA

|                                     |                   |
|-------------------------------------|-------------------|
| Broadcast .....                     | Conductor bar     |
| Technology .....                    | Coal              |
| Absolute address participant .....  | n/a               |
| Max. participants/segment .....     | n/a               |
| Data rate .....                     | n/a               |
| Transmission .....                  | n/a               |
| Fieldbus mobile .....               | n/a               |
| Equipment (stationery/mobile) ..... | Integrated in DCS |
| Positioning .....                   | EMD4P             |

## BLOCK DIAGRAM



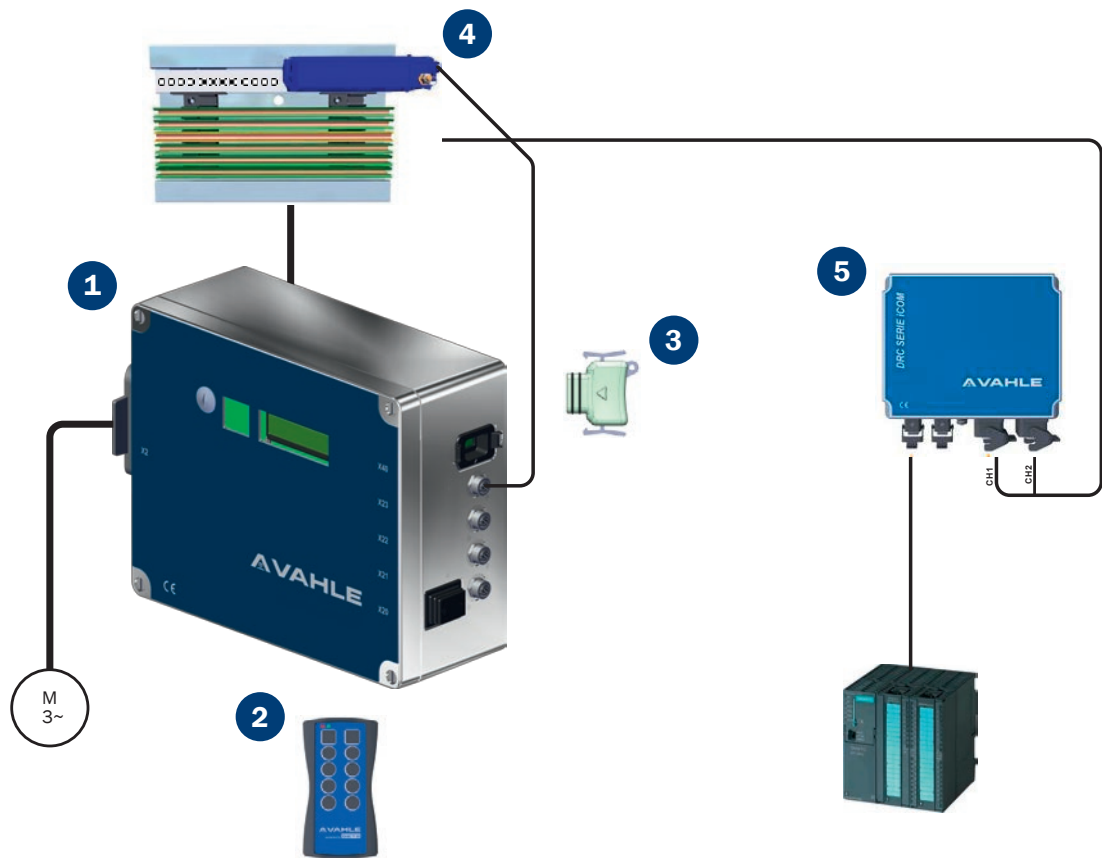
## DIMENSIONS



\* Please notice the different dimensions of DCS with 1.5 kW nominal power: 280 x 230 x 140 mm.

# DCS1

## DCS1-RB – RAILBUS



- 1 DCS1
- 2 Remote Control
- 3 Data Stick
- 4 APOS optic
- 5 Railbus Module

## RANGE OF PRODUCTS

| Description                  |   | Order No. |
|------------------------------|---|-----------|
| vDRI_DCS1-075-RB-02          | Control System with 0.75 kW frequency inverter and half railbus communication | 10018095  |
| vDRI_DCS1-110-RB-02          | Control System with 1.1 kW frequency inverter and half railbus communication  | 10018096  |
| vDRI_DCS1-150-RB-02          | Control System with 1.5 kW frequency inverter and half railbus communication  | 10018097  |
| vDRI_IC-SB-D-V2.3L-400       | Separating block / Version 3 / Fault potential-free contact / 400 VAC         | 10021605  |
| vDRI_IC-SB-D-V2.3L-480       | Separating block / Version 3 / Fault potential-free contact / 480 VAC         | 10023041  |
| vDRI_MC8/10M                 | Remote Control  | 0777006   |
| vDRI_DS-VD                   | Data Stick  | 10010330  |
| APOS Optic                   | See vPOS catalogue  |           |
| vDRI_IC-PCB-2k-PN            | Railbus Module Stationary   | 10011521  |
| vDRI_Functionbloc/TIA_Portal | Option  |           |



## TECHNICAL DATA

### ELECTRICAL DATA

|                                    |   |
|------------------------------------|---|
| Nominal power .....                | 0.75 kW/1.1 kW/1.5 kW                           |
| Supply voltage .....               | 400 ... 480 VAC $\pm 10\%$<br>3 phase symmetric |
| Supply net system .....            | TT, TN (grounded neutral)                       |
| Inrush current peak .....          | 6 A   |
| Supply frequency .....             | 45 ... 65 Hz                                    |
| Output current nominal .....       | 1.8 A/2.6 A/3.5 A                               |
| Output current peak (60s) .....    | 3.0 A/4.0 A/5.0 A                               |
| Output frequency .....             | 0 ... 120 Hz                                    |
| Power loss .....                   | 22 W/40 W/60 W                                  |
| Auxiliary (external Sensors) ..... | 24 VDC, $\pm 10\%$ , 0.5 A                      |
| Nominal voltage break .....        | 185 VDC   |
| Maximum current break .....        | 0.5 ADC   |

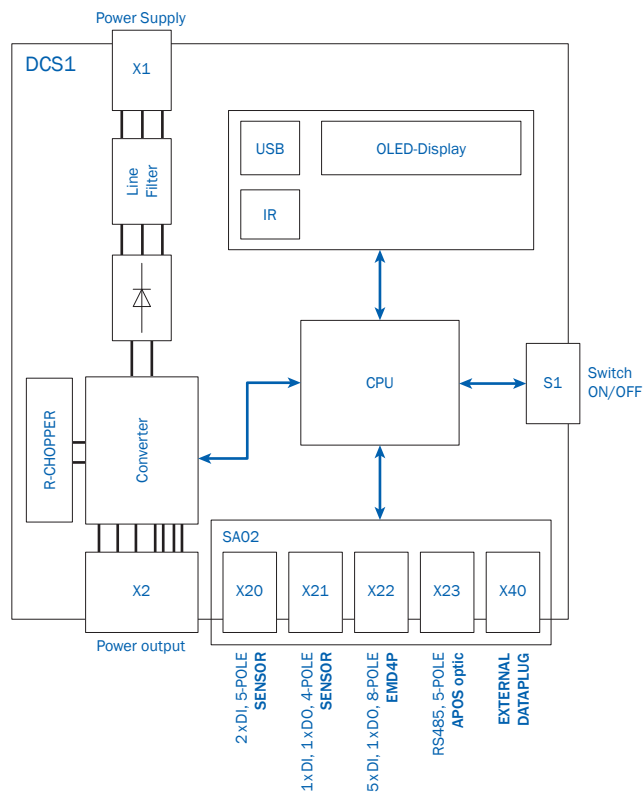
### MECHANICAL DATA

|                           |  |
|---------------------------|--|
| Dimension* .....          | 280 x 230 x 110 mm   |
| Ambient temperature ..... | 0 ... +40 °C non-condensing  |
| Shock .....               | 3M4  |
| Vibration .....           | 7M2  |
| Environment .....         | General industrial   |
| Cooling .....             | Convection   |
| Protection rating .....   | 3K3 (-10 ... +45 °C) @ 100 % duty<br>3K3 (-0 ... +50 °C) @ 70 % duty |
| Connection power X1 ..... | VAHLE connector  |
| Connection motor X2 ..... | HAN10B, 10-pole+PE   |
| Adapter for I/O .....     | SA02   |

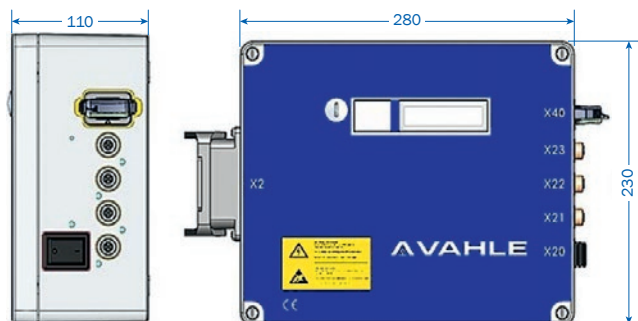
### COMMUNICATION DATA

|                                     |                   |
|-------------------------------------|-------------------|
| Broadcast .....                     | Conductor bar     |
| Technology .....                    | Coal              |
| Absolute address participant .....  | n/a               |
| Max. participants/segment .....     | n/a               |
| Data rate .....                     | n/a               |
| Transmission .....                  | n/a               |
| Fieldbus mobile .....               | n/a               |
| Equipment (stationery/mobile) ..... | Integrated in DCS |
| Positioning .....                   | APOS Optic        |

## BLOCK DIAGRAM



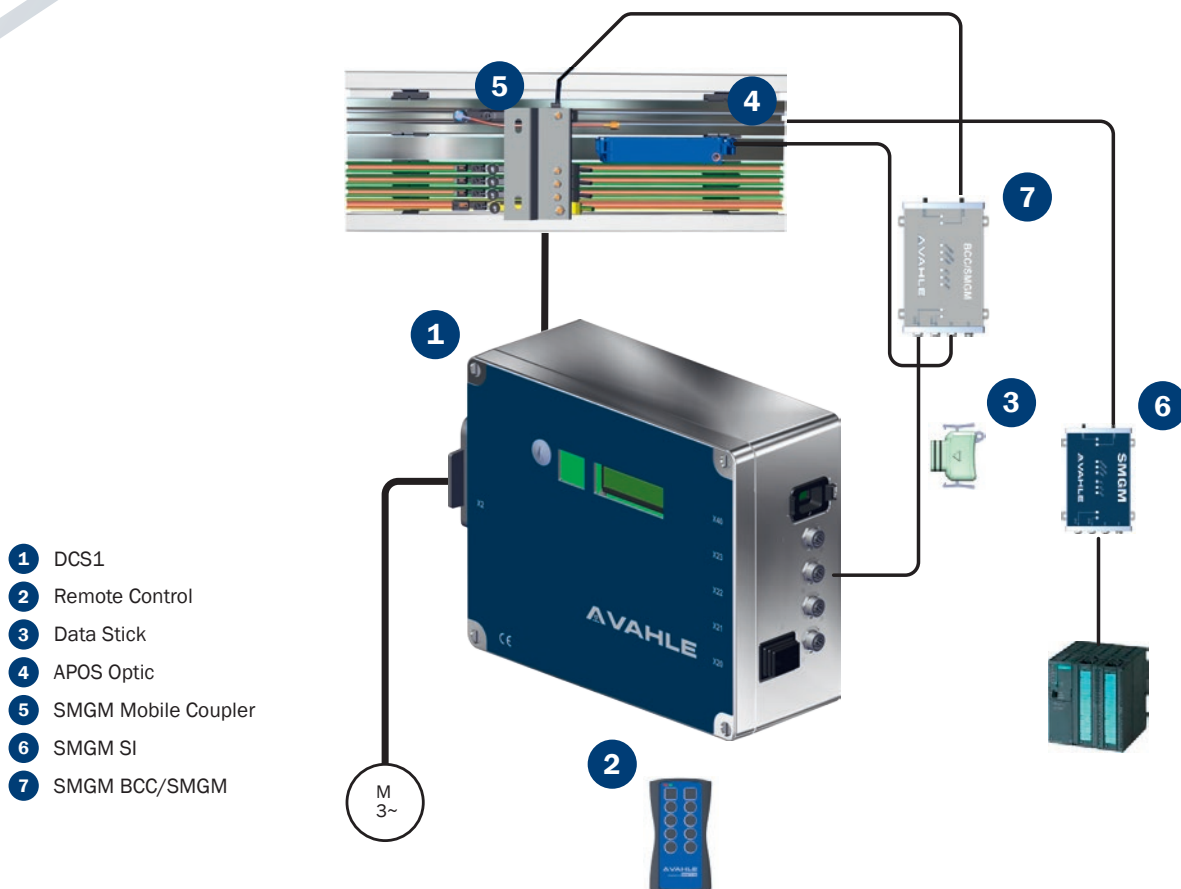
## DIMENSIONS



\* Please notice the different dimensions of DCS with 1.5 kW nominal power: 280 x 230 x 140 mm.

## DCS1

### DCS1-SMGM – SLOTTED GUIDED MICROWAVE MINI



## RANGE OF PRODUCTS

| Description           |   | Order No. |
|-----------------------|---|-----------|
| vDRI_DCS1-075-SMGM-06 | Control System with 0.75 kW frequency inverter and SMGM communication | 10018101  |
| vDRI_DCS1-110-SMGM-06 | Control System with 1.1 kW frequency inverter and SMGM communication  | 10018102  |
| vDRI_DCS1-150-SMGM-06 | Control System with 1.5 kW frequency inverter and SMGM communication  | 10018103  |
| vDRI_MC8/10M          | Remote Control  | 0777006   |
| vDRI_DS-VD            | Data Stick  | 10010330  |
| APOS Optic            | See vPOS catalogue  |           |
| SMGM                  | See vCOM catalogue  |           |

## TECHNICAL DATA

### ELECTRICAL DATA

|                                     |  |
|-------------------------------------|--|
| Nominal power .....                 | 0.75 kW/1.1 kW/1.5 kW                      |
| Supply voltage .....                | 400 ... 480 VAC ±10 %<br>3 phase symmetric |
| Supply net system .....             | TT, TN (grounded neutral)                  |
| Inrush current peak .....           | 6 A  |
| Supply frequency.....               | 45 ... 65 Hz                               |
| Output current nominal.....         | 1.8 A/2.6 A/3.5 A                          |
| Output current peak (60s) .....     | 3.0 A/4.0 A/5.0 A                          |
| Output frequency .....              | 0 ... 120 Hz                               |
| Power loss.....                     | 22 W/40 W/60 W                             |
| Auxilliary (external Sensors) ..... | 24 VDC, ±10 %, 0.5 A                       |
| Nominal voltage break.....          | 185 VDC                                    |
| Maximum current break .....         | 0.5 ADC                                    |

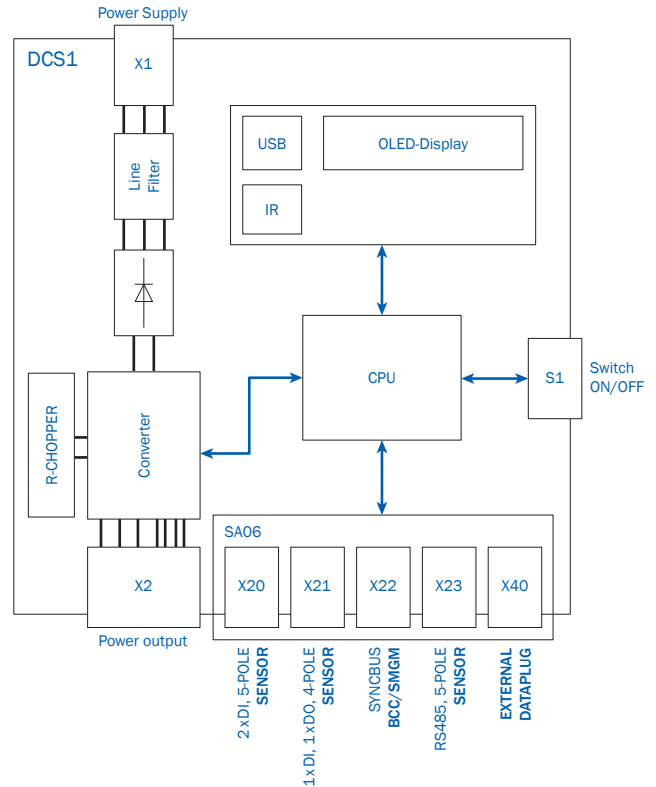
### MECHANICAL DATA

|                           |  |
|---------------------------|--|
| Dimension* .....          | 280 x 230 x 110 mm   |
| Ambient temperature.....  | 0 ... +40 °C non-condensing  |
| Shock .....               | 3M4  |
| Vibration.....            | 7M2  |
| Environment .....         | General industrial   |
| Cooling .....             | Convection   |
| Protection rating.....    | 3K3 (-10 ... +45 °C) @ 100 % duty<br>3K3 (-0 ... +50 °C) @ 70 % duty |
| Connection power X1.....  | VAHLE connector  |
| Connection motor X2 ..... | HAN10B, 10-pole+PE   |
| Adapter for I/O.....      | SA06   |

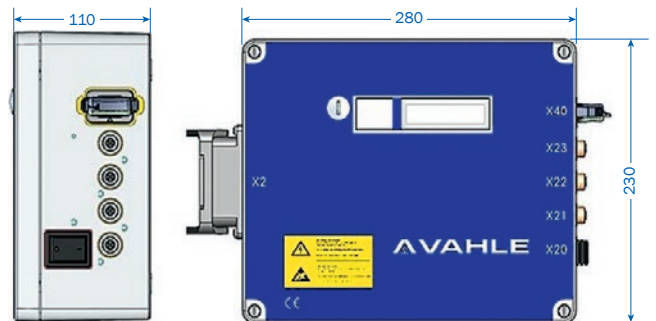
### COMMUNICATION DATA

|                                    |                   |
|------------------------------------|-------------------|
| Broadcast .....                    | Slotted waveguide |
| Technology .....                   | Reading head      |
| Absolute adress participant .....  | n/a               |
| Max. participants/segment.....     | n/a               |
| Data rate.....                     | n/a               |
| Transmission .....                 | n/a               |
| Fieldbus mobile.....               | n/a               |
| Equipment (stationery/mobile)..... | Integrated in DCS |
| Positioning .....                  | APOS Optic        |

## BLOCK DIAGRAM



## DIMENSIONS



\* Please notice the different dimensions of DCS with 1.5 kW nominal power: 280 x 230 x 140 mm.



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