Re-wiring engine panels

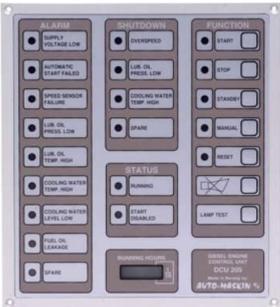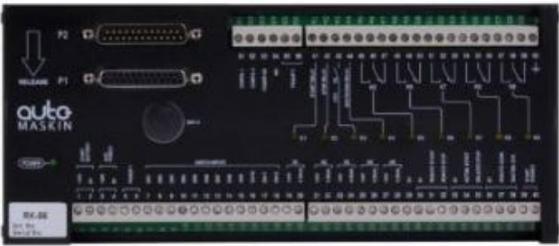## From DCU 205 to DCU 305 R3 (LT)

Introduction

It is easy to rewire from an existing installation that uses the DCU 205 engine panel to the newer DCU 305 R3 (LT).

This document outlines the necessary steps for a successful transfer. It should however not be seen as a complete guide.

Careful consideration must be taken with all wiring changes and all new sensor configurations.

Carefully consult the installation manual for the DCU 305 R3 (LT).

DCU 205	DCU 305 R3 (LT)
DCU 205 C1 Wire terminal unit	*RK-66 Interface Module*

Wiring Changes

The three rightmost columns advise wiring and configuration in the
DCU 305 R3 (LT) panel.

Note! The number in parenthesis ( ) reference the components 0V wire terminal reference.

DCU 205 Wire unit reference	DCU 305 RK-66 Interface ref.	Description and comments	Configuration tip
1	1	24 VDC supply from start bat.	Configure low voltage setting to 23.2 V
2	2	0 VDC supply from start bat.	
39	3	24 VDC aux supply	If available
40	4	0 VDC aux supply	
3	5	Connect the two wires from the MPU to wire terminals 5 and 6.	Configure the correct flywheel teeth count
4	6		
5	7	Shutdown switch 1	Configure all these as NO (normally open) contacts.
6	8	Shutdown switch 2	If the wire break detection feature is selected, then add a 10k resistor across the switch.
7	9	Shutdown switch 3	All *pressure* sensors shall be configured with "On run only".
N/A	10	Shutdown switch 4	All sensors shall be referenced to terminal 29[1] (0V).
N/A	11	Shutdown switch 5	Channels not used for shutdown can be configured and used as alarm channels.
N/A	12	Shutdown switch 6	
12	13	Alarm switch 1	Configure all these as NC (normally closed) contacts.
13	14	Alarm switch 2	All *pressure* sensors shall be configured with "On run only".
14	15	Alarm switch 3	All sensors shall be referenced to terminal 29 (0V).
15	16	Alarm switch 4	
16	17	Alarm switch 5	
17	18	Alarm switch 6	

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[1] Make a block of wire terminals labelled 29.

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40	29	The common 0V wire terminal. Reference all alarm- and shutdown switches here.	
19 (18)	31 (30)	Remote Start	Configure pre-glow or pre-lube as needed.
20 (18)	32 (30)	Remote Stop	
22 (21)	34 (33)	Automatic Start input	Note that the DCU 305 panel must be in Standby mode for these inputs to be enabled. The time before the stop sequence activates can be configured.
23 (21)	35 (33)	Automatic Stop input	
8	41	Crank output. 24 VDC output to auxiliary relay.	
9	42	Stop output. 24 VDC output to auxiliary relay.	
10	43	Energize to Run. This 24 VDC channel is active when the engine shall run.	
11	44	Emergency Stop. 24 VDC output to auxiliary relay.	
26-25-24	45-46-47 Relay K5	Common Alarm relay ■ Active if no alarm ■ Inactive if alarm	
35-36	51-52	Disconnect Gen. Breaker	Configure to relay K7.
34-33	54-55	Ready for Power Management Start. Relay K8 is pre-configured for this.	
27-28-29	57-58	Running State" Heter det i Rudolf	Configure to relay K9.

Magnetic Pickup Unit

The DCU 305 R3 must have an RPM-signal from a magnetic pick-up, preferably installed on the flywheel. The pickup used on the DCU 205 may be used with the DCU 305 R3 (LT).

Example Configuration

Below is an example of configuration of a switch channel, made in the Rudolf R3 configuration software for the DCU 305 R3 (LT), for the Autostop channel Oil Press.

The sensor wires shall be moved from wire terminals 5 (40) on the DCU 205, to terminals 7 (29) on the DCU 305 R3 (LT) panel. Terminal 7 is the switch channel #1 input, and terminal 29 is the 0 V reference for the sensor.
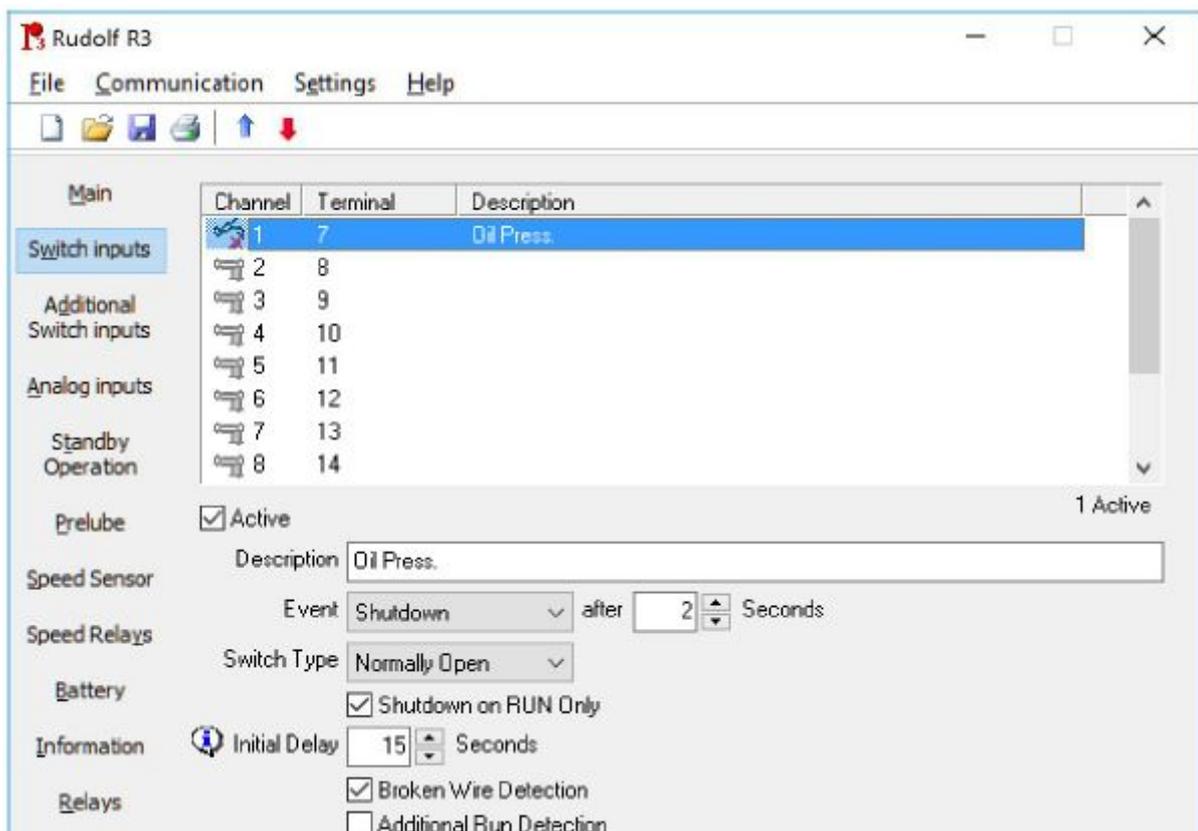
Note! The Broken Wire Detection option requires a 10k ohm ¼ watt resistor installed over the normally open (NO) switch.

Configuration Software

The Rudolf R3 configuration software can be downloaded here.
https://www.auto-maskin.com/prod/rudolf-configuration-software-dcu-305