

Pos.	Identification	Description	Art. no.	Note
X1, X2, Y1, Y2, Z1, Z2	DSQC 663	Main Drive Unit MDU-790A	3HAC029818-001	
X3	DSQC 664	Additional drive unit ADU-790A	3HAC030923-001	For first additional axis
Y3	DSQC 664	Additional drive unit ADU-790A	3HAC030923-001	For second additional axis
Z3	DSQC 664	Additional drive unit ADU-790A	3HAC030923-001	For third additional axis

* IRB 8700 uses two ADU, in addition to the MDU, for the robot. Therefore, only one ADU can be used for an additional axis.

Drive unit connection

The following table shows the drive unit connection for each drive unit when using configuration template files for standalone axes.

When using a template file, a power stage is connected to a physical output. The label of this output in the electrical circuit diagram is shown in the column "Designation in circuit diagram".

Main Drive Unit	Template file name (drive unit name) ⁱ	Power stage	Designation in circuit diagram ⁱⁱ
MDU-430C DSQC 431 Used in IRC5 Compact for IRB 120	M1 (DMX)	INV_14_20	M3 (U,V,W)
	M2 (DMX)	INV_14_20	M1 (U,V,W)
	M3 (DMX)	INV_6_8	M6 (U,V,W)
	M4 (DMX)	INV_6_8	M4 (U,V,W)
	M5 (DMX)	INV_14_20	M2 (U,V,W)
	M6 (DMX)	INV_6_8	M5 (U,V,W)
MDU-430A DSQC 406 Used for IRB 120, 140	M1 (DMX)	INV_14_20	M3 (U,V,W)
	M2 (DMX)	INV_14_20	M1 (U,V,W)
	M3 (DMX)	INV_6_8	M6 (U,V,W)
	M4 (DMX)	INV_6_8	M4 (U,V,W)
	M5 (DMX)	INV_14_20	M2 (U,V,W)
	M6 (DMX)	INV_6_8	M5 (U,V,W)
MDU-430A DSQC 406 Used for IRB 1400, 1520, 1600	M1 (DMX)	INV_14_20	M1 (U,V,W)
	M2 (DMX)	INV_14_20	M2 (U,V,W)
	M3 (DMX)	INV_6_8	M4 (U,V,W)
	M4 (DMX)	INV_6_8	M6 (U,V,W)
	M5 (DMX)	INV_14_20	M3 (U,V,W)
	M6 (DMX)	INV_6_8	M5 (U,V,W)
MDU-430A DSQC 406 Used for IRB 360, 390	M1 (DMX)	INV_14_20	M2 (U,V,W)
	M2 (DMX)	INV_14_20	M1 (U,V,W)
	M3 (DMX)	INV_14_20	M3 (U,V,W)
	-	-	-
	M5 (DMX)	INV_6_8	M4 (U,V,W)
	-	-	-

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9.3 Drive units

9.3 Drive units

Overview

A Main Drive Unit (MDU) consists of 6 power stages.

An Additional Drive Unit (ADU) consists of one power stage.

Additional axes in combination with a low voltage Main Drive Unit, requires an Additional Rectifier Unit (ARU) to supply the Additional Drive Units.

Drive Unit voltage

The following table describes the input voltage and the Dc-bus voltage for the different drive units. See also [Requirements for high voltage motors on page 161](#).

Drive Unit Type	Output voltage to motor (V_{rms}) a)	Max dc bus voltage (V_{rms})
MDU-430A DSQC 406	- nominal 234 V - min 198 V	430 V
MDU-790A DSQC 663 for IRB 2400, 2600, 4400	- nominal 234 V - min 198 V	430 V
ARU-430A DSQC 417	- nominal 234 V - min 198 V	430 V
ADU-790A DSQC 664 for IRB 2400, 2600, 4400	- nominal 234 V - min 198 V	430 V
MDU-790A DSQC 663 for IRB 4600, 660, 66XX, 7600	- nominal 430 V - min 320 V	790 V
ADU-790A DSQC 664 for IRB 4600, 660, 66XX, 7600	- nominal 430 V - min 320 V	790 V

a) defined as line to line.

Drive Unit Current

The following table describes the current for the different power stages. For a list of which power stages are used by which drive unit, see [Drive unit connection on page 151](#).

Power stage	Rated current (A_{rms}) a)	Time limited current (A_{rms}) b)	Max current (A_{rms}) c)	Time limit for max current (s) d)
INV_6_8	6.0	8.25	8.3	unlimited
INV_14_20	13.5	17.4	19.6	30
INV_17_26	17	23	26	10
INV_31_54	31	48	54	8
INV_30_55	30	39	55	3

a) Max current for zero speed in indefinite time.

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