



CERTIFICATIONS FOR THE NORTH AMERICAN MARKET

What is UL/CSA?

UL (Underwriters Laboratories) and CSA (Canadian Standards Association) are independent standards organizations from the USA and Canada. They verify that the safety standards and regulations that apply in the USA and Canada are met by our HIMMEL[®]-motors. By means of this certification,

we guarantee full compliance with all legally relevant regulations required for the delivery of our products to the USA or Canada.

CSA or UL Mark?

Both organizations signed a „Memorandum of Understanding“. This means that tests, inspections and certificates according to the North American standard will be mutually recognized. Therefore HIMMEL[®] technologies has decided to continue to focus on universal cCSAus engine certifications.

Your advantages

- Delivery of our HIMMEL[®]-motors to the USA or Canada possible
- Simplified testing and acceptance of the machines at the customer's site
- Unlimited market success with our HIMMEL[®]-motors

	Target market			
		USA	Canada	USA & Canada
Certification body	UL	The UL Mark is used by the American testing laboratory for the US market	The cUL Mark applies to the Canadian market. Here, there is a „c“ to the left of the logo.	The cULus Mark is approved for the USA and Canadian market by the American test center
	CSA	The CSAus Mark is used by the Canadian testing agency for the US market	The CSA Mark is awarded for the Canadian market by the Canadian testing agency	The cCSAus Mark has been approved for the USA and Canadian market by the Canadian testing laboratory

Our certifications

Our motors are equipped with the following test marks:

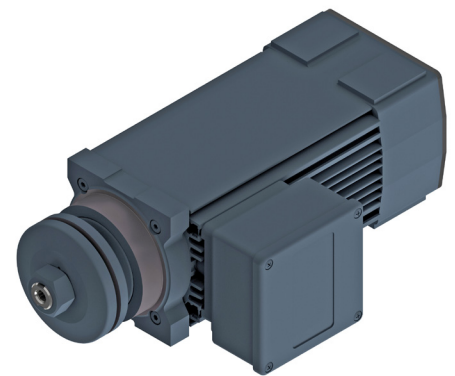




I HIMMEL[®]-MOTORS WITH cCSAus /CSA DESIGN

Flat motors

Type	Number of poles	Power [kW]	Frequency [Hz]	Max. revolution rotation [1/min]
with cCSAus acceptance				
K55	2	0,6 - 4,0	87 - 150	9.000
K75	2	3,0 - 24	87 - 100	6.000
K75	4	1,6 - 15	87 - 200	
K90	2	7,0 - 36	87 - 100	
K90	4	5,5 - 30	87 - 200	
with CSA acceptance				
K62	2	1,0 - 4,6	50 - 120	7.200
K62	4	0,37 - 2,6	50 - 120	3.600
K75	2	3,0 - 11	50 - 120	7.200
K75	4	1,5 - 11	50 - 120	3.600



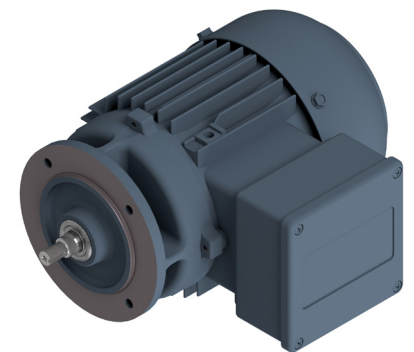
Example Illustration

Gear motors

Type	Power [kW]	Frequency [Hz]
with CSA acceptance		
BG132 - BG200	up to 37	50 - 60

Gear motors type H NEW

Type	Number of poles	max. Power [kW]	Frequency [Hz]	Max. revolution rotation [1/min]
with cCSAus acceptance				
H71/M1	2 - 12	2,20	0 - 87	3.600
H80	2 - 8	2,20		
H90	2 - 6	5,20		
H100	2 - 6	8,10		
H112	2 - 6	10,5		



Example Illustration

Operating modes:

- Depending on the design S1, S3-75%, S3-60%, S3-40%

Designs:

- TEFC (self-ventilated), TEBC (forced-ventilated), TENV (non-ventilated)

- Brake attachment with different options
- Encoder attachment

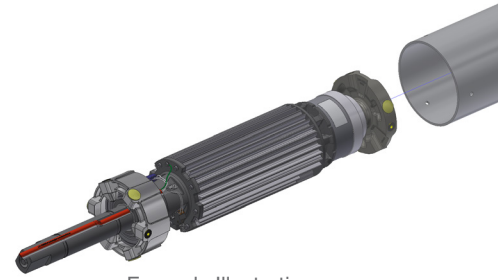




HIMMEL[®]-MOTORS WITH cCSAus /CSA DESIGN

SLP 150 Cartridge Motor **NEW**

Type	Number of poles	Max. Power [kW]	Frequency [Hz]	Max. revolution rotation [1/min]
with cCSAus acceptance				
HS71	2	1,3	0 - 50	3.000
	4	1,73	0 - 100	
	6	0,9		2.000



Example Illustration

Operating modes:

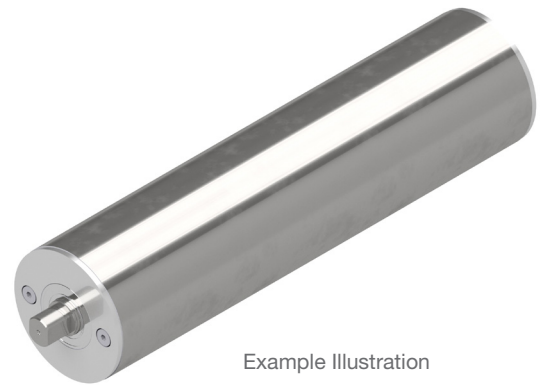
- Depending on design S1, S3-40%

Designs:

- With cable preassembled
- Brake attachment with different options
- Long life version LL
- Coldclima CC
- Emergency open EO
- Different speed ranges through different gear ratios
- For installation in door shafts
- Diameter range from $\varnothing 148\text{mm}$ to $\varnothing 156\text{mm}$

Drum motors

Type	Max. Power [kW]	Min. to max. length [mm]	Max. thickness of the rubber cover
with cCSAus acceptance			
TM60.1	0,08	355 - 800	No reference
TM82.1	0,12	200 - 800	up to 8 mm
TM111.1 / TM113.1	0,55	260 - 800	up to 10 mm
TM138.1	1	300 - 1.350	up to 14 mm
TM165.1	up to 2	400 - 1.300	up to 15 mm



Example Illustration

Designs:

- With cable preassembled
- Brake installation
- Steel, aluminium or stainless steel
- Various rubber covers/coatings

Further versions and information on request.

