Robot Identification Number (RIN)

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The number is designed for a worldwide usage. It has been designed to be a robust and long-term solution for robot manufacturers.

Main features: it is unique, includes a serial number, identifies robots for manufacturers. It also informative for consumers unlike e.g. Vehicle Identification Number VIN or proprietary codes.

There is a mandatory checksum to be used and it helps to avoid typing and OCR errors.

It is defined to be easy to read, write and check. It includes version information, so it is possible to revised the standard later on.

RIN Version A

D	Type	Description	
3	[A-Z]	Country Code SO_3166-1_alpha-3	https://en.wikipedia.org/wiki/ISO_3166-1_alpha-3
4	[0-9A-Z]\[IOQ]	Manufacturer identifier	35^4 = over 1,5 million manufacturers per country. Numbers and capital letters except I, O and Q!
6	[0-9A-Z]\[IOQ]	Robot attributes	35^6, manufacturer may use this as they like, e.g. identify platform, type and body style. Numbers and capital letters except I, O and Q!
2	[0-9]	Model Year	Last two numbers of the model year
2	[0-9]	Model Month	
2	[0-9]	Model Day	
3	[0-9A-Z]\[IOQ]	Plant code	Numbers and capital letters except I, O and Q!
6	[[0-9]	Sequential number	The serial number. Manufacturer may decide how to use.
1	[A-Z]\[IOQ]	RIN version code	Capital letters except I, O and Q!
2	[0-9A-F]	Checksum	Calculate **CheckSum8 Modulo 256** using formula: Sum of Bytes % 256. (Hexa)

Valid RIN codes (actually the very first four RIN numbers issued):

RIN	Owner
FIN0001PULUM1180115001000001A85	The very first RIN! Owner of the robot is University of Helsinki
FIN0001PULUM1180115001000002A86	Owner of the robot is University of Helsinki
FIN0001PULUM1180115001000003A87	Owner of the robot is Tampere University of Technology
FIN0001PULUM1180115001000004A88	Owner of the robot is Tampere University of Technology

Validate the checksum

You may use validators e.g. https://www.scadacore.com/tools/programming-calculators/online-checksum-calculator/
Add the RIN without the last two digits to ASCII field e.g. "FIN0001PULUM1180115001000001A" and check from field "CheckSum8 Modulo 256" the hexadecimal result which is in this case "85". From the above table, you see that this RIN is valid!

License for RIN: CC0

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    <img src="http://i.creativecommons.org/p/zero/1.0/88x31.png" style="border-style: none;" alt="CC0" />
  </a>
  <br />
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